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Data Sheet
July 30, 2026

TEKTRONIX

# Tektronix HFS9009 Stimulus System

Cooling, Power Supply: Forced-air, maximum about 106 cfm Line Voltage: Automatically switched ranges; typically 90-104 VAC (max 7 cards), 104-132 VAC (max 9 cards), or 180-250 VAC Fusing: Factory-specified 3AG-type fuses per service documentation Compared with the HFS9003 (3-slot / up to 12 channels), the HFS9009 provides the larger 9-slot / up to 36-channel configuration. All channels are slaved toacommon time base for precise channel-to-channel edge placement. Phase lock-in supports synchronization to an external frequency source for at-speed testing up to the installed card bandwidth. Line Voltage: Automatically switched ranges; typically 90-104 VAC (max 7 cards), 104-132 VAC (max 9 cards), or 180-250 VAC Fusing: Factory-specified 3AG-type fuses per service documentation Compared with the HFS9003 (3-slot / up to 12 channels), the HFS9009 provides the larger 9-slot / up to 36-channel configuration. All channels are slaved toacommon time base for precise channel-to-channel edge placement. Phase lock-in supports synchronization to an external frequency source for at-speed testing up to the installed card bandwidth.

| | |
|---|---|
| MODEL<br>**Tektronix HFS9009** | CALIBRATION<br>**Available on request** |
| CONDITION<br>**Used** | STATUS<br>**In stock** |
| RFQ / SKU<br>**HFS9009** | LISTING<br>**https://aumictechlabs.com/products/hfs9009-2/** |

NIST-traceable cal · SAM registered · 30-day returns · NAICS 423690 · 811210 · 541380

## This unit

The Tektronix HFS9009 Stimulus System is a modular signal generation platform for precise electronic device characterization. It combines data generation, pulse generation, and switch

matrix functionality in a fully digital architecture, delivering picosecond-level timing resolution and flexible multi-channel output configurations. Paired with a high-speed digitizing oscilloscope, the system enables comprehensive testing with up to 36 channels per mainframe, phase-locked operation, and advanced timing alignment capabilities.Technical Specifications Time Base Performance Frequency range: 50 kHz to 630 MHz Frequency resolution: <0.1% of programmed value Frequency accuracy: ±1% of programmed value RMS jitter: 15 ps ±0.05% of interval Phase lock-in frequency range: 6 MHz to 630 MHz Phase lock-in amplitude range: 0.8 V to 1.0 V peak-to-peak Output frequency: Any 2n multiple or submultiple of phase lock-in frequency, within installed card range Frame sync input: Initiates burst with external frequency reference Output Edge Placement Channel deskew range: -60 ns to 2.0 µs Channel deskew resolution: 1 ps Delay adjust range: 0 to 20 µs Delay adjust resolution: 1 ps Delay accuracy: 1% ±50 ps Width adjust range: 0 to 65,536 periods Width adjust resolution: 1 ps Output Performance Level resolution: 0.01 V HIGH level accuracy: ±2% of level ±50 mV LOW level accuracy: ±2% of HIGH level ±2% of amplitude ±50 mV Output aberrations (200 ps after 50% point): Overshoot +15% +20 mV, undershoot -10% -20 mV Maximum HIGH level: +5.00 V (HFS9DG1), +5.50 V (HFS9DG2) Minimum LOW level: -2.50 V (HFS9DG1), -2.00 V (HFS9DG2) Peak-to-peak amplitude range: 10 mV to 3.00 V (HFS9DG1), 10 mV to 5.50 V (HFS9DG2) Output transition time: <250 ps (<1 V p-p), 800 ps to 6 ns (variable) Trigger Input Input impedance: 50 Ω Input voltage range: ±5 V maximum Programmable threshold range: -4.70 V to +4.70 V Programmable threshold resolution: 100 mV Programmable threshold accuracy: ±100 mV ±5% of level Minimum input pulse width: 1 ns Input rise/fall time requirement: <10 ns Sensitivity: <500 mV Power Line voltage: 90 V AC to 130 V AC RMS, or 180 V AC to 250 V AC RMS (auto-switched)Key Features Fully digital architecture enables flexible pulse edge placement Picosecond timing resolution (1 ps) across delay and width adjustment Phase-locked multi-channel operation with programmable output frequency Channel deskew with -60 ns to 2.0 µs range supports timing synchronization HFS9DG1 and HFS9DG2 card options for output voltage and accuracy optimization Modular mainframe design scales to 36 channels Frame sync triggering from external sourcesTypical Applications High-speed digital device testing and validation Timing characterization of integrated circuits and subsystems Multi-channel stimulus generation with precise phase alignment Edge placement and rise/fall time parameter measurementCompatibility & Integration The HFS9009 integrates with high-speed digitizing oscilloscopes to form complete measurement systems. Phase lock-in capability supports external frequency references, enabling synchronization with external test environments. Modular card architecture accommodates both HFS9DG1 and HFS9DG2 output stages within a single mainframe.

## Features & description

From manufacturer datasheet

### Features

• 9-slot C-size VXI card-modular mainframe • Up to 36 stimulus channels in one mainframe • Up to 640 or more phase-locked channels across multiple mainframes • Fully digital architecture with 1 ps timing resolution • Independent edge placement and channel deskew on every channel • Up to 630 MHz repetition rate with compatible cards • Mixed logic-family support by combining card types • GPIB (IEEE-488) and RS-232 remote programmability • Front-panel keyboard and graphic flat-panel display • Optional BitWriter Windows software for remote setup and vector development

## HFS9009 Characteristics / Specifications

| PARAMETER | VALUE |
|---|---|
| **Required modules** | one CPU card, one time base card, and at least one pulse or data generator card |
| **Maximum generator cards** | up to nine |
| **CPU role** | receives front-panel, GPIB, or RS-232 commands and programs time base and generator cards over the VXI bus |
| **Time base role** | common clocking for all channels with external trigger and phase-lock capability |
| **Front panel** | keyboard and flat-panel display for interactive control Compatible Stimulus Cards |
| **HFS 9DG** | 4-channel Data Time Generator; up to about 315 MHz (extendable in half-rate modes); variable transition times from 800 ps to 6 ns; ideal for TTL, CMOS, and BiCMOS |
| **HFS 9PG1 / HFS 9PG** | 2-channel pulse generator cards for pulse-oriented stimulus Cards may be mixed in any combination within available slots for mixed-logic testing Technical Specifications |
| **Model** | HFS9009 |
| **Instrument Type** | Stimulus System Mainframe |
| **Form Factor** | C-size VXI card-modular mainframe |
| **Generator Slots** | 9 |
| **Maximum Channels per Mainframe** | 36 (with nine 4-channel cards) |
| **Timing Resolution** | 1 ps (with HFS 9DG1/9DG2 class cards) |
| **Maximum Repetition Rate** | up to 630 MHz (card dependent) |
| **Channel Deskew** | Independent wide deskew range for DUT cable/fixture compensation |
| **Signal Flexibility** | Data and timing on every pin; Pulse, NRZ, RZ, R1, and DC formats on data time generator cards |
| **DC Levels** | Programmable high/low logic levels to drive inactive lines without external DC sources |
| **Remote Interfaces** | GPIB and RS-232-C |
| **Overall Dimensions (rackmount)** | Width 16.75 in (425.79 mm); Height 14.00 in (355.89 mm); Depth 24.00 in (610.11 mm) |

| PARAMETER | VALUE |
| --- | --- |
| **Operating Temperature** | 0 C to +40 C |
| **Storage Temperature** | -40 C to +75 C Power |
| **Line Voltage** | Automatically switched ranges; typically 90-104 VAC (max 7 cards), 104-132 VAC (max 9 cards), or 180-250 VAC |
| **Fusing** | Factory-specified 3AG-type fuses per service documentation Operational Notes Compared with the HFS9003 (3-slot / up to 12 channels), the HFS9009 provides the larger 9-slot / up to 36-channel configuration. All channels are slaved toacommon time base for precise channel-to-channel edge placement. Phase lock-in supports synchronization to an external frequency source for at-speed testing up to the installed card bandwidth. |

## General Specifications & Supplementary Characteristics

| PARAMETER | VALUE |
| --- | --- |
| **Storage temperature** | 40 C to +75 C |
| **Operating temperature** | 0 C to +40 C |
| **Operating Temperature** | 0 C to +40 C |
| **Overall Dimensions (rackmount)** | Width 16.75 in (425.79 mm); Height 14.00 in (355.89 mm); Depth 24.00 in (610.11 mm) |
| **Line Voltage** | Automatically switched ranges; typically 90-104 VAC (max 7 cards), 104-132 VAC (max 9 cards), or 180-250 VAC |
| **Fusing** | Factory-specified 3AG-type fuses per service documentation Operational Notes Compared with the HFS9003 (3-slot / up to 12 channels), the HFS9009 provides the larger 9-slot / up to 36-channel configuration. All channels are slaved toacommon time base for precise channel-to-channel edge placement. Phase lock-in supports synchronization to an external frequency source for at-speed testing up to the installed card bandwidth. |

# Full OEM specifications

Complete technical content extracted from the manufacturer datasheet. Sparse OEM tables are reconstructed as tables below; other text is preserved as paragraphs.

Specifications

### Specifications

| PARAMETER | VALUE |
|---|---|
| **Model** | HFS9009 |
| **Instrument Type** | Stimulus System Mainframe |
| **Form Factor** | C-size VXI card-modular mainframe |
| **Generator Slots** | 9 |
| **Maximum Channels per Mainframe** | 36 (with nine 4-channel cards) |

Multi-mainframe Expandability: up to 640 or more phase-locked channels

### Specifications

| PARAMETER | VALUE |
|---|---|
| **Timing Resolution** | 1 ps (with HFS 9DG1/9DG2 class cards) |
| **Maximum Repetition Rate** | up to 630 MHz (card dependent) |
| **Channel Deskew** | Independent wide deskew range for DUT cable/fixture compensation |
| **Signal Flexibility** | Data and timing on every pin; Pulse, NRZ, RZ, R1, and DC formats on data time generator cards |
| **DC Levels** | Programmable high/low logic levels to drive inactive lines without external DC sources |
| **Remote Interfaces** | GPIB and RS-232-C |

Optional Software: BitWriter for Microsoft Windows vector/setup editing

Physical And Environmental
Overall Dimensions (rackmount): Width 16.75 in (425.79 mm); Height 14.00 in (355.89 mm); Depth 24.00 in (610.11 mm)
Weight (36-channel configuration, including standard accessories): Net about 81 lbs (33.7 kg); Shipping about 100 lbs (45.3 kg)
Cooling, Mainframe: Forced-air with air filter, maximum about 318 cfm
Cooling, Power Supply: Forced-air, maximum about 106 cfm
Operating Temperature: 0 C to +40 C
Storage Temperature: -40 C to +75 C

Power
Line Voltage: Automatically switched ranges; typically 90-104 VAC (max 7 cards), 104-132 VAC (max 9 cards), or 180-250 VAC
Fusing: Factory-specified 3AG-type fuses per service documentation

Operational Notes
Compared with the HFS9003 (3-slot / up to 12 channels), the HFS9009 provides the larger 9-slot / up to 36-channel configuration. All channels are slaved toacommon time base for precise channel-to-channel edge

placement. Phase lock-in supports synchronization to an external frequency source for at-speed testing up to the installed card bandwidth.

Notes

This manual OEM source was compiled from Tektronix HFS9000 Series user documentation and HFS9009 service/mechanical specifications covering the HFS9009 Stimulus System mainframe.

## Available from Aumictech

Used and refurbished unit evaluated in-house. Calibration: Available on request. Used · In stock.

Request a quote: **sales@aumictech.com** · +1 (484) 841-9341

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Generated July 30, 2026

Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.