

TEKTRONIX

DPO7354C

The Tektronix DPO7354C is a 3.5 GHz, 4-channel Digital Phosphor Oscilloscope from the DPO7000C series. It delivers up to 40 GS/s real-time sampling on one channel and 10 GS/s across all channels, combined with standard 50M record length (up to 500M optional). Featuring a 12.1-inch touchscreen, Pinpoint® triggering, and a Windows 7 64-bit operating system, the DPO7354C is designed for high-performance signal analysis, jitter characterization, compliance testing, and advanced debugging of complex digital designs.

SPECIFICATIONS

General

Interfaces	USB Host (front/side), USB Device, 10/100/1000BASE-T Ethernet (RJ-45), Video Out (DVI-D/VGA), TekConnect Probe Interface
Display	12.1 in. (307 mm) Bright XGA Display with Touch Screen

Physical

Power Supply	100 V to 240 V ±10% (50 Hz to 60 Hz); 115 V ±10% (400 Hz); <550 W maximum power consumption
Operating Temperature	5 °C to 45 °C °C
Dimensions (W×H×D)	451 mm × 292 mm × 265 mm mm
Weight	15 kg kg

Vertical System

Analog Bandwidth (-3 dB)	3.5 GHz
Calculated Rise Time (10% to 90%)	115 ps
Number of Input Channels	4
Input Impedance (1 M Ω)	1 M Ω $\pm$ 1% with 13 pF $\pm$ 2 pF
Input Impedance (50 Ω)	50 Ω $\pm$ 1%
Vertical Resolution (ADC)	8 bit (>11 bit with high res)
Maximum Input Voltage (1 M Ω)	$\pm$ 150 V CAT I, derate at 20 dB/decade to 9 Vrms above 200 kHz
Maximum Input Voltage (50 Ω)	5 VRMS, with peaks $\leq$ $\pm$ 24 V
Input Coupling	AC, DC, GND
Vertical Sensitivity (50 Ω)	1 mV/div to 1 V/div
Vertical Sensitivity (1 M Ω)	1 mV/div to 10 V/div
DC Gain Accuracy	$\pm$ 1% (for $\geq$ 5 mV/div), $\pm$ 1.5% (for <5 mV/div)
Vertical Position Range	$\pm$ 5 divisions
Hardware Bandwidth Limits	20 MHz, 250 MHz
Channel-to-Channel Isolation	$\geq$ 100:1 at $\leq$ 100 MHz, $\geq$ 30:1 at >100 MHz up to 3.5 GHz
Low-Frequency Limit (AC Coupled, typical)	<10 Hz at 1 M Ω , <150 kHz at 50 Ω
Probe Interface	TekConnect
Offset Range (50 Ω)	1 mV/div to 12 mV/div: $\pm$ 1 V; 12.2 mV/div to 98 mV/div: $\pm$ 1.5 V; 99 mV/div to 1 V/div: $\pm$ 10 V
Offset Range (1 M Ω)	1 mV/div to 12 mV/div: $\pm$ 1 V; 12.2 mV/div to 98 mV/div: $\pm$ 1.5 V; 99 mV/div to 1 V/div: $\pm$ 10 V; 1.01 V/div to 10 V/div: $\pm$ 100 V
Effective Number of Bits (ENOB)	5.4 bits (typical at 3 GHz, 50 Ω , 100 mV/div, 10 GS/s)

Horizontal System

Maximum Real-Time Sampling Rate (1 Channel)	40 GS/s
Maximum Real-Time Sampling Rate (All Channels)	10 GS/s
Maximum Record Length (Standard)	50 M points (1 channel)
Maximum Record Length (Optional)	Up to 500 M points
Time Base Range	25 ps/div to 1000 s/div
Channel-to-Channel Deskew Range	$\pm$ 75 ns
Max Duration at Highest Sample Rate (Standard)	1.25 ms
Max Duration at Highest Sample Rate (Optional)	Up to 12.5 ms
Maximum Real-Time Sampling Rate (2 Channels)	20 GS/s
Timebase Stability	$\pm$ 1.5 ppm initial accuracy; aging $\pm$ 1.0 ppm/year
Reference Loop Input Frequency	9.8 MHz to 10.2 MHz

Acquisition System

Sample Acquisition Mode	Acquire sampled values
Peak Detect Mode Min Pulse Width	50 ps
Averaging Factor Range	From 2 to 10,000 waveforms
Envelope Mode	From 1 to 2×10^9 waveforms included in min-max envelope
High Resolution Mode (HiRes)	Real-time boxcar averaging reduces random noise and increases resolution
Roll Mode	Scrolls sequential waveform points across display at sweep speeds slower than 50 ms/div (up to 10 MS/s with 40M max record length)
FastAcq Acquisition Mode	Optimizes the instrument for analysis of dynamic signals and capture of infrequent events
Maximum FastAcq Waveform Capture Rate	>250,000 wfms/s on all 4 channels simultaneously
Waveform Database Mode	Accumulate waveform database providing three-dimensional array of amplitude, time, and counts
FastFrame Segmented Memory	Acquisition memory divided into segments; maximum trigger rate >310,000 waveforms per second

Trigger System

Trigger Modes	Auto, Normal, and Single
Trigger Coupling	DC, AC, HF Rej, LF Rej, Noise Reject
Trigger Holdoff Range	250 ns to 12 s
Trigger Level Range (Internal)	±12 divisions from center of screen
Trigger Level (Aux In, 50 Ω)	±5 V
Trigger Level (Aux In, 1 MΩ)	±15 V
Trigger Level (Line)	Fixed at 0 V
Enhanced Triggering	Corrects the difference in timing between the trigger path and the acquired data path
Trigger Sequences	Main, Delayed by Time, Delayed by Events, Reset by Time, Reset by State, Reset by Transition
Trigger Delay by Time	3.2 ns to 250 s
Trigger Delay by Events	1 to 10,000,000 events
Serial Pattern Trigger (Option ST1G)	Up to 64-bit serial word recognizer, NRZ-encoded data up to 1.25 Gb/s
Communications-related Triggers (Option MTM)	Support for AMI, HDB3, BnZS, CMI, MLT3, and NRZ encoded communications signals
Video Trigger Formats and Field Rates	NTSC, PAL, SECAM, and HDTV 1080/24sF, 1080p/25, 1080i/50, 1080i/60, 1080p/24, 720p/60, 480p/60
Standard Trigger Types	Edge, Glitch, Width, Runt, Timeout, Transition Time, Logic Pattern, Logic State, Setup/Hold, Window
Trigger Jitter (typical)	<1.5 ps RMS (with Enhanced Triggering enabled)
Trigger Sensitivity (A Trigger, Edge, DC Coupled)	0.7 div from DC to 50 MHz, increasing to 1.2 div at 3 GHz

Clock Recovery System

Clock Recovery PLL Bandwidth	Fixed at FBaud/500
Clock Recovery Frequency Range	1.5 MBaud to 1.25 GBaud
Clock Recovery Tracking/Acquisition Range	±5% of requested baud rate (typical)
Min Signal Amplitude for Clock Recovery	1 div p-p up to 1.25 GBaud (typical)

Waveform Measurements and Analysis

Automated Measurements	53 automated measurements
Advanced Search and Mark	Automatically search and mark events and document waveforms
Waveform Histograms	Yes
FFT Analysis	Yes

Display and User Interface

MyScope Custom Control Windows	Yes
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Connectivity and Ports

LXI Compliance	LXI Class C Compliant
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Processor and Storage

Operating System	Microsoft Windows 7 64-bit
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Physical Characteristics

Form Factor	Benchtop
Cooling Clearance (Left Side)	76 mm (3 in.)

Computer System

Processor	Intel Core 2 Duo, 3.0 GHz
System Memory	8 GB
Hard Disk Drive	≥500 GB removable HDD (standard)

Environmental

Operating Altitude	3,000 m (10,000 ft.)
Storage Altitude	12,192 m (40,000 ft.)

Ports & Connectivity

External Reference Output	10 MHz, >1.2 V p-p into 50 Ω
Video Output Ports	1x DVI-D, 1x VGA

General Specifications

Optical Drive	Built-in DVD±RW
Safety Compliance	UL61010-1, CAN/CSA-C22.2 No. 61010-1, EN 61010-1
Electromagnetic Compatibility	EN 61326-1, EN 61326-2-1, FCC Part 15 Subpart B Class A

Environmental & Physical

Vibration Resistance (Operating)	0.31 g RMS, 5 to 500 Hz
Vibration Resistance (Non-operating)	2.46 g RMS, 5 to 500 Hz

TECHNOLOGY

Digital Phosphor Oscilloscope (DPO)

APPLICATIONS

Signal Integrity, Debugging Complex Designs, Serial Bus Analysis, Compliance Testing

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