

## TEKTRONIX

# DPO7254

The Tektronix DPO7254 is a 2.5 GHz, 4-channel Digital Phosphor Oscilloscope from the DPO7000 series, designed for verification, characterization, and debugging of sophisticated electronic designs. It offers exceptional signal acquisition performance with up to 40 GS/s real-time sample rate on a single channel and a maximum waveform capture rate exceeding 250,000 wfms/s.

## SPECIFICATIONS

### General

|            |                                                                                                      |
|------------|------------------------------------------------------------------------------------------------------|
| Interfaces | USB 2.0 (Host and Device), LAN (10/100/1000Base-T Ethernet), GPIB (IEEE 488.2), RS-232, Video Output |
| Display    | 12.1-inch XGA (1024 × 768) active-matrix color LCD touch screen                                      |

### Physical

|                       |                                         |
|-----------------------|-----------------------------------------|
| Power Supply          | 100 to 240 V ±10%, 47 to 63 Hz, < 550 W |
| Operating Temperature | 5 to 45 °C                              |
| Dimensions (W×H×D)    | 451 × 292 × 265 mm                      |
| Weight                | 15 kg kg                                |

### Vertical System

|                                    |                                                                                      |
|------------------------------------|--------------------------------------------------------------------------------------|
| Input Channels                     | 4                                                                                    |
| Analog Bandwidth                   | 2.5 GHz                                                                              |
| Input Impedance                    | 50 Ω ±1.5% or 1 MΩ ±1% (13 pF typical)                                               |
| Input Coupling                     | DC, AC, GND                                                                          |
| Vertical Resolution                | 8 bits (>11 bits with HiRes)                                                         |
| Sensitivity Range (50 Ω)           | 1 mV/div to 1 V/div                                                                  |
| Sensitivity Range (1 MΩ)           | 1 mV/div to 10 V/div                                                                 |
| Hardware Bandwidth Limits          | 20 MHz, 250 MHz                                                                      |
| Maximum Input Voltage (50 Ω)       | 5 Vrms, with peaks ≤ ±24 V                                                           |
| Maximum Input Voltage (1 MΩ)       | ±150 V CAT I, derate at 20 dB/decade to 9 Vrms above 200 kHz                         |
| Rise Time (10% to 90%, Typical)    | 160 ps                                                                               |
| Rise Time (20% to 80%, Typical)    | 120 ps                                                                               |
| DC Gain Accuracy                   | ±1.5% (with offset set to 0 V)                                                       |
| Position Range                     | ±5 divisions                                                                         |
| Channel-to-Channel Delay (Typical) | ≤ 100 ps (any two channels at equal V/div and coupling)                              |
| Offset Range (50 Ω)                | ±1 V (1 mV to 50 mV/div); ±10 V (50.5 mV to 1 V/div)                                 |
| Offset Range (1 MΩ)                | ±1 V (1 mV to 50 mV/div); ±10 V (50.5 mV to 500 mV/div); ±100 V (505 mV to 10 V/div) |

## Horizontal System

|                           |                         |
|---------------------------|-------------------------|
| Timebase Range            | 50 ps/div to 1000 s/div |
| Timebase Accuracy         | ±2.5 ppm                |
| Timebase Delay Time Range | 5 ns to 250 s           |

## Acquisition System

|                                            |                                                                       |
|--------------------------------------------|-----------------------------------------------------------------------|
| Maximum Real-Time Sample Rate (1 Channel)  | 40 GS/s                                                               |
| Maximum Real-Time Sample Rate (2 Channels) | 20 GS/s                                                               |
| Maximum Real-Time Sample Rate (4 Channels) | 10 GS/s                                                               |
| Maximum Record Length (with Options)       | Up to 400 Mpts (1 channel, configuration dependent)                   |
| Maximum Waveform Capture Rate              | > 250,000 wfms/s                                                      |
| Acquisition Modes                          | Sample, Peak Detect, Averaging, Envelope, HiRes, WfmDB, FastAcq, Roll |

## Trigger System

|                                      |                                                                                                                         |
|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Advanced Trigger Types               | Edge, Glitch, Width, Runt, Timeout, Transition, Setup/Hold, Pattern, State, Window, Trigger Delay, Serial Pattern (NRZ) |
| Trigger Capabilities                 | Pinpoint Triggering with over 1400 combinations                                                                         |
| Trigger Jitter (RMS)                 | 1.5 ps (typical)                                                                                                        |
| Trigger Sensitivity (Internal, Edge) | 0.35 div from DC to 50 MHz, increasing to 1 div at 2.5 GHz                                                              |

## Waveform Math and Analysis

|                |                                                                |
|----------------|----------------------------------------------------------------|
| Math Functions | Add, Subtract, Multiply, Divide, Integrate, Differentiate, FFT |
|----------------|----------------------------------------------------------------|

## Computer System and Storage

|                  |                      |
|------------------|----------------------|
| Operating System | Microsoft Windows XP |
|------------------|----------------------|

## Inputs & Outputs

|                                  |        |
|----------------------------------|--------|
| Reference Clock Input Frequency  | 10 MHz |
| Reference Clock Output Frequency | 10 MHz |

## Environmental

|                        |                            |
|------------------------|----------------------------|
| Operating Altitude     | Up to 3,000 m (9,843 ft)   |
| Non-operating Altitude | Up to 12,192 m (40,000 ft) |

## Compliance

|                                     |                                                             |
|-------------------------------------|-------------------------------------------------------------|
| Safety Compliance                   | UL61010-1, CAN/CSA C22.2 No. 61010-1, EN61010-1, IEC61010-1 |
| Electromagnetic Compatibility (EMC) | EN61326-1, Class A                                          |

## TECHNOLOGY

Digital Phosphor Oscilloscope (DPO)

## APPLICATIONS

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Signal integrity analysis, high-speed serial data compliance testing, jitter and timing analysis, DDR memory bus analysis, and embedded system debugging.

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