

## 2 9420 Product Description

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### MANUAL/REMOTE CONTROL

The 9420's front-panel layout and operation will be very familiar to users of analog oscilloscopes. The "analog" feel is emphasized by rapid instrument response and the fact that waveforms are presented instantly on the high-resolution screen.

The 9420 has also been designed for remote control operation in automated testing and computer-aided measurement applications. The entire measurement process, including cursor and pulse parameter settings, dynamic modification of front-panel settings and display organization, can be controlled via the rear-panel GPIB (IEEE-488) and RS-232-C ports.

The LeCroy 9420 is capable of storing up to seven front-panel setups which may be recalled either manually or by remote control, thus ensuring rapid oscilloscope front-panel configuration. When the power is switched off, the current 9420 front-panel setting is automatically stored, for subsequent recall, at the next power on.

### SPECIFICATIONS

#### Vertical Analog Section

**Bandwidth (- 3 dB):**

@ 50  $\Omega$ : DC to 350 MHz.

@ 1 M $\Omega$  AC: < 10 Hz to 250 MHz typical at the probe tip.

@ 1 M $\Omega$  DC: DC to 250 MHz typical at the probe tip.

**Input impedance:** 1 M $\Omega$  // 30 pF and 50  $\Omega$   $\pm$  1%.

**Channels:** Two independent channels; standard BNC connector inputs.

**Sensitivity:** 5 mV/div to 2.5 V/div continuously variable from 1 to 2.5 times the fixed setting. Fixed settings range from 5 mV/div to 1 V/div in a 1, 2, 5 sequence.

**Vertical expansion:** up to 5 times (with averaging, up to 10 times or 500  $\mu$ V/div sensitivity).

**Scale factors:** Probe attenuation factors of  $\times 1$ ,  $\times 10$ ,  $\times 100$ ,  $\times 1000$  or  $\times 10000$  may be selected and are remotely programmable.

**Offset:**  $\pm$  12 times the fixed sensitivity setting in 0.02 division increments up to  $\pm$  10 V max.;  $\pm$  24 div @ 10 mV/div;  $\pm$  48 div @ 5 mV/div.

**DC accuracy:**  $\leq$   $\pm$  2%.

**Bandwidth limiter:** 80 MHz (- 3 dB) typical.

**Max input voltage:** 250 V (DC + peak AC) at 1 M $\Omega$ ,  $\pm$  5 V DC (500 mW) or 5 V RMS at 50  $\Omega$ .

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Vertical Digital Section	<p>ADCs: One per channel, 8-bit Flash.</p> <p><b>Conversion rate:</b> Up to 100 megasamples/sec for transients, up to 10 gigasamples/sec for repetitive signals, simultaneously on both channels.</p> <p><b>Aperture uncertainty:</b> <math>\pm 10</math> psec.</p> <p><b>Acquisition memories, Channel 1 and 2:</b> Non-volatile memories (battery backed for a minimum of 2 years) of 50 kilowords per channel can be segmented into 2, 5, 10, 20, 50, 100 or 200 blocks.</p> <p><b>Reference memories, C and D:</b> 50K, 16-bit word memories which can store one acquired and/or processed waveform, or up to 200 waveforms when segmented.</p> <p><b>Function memories E and F:</b> Two 50K, 16-bit word memories for waveform processing.</p>
Peak and Glitch Detection	<p>Minimum and maximum peaks, as fast as 0.002% of the record length (minimum 10 nsec), are captured and displayed with 100% probability.</p> <p>Using LeCroy's new FASTGLITCH trigger technique (see the trigger section below), glitches faster than 2.5 nsec can be detected on all time-base settings.</p>
Horizontal Section	
Time Base	<p><b>Range:</b> 1 nsec/div to 5000 sec/div.</p> <p><b>Clock accuracy:</b> <math>\leq \pm 0.01\%</math>.</p> <p><b>Interpolator resolution:</b> 5 psec.</p> <p><b>Sampling clock output:</b> BNC connector on rear panel.</p> <p><b>External clock in:</b> BNC connector on rear panel.</p>
Acquisition Modes	<p><b>Random Interleaved Sampling (RIS)</b> for repetitive signals from 1 nsec/div to 20 <math>\mu</math>sec/div;</p> <p><b>Single shot</b> for transient signals and repetitive signals from 50 nsec/div to 200 msec/div;</p> <p><b>Roll</b> for slowly changing signals from 500 msec/div to 5000 sec/div.</p> <p><b>Sequence mode</b> divides the acquisition memory into 2, 5, 10, 20, 50, 100, or 200 segments.</p>
Horizontal expansion	<p>Dual zoom mode allows two different signals or two different sections of the same signal to be expanded up to 1000 times.</p>