the digital processing oscilloscope...

processing—a new dimension for the 7000-Series Oscilloscope family.

The Digital Processing Oscilloscope combines the waveform viewing power of the 200-MHz general-purpose oscilloscope with the processing power of the modern minicomputer. The P7001 Processor, housed between the Acquisition Unit and Display Unit, provides complete two-way computer communication.

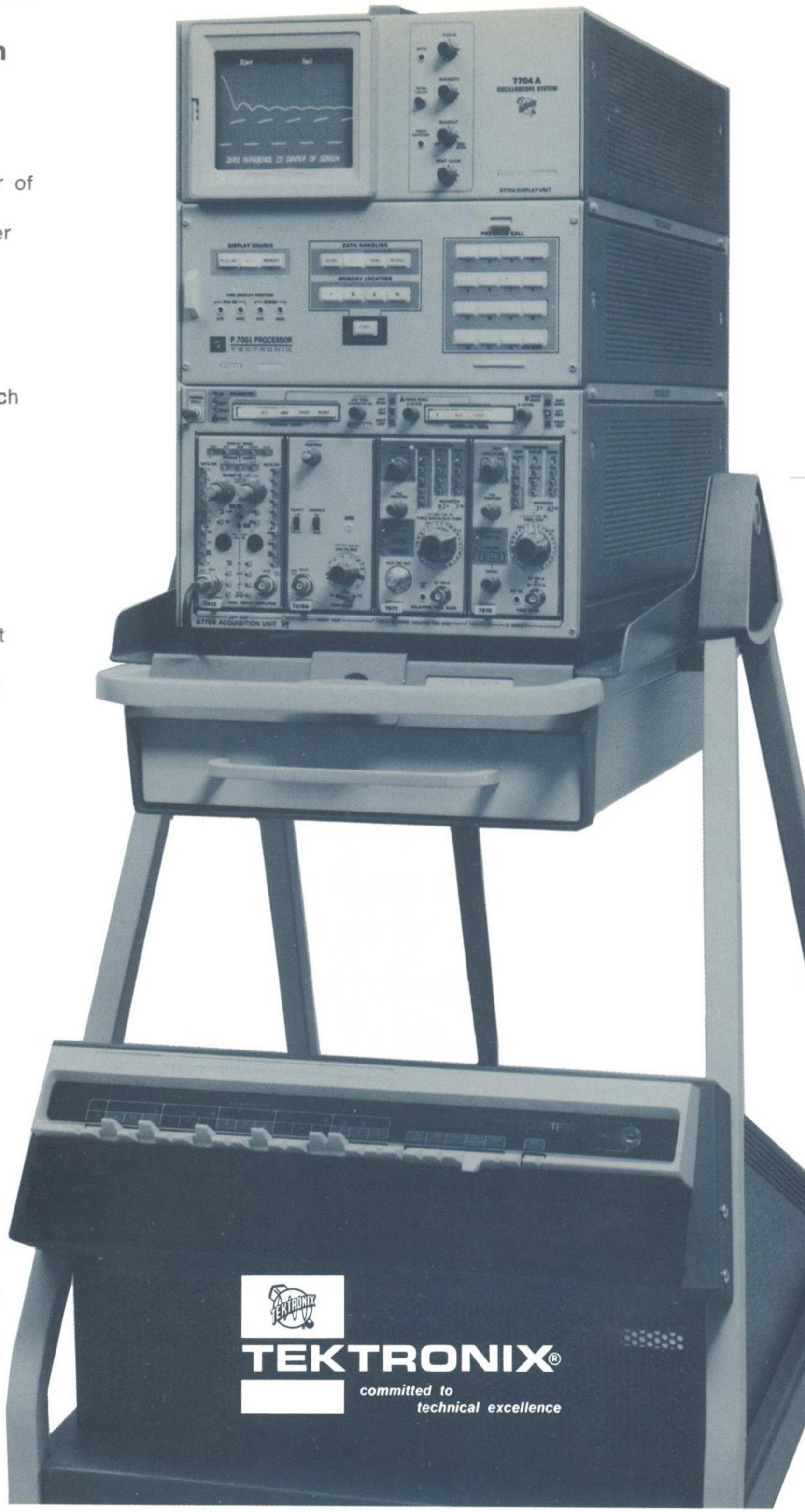
Any waveform and its parameters which can be displayed on the CRT can be digitized, stored, and sent to the minicomputer for processing. The processed results returned by the minicomputer can be stored and/or displayed on the CRT.

The P7001 contains an I/O interface, A/D converters, D/A converters and 4,000 words of 10 bit core memory. It can store up to four digitized waveforms, associated parameters and messages. Sixteen User Definable Program Call buttons permit the operator to call prestored computer-measurement programs.

Processing means the user is no longer limited to 'scope waveforms for his information. The conventional display is usually of amplitude vs time (YT) format.

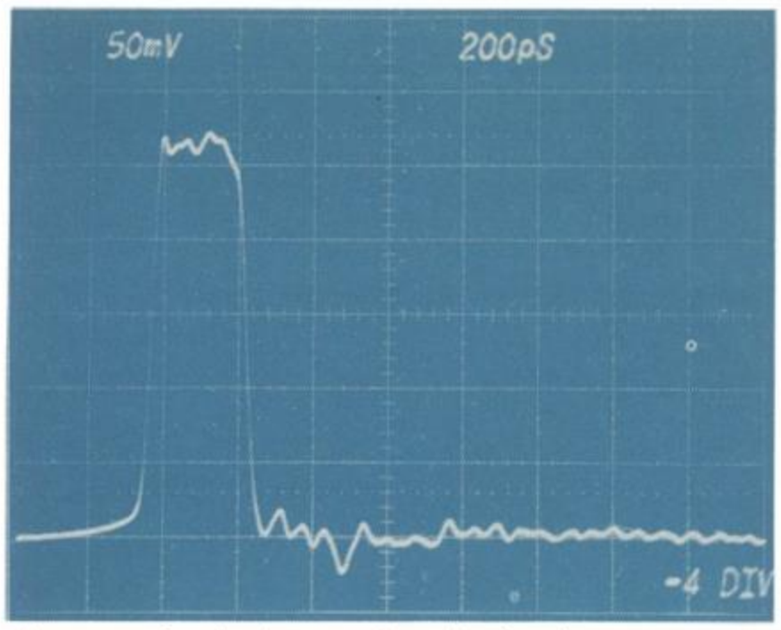
Suppose that the desired data is really of the dV/dt form. The derivative of a waveform can be calculated manually (providing that the waveform can be expressed as a math equation). *BUT* the Digital Processing Oscilloscope will perform the desired operation *AND* display the result at the press of a button. For this application and others see the illustrations at right.

The Digital Processing Oscilloscope is available in packages complete with Oscilloscope, plug-ins, Processor, minicomputer and APD Basic Software. For complete information contact your local Tektronix field engineer or write Tektronix, Inc., P. O. Box 500, Beaverton, Oregon 97005 for your copy of the "Digital Processing Oscilloscope" brochure.

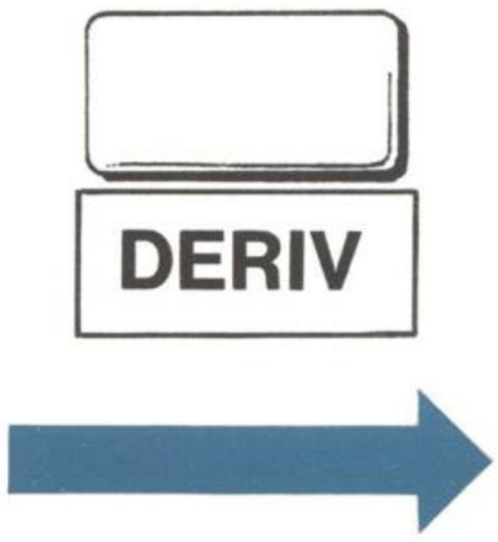


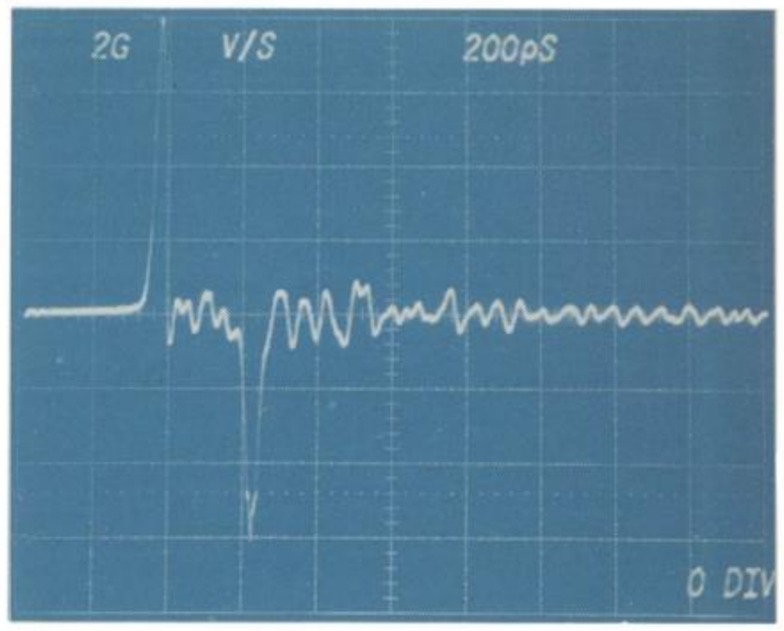
what it means to you...

...a few examples of the new measurement capabilities available at the press of a button.

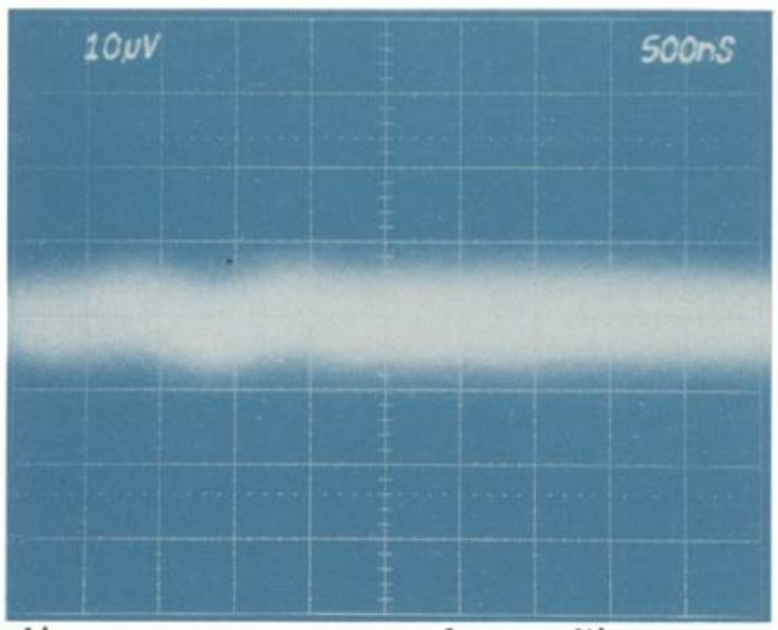


A very fast rise pulse is to be processed. The ground level is 4 divisions below the center line as indicated in the lower right corner.



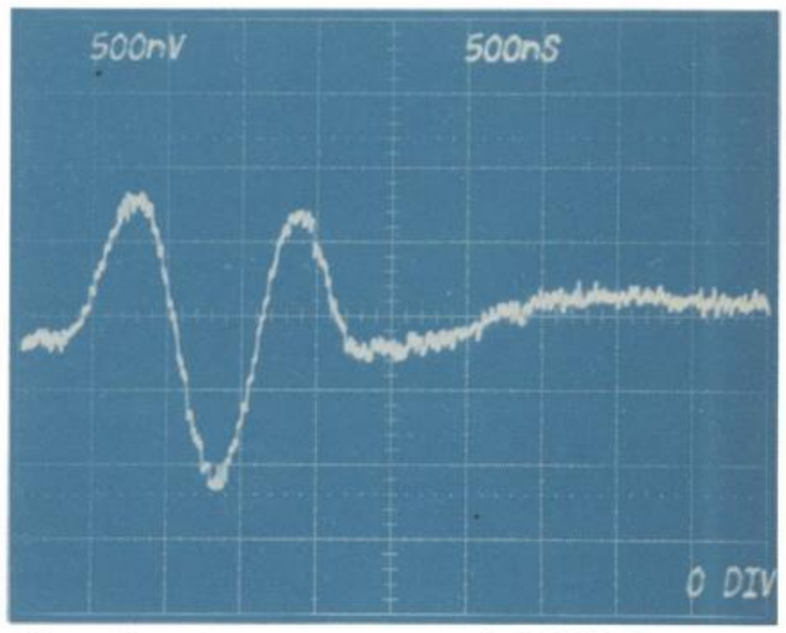


The result of pressing the Program Call button gives dV/dt for the waveform.

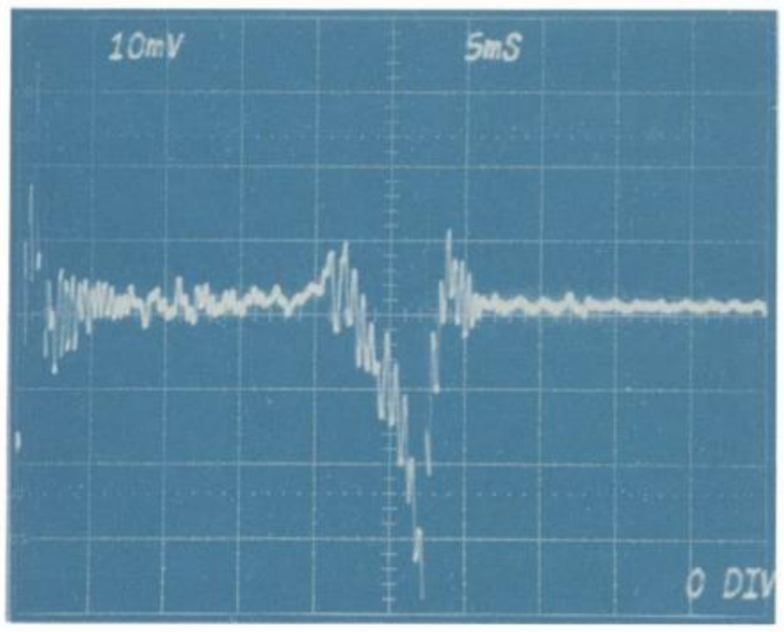


Above we see a waveform with so much noise present that no meaningful information is visible.

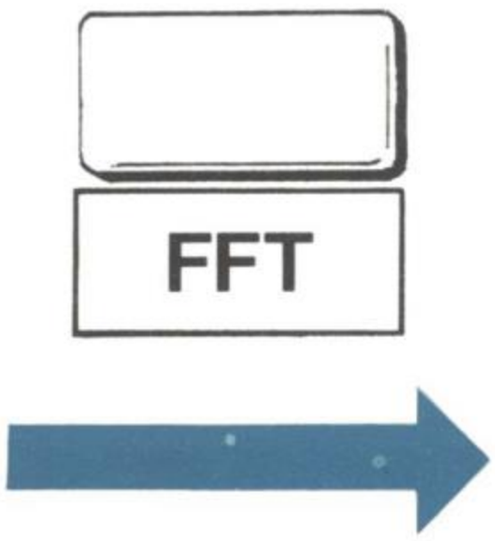
After pressing the SIG AVE (Signal Averaging) button the resultant waveform appears.

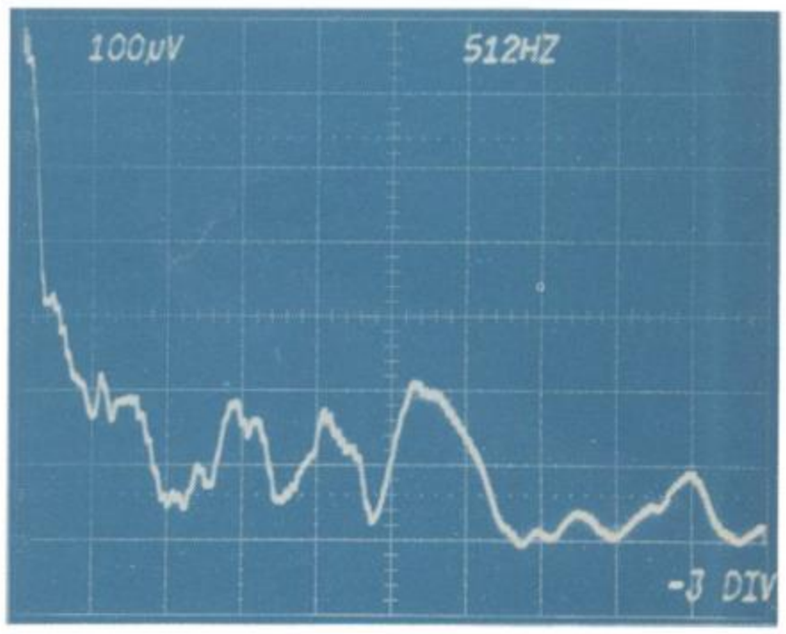


The signal was averaged 5,000 times and automatically rescaled for this display. Note the vertical sensitivity for this display is 500 nV/div.



The electrical signal caused by contact bounce in a switch is stored on a single shot sweep of the time base.

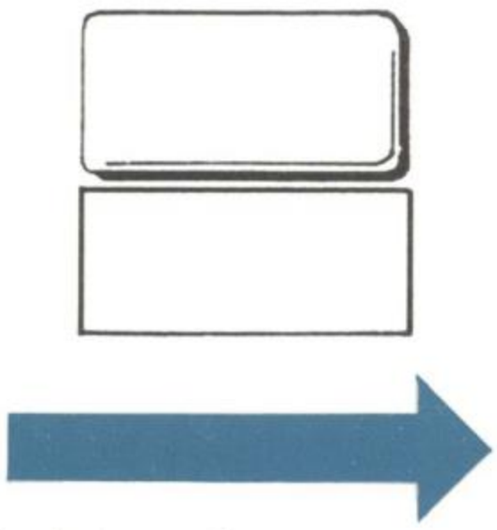




Pressing the FFT button shows the frequency distribution of the switch contact bounce with a frequency span of 512 Hz/div.

your waveform here

What is your measuring requirement?



Press the button of your program which you wrote for your requirement.

your **processed** waveform here

The answer will appear above.