ScopeMeter192/196/199 Manual Supplement

Using Waveform Math Functions

When adding, subtracting, or multiplying the input A and input B waveform, the test tool will display the mathematical result waveform and the input A and input B waveforms.

A versus B provides a plot with input A on the vertical axis and input B on the horizontal axis.

The math functions perform a point-to-point operation on waveforms A and B.

To use a math function, do the following:

1	SCOPE	Display the **SCOPE** key labels.
2	F4	Open the **Waveform Options** menu. **Waveform Options** **Display Glitches:** ■Yes □No **Waveform:** ■Normal □Average... □Persistence... □Mathematics...
3	F4	Jump to **Waveform:** and Select **Mathematics...** to open the **Mathematics** menu. **Mathematics** **Function:** □Off □A vs B ■A + B □A - B □A * B **Scalefactor:** □1 □/16 ■/2 □/4 □/8
4	F4	Select Function: A+B, A-B, AxB or A vs B.
5	F4	Select a scale factor (not for A vs B) to fit the mathematical result waveform onto the display, and return.

The sensitivity range of the mathematical result is equal to the sensitivity range of the least sensitive input divided by the scale factor.

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Cursor Measurement Readings On Math Waveforms

Cursor measurements on a A*B Math waveform gives a reading in Watts if input A measures (milli)Volts and input B measures (milli)Amperes.

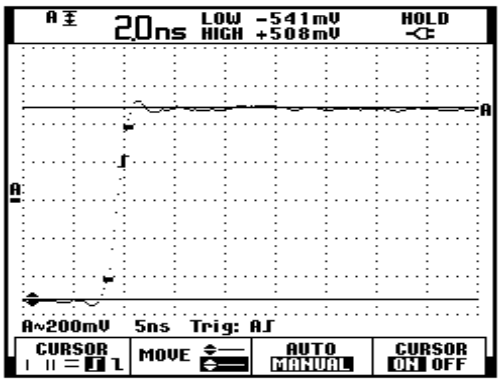
For other cursor measurements on a Math waveform amplitude no reading will be available if the input A and input B measurement unit are different.

Making Rise Time Measurements

To measure rise time, do the following:

1	CURSOR	From scope mode, display the cursor key labels. CURSOR | MOVE | AUTO MANUAL | CURSOR ON OFF
2	F1	Press to highlight ⌋ (rise time). Observe that two **horizontal** cursors are displayed.
3	F3	If only one trace is displayed, select MANUAL or AUTO (this automatically does the steps 4 to 6). For multiple traces select the required trace A, B, or M (if a Math function is active).
4	▲ ▼	Move the upper cursor to 100% of the trace height. A marker is shown at 90%.
5	F2	Highlight the other cursor.
6	▲ ▼	Move the lower cursor to 0% of the signal height. A marker is shown at 10%.

The reading shows the rise time from 10%-90% of the trace amplitude.



Risetime Measurement