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Capturing Y1-Y2 with the Defib-5

IEC 60601-1 Issue 3 Figure 10 requires the engineer to capture a waveform from a measurement network Y1-Y2. In this case, this is the math that is applied to the two outputs as well. If the waveform resulting from subtracting the voltage at Y2 from the voltage at Y1 has a peak of less than one volt, the circuit being tested passes.

There are two BNCs on the front panel of the Defib-5. When the Defib-5 is connected to the DUT per the MegaPulse Manual, Figure D-1, the Y1 and Y2 BNCs should be connected to a digital oscilloscope. The following procedure and photos show proper oscilloscope setup to obtain expected results.

Y1-Y2 using Pass-Fail reference

1. Connect Output 50 ohm to the pink terminal of the Pass-fail reference.
2. Connect MEAS POINT to the blue terminal of the Pass-fail reference
3. Connect Y1 to channel 1 and Y2 to channel 2 using BNC oscilloscope cable. Note: 1:1 oscilloscope probe cable must be used for proper results.
4. Set the math function A-B (Math function also has a Voltage/Div setup and it should be set to 500mV/div, see attached pictures)
5. Set channel 1 and 2 at 1X with 500mV/div (Channels also have other settings that should be similar to the oscilloscope shown. Please see the attached pictures for how we set ours up.)
6. Set the trigger on channel 1 at 100mV (Trigger setting must be at POSITIVE EDGE detection, NORMAL sweep, DC Coupling, see attached pictures)
7. Activate just the math function. That is, make sure channel 1 and 2 most be off (This avoids reading the wrong signal)
8. Set the time at 500 mS.
9. Charge the Tester to 5000 V (Make sure to use normal polarity)
10. Make sure that the oscilloscope is not triggered by noise, then press the DEFIB-5 Trigger (The scope must be at RUN or Single shot mode just before the DEFIB-5 Pulse.

Please see illustrative scope screenshot photos showing our scope setup on the following pages. Thank you for reading this paper. If there are any questions, please mail us at support@compwest.com or call us at (858) 481-6454.

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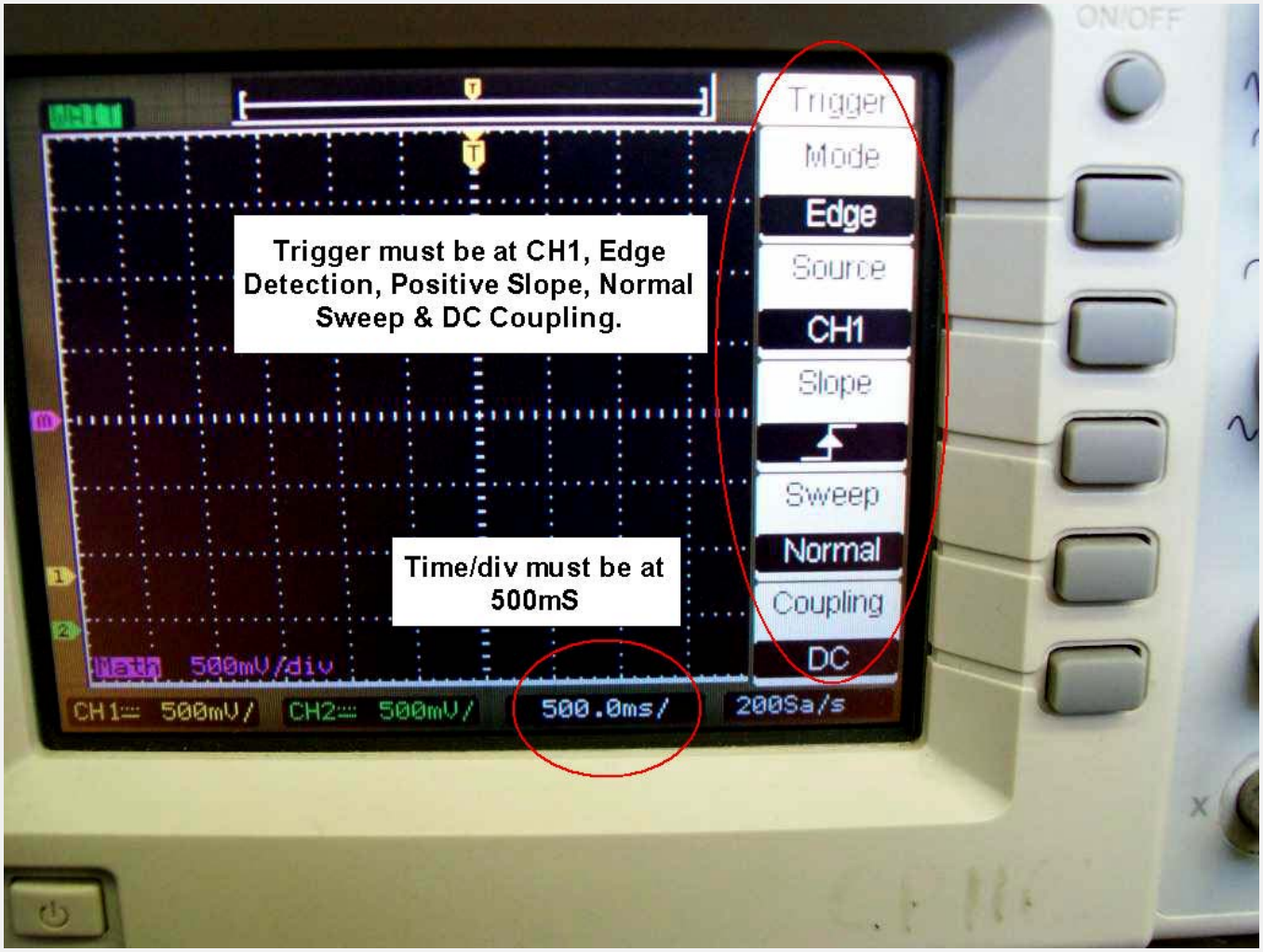

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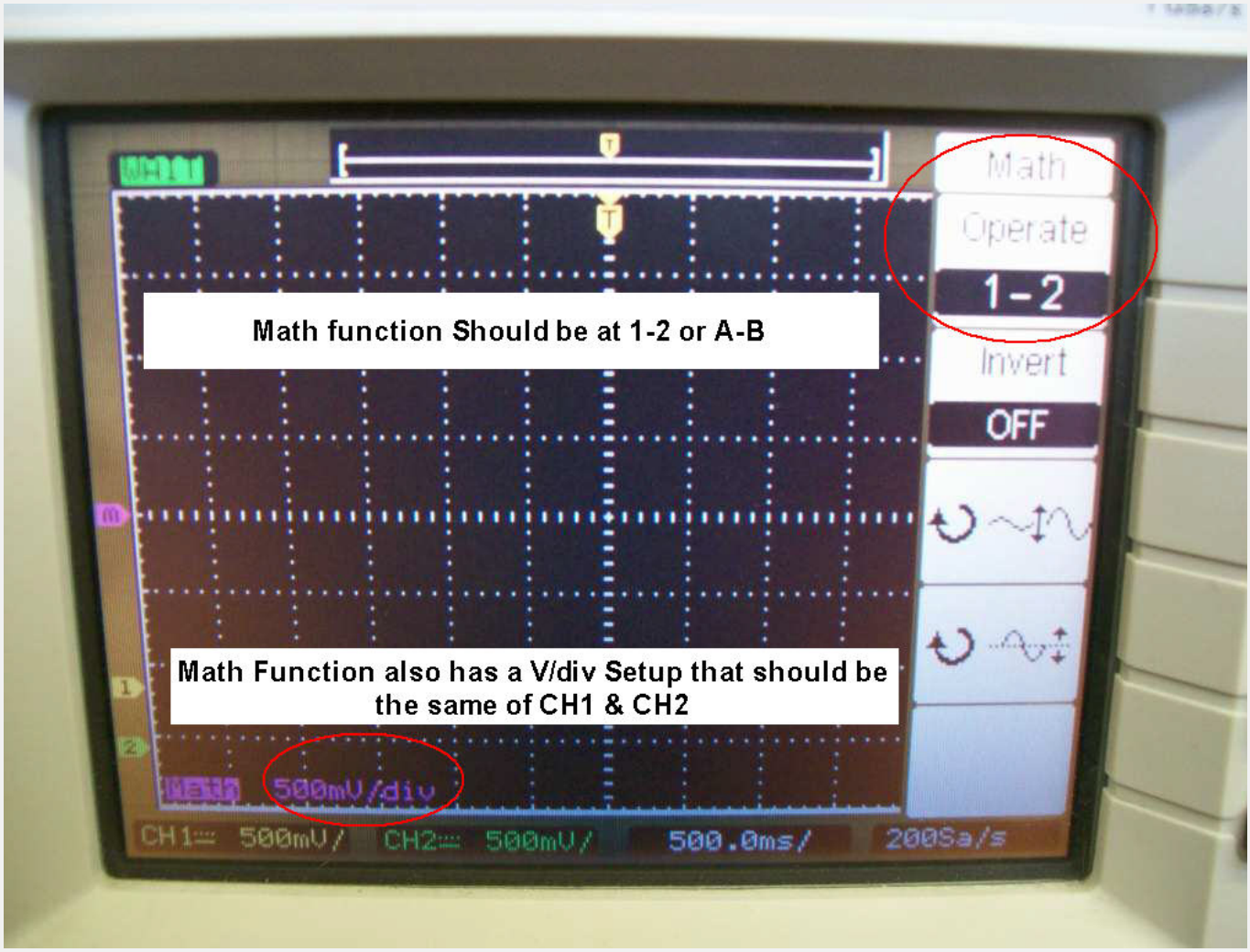

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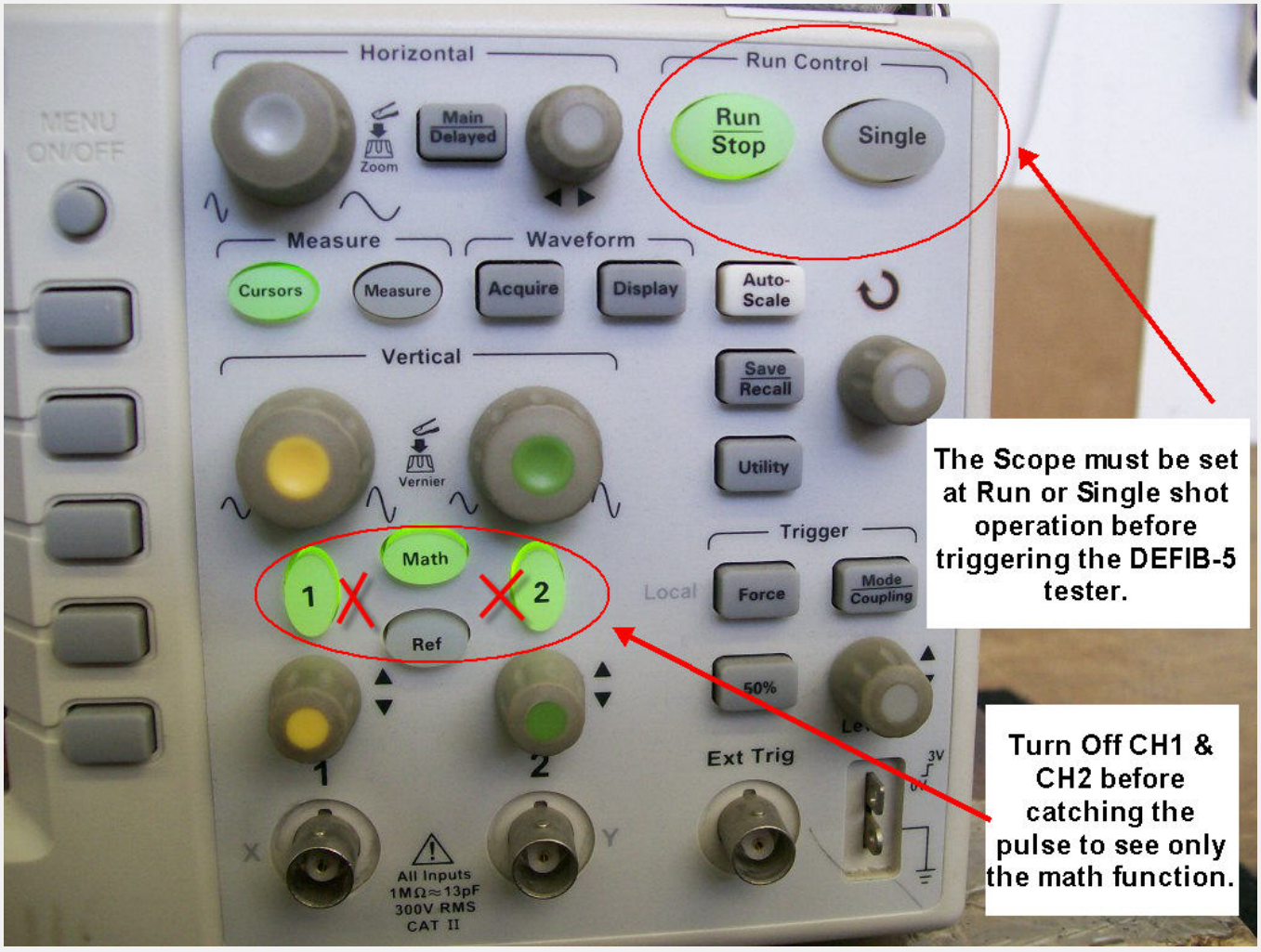

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