

Differential probes

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Hi:

I have a Tek P5205 1:50/1:500 100MHz probe. I just tested it with a 1MHz square wave and it gives nice clean edges with little ringing.

However, a Fluke DP120 20MHz 1:20/1:200 probe loaned to me by an Agilent sales rep. gives miserably ringing edges. The Fluke is kind of silly in having 4 ft. long heavy cables with huge probes that look suitable for heavy duty power distribution probing. Not very convenient for little stuff.

But worse, the Fluke gives horribly ringing edges. I tried making the test cables into a twist-pair, which helped a little but not much. Do the designers ever really think that the thing can give meaningful measurements of 20MHz signals with such a huge pickup loop area! Also, the FP120 is about 4x more noisy than the Tek. The Fluke must have a power supply in there to generate a negative supply, whereas the Tek just pulls clean power from the scope.

Ugh!

The problem with the Tek is it can only work with the scope. But I need to look at a filtered signal to get better RMS measurements of PWM BLDC motor terminal voltages.

Although the FLuke gave a little better 1MHz CMRR of about -66dB vs. Tek -49dB.

There are also a bunch of probes on the market that look like this:

<http://www.probemaster.com/activedifferential.html>

<http://www.linkinstruments.com/adf25.htm>

I wonder how they perform?

Oh well, just deliberating in public.

Thanks for input.

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Good day!

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