

Re: Calibration Of Electronic Equipment In The Home Workshop

Source: <http://sci.tech-archive.net/Archive/sci.electronics.repair/2007-03/msg00229.html>

- *From:* "Anthony Fremont" <spam-not@xxxxxxxxxxxx>
 - *Date:* Sun, 4 Mar 2007 04:58:04 -0600
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Jim Yanik wrote:

"Anthony Fremont" <spam-not@xxxxxxxxxxxx> wrote in
news:12ukcke5br2bha2@xxxxxxxxxxxxxxxxxxxxxx:

MassiveProng wrote:

On 2 Mar 2007 15:09:30 -0800, "David L. Jones"
<altzone@xxxxxxxx>
Gave us:

Which is why you do it for each range and
then spot check it to see
that there is no funny business. Perfectly
valid technique for home
calibration of a scope vertical scale.

Dave :)

It doesn't matter how many "places" you "spot check" it, you
are
not going to get the accuracy of your comparison standard on
the
device you intend to set with it. What you do is take the basic
INaccuracy of the device needing to be set, and add to it the
basic
INaccuracy of the standard to which you are setting it. You
CANNOT
get any closer than that. So, a 0.5% meter, and a 0.5% scope
cannot
be used together to make the scope that accurate. You need a
finer standard than the accuracy level you wish to achieve.

You need to understand that as a basic fact, chucko.

Re: Calibration Of Electronic Equipment In The Home Workshop

The "basic fact" here is that we were talking about adjusting a 3% scope with a .03% meter. Now that the numbers are back where they belong, please proceed to restate your case. The scope's vertical sensitivity could easily be adjusted to within 3% using said meter, now can't it? Just like Keith says.....

Actually, one CAN calibrate an instrument to a greater accuracy than its specified accuracy,—for a short time—;it's called a transfer standard.

Of course, there are limits to how much greater accuracy you can achieve, based on resolution and repeatability.

For ordinary calcs, your standard should be at least 4x better than the DUT. 10x is great.

Thanks Jim. It's nice to read something that makes me feel like I still retain some semblance of sanity. That all seems completely reasonable, and you didn't even have to curse or make threats. ;—)

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