CITS – Coupon Verification Tests

Setting the probe length to a value less than the actual length of the probe means that we can see the results of the pulse as it transitions through the end of the probe and the probe tips.

There are 3 measurement values that need to be set so that a meaningful test can be performed.
These are:-

a. **Probe Length** – setting a value to less than the length of the probe will allow you to see the pulse as it transitions the probe tips

b. **Test From** – This value is taken from the end of the probe to where the test will start – this should be set to exclude the aberration's due to the connectivity of the pins to the coupon

c. **Test To** - Set to the (Length of the coupon + **Test From** value) – a percentage to exclude the last portion of the coupon

As an example utilising a IPS50 probe which is approx. 150mm long to test a 50 ohm coupon that is also 150 mm the values might be as follows :-

a. **Probe Length** – 100mm

b. **Test From** – 70mm

c. **Test To** - (Coupon = **150mm**) + (Test From = **70mm**) = **220mm** – 20mm (10%) = **200mm**

Test 1

Perform an open circuit test with the probe attached to the CITS cable but not connected to a coupon.
With the above CITS Test values this should give a result similar to the following :-
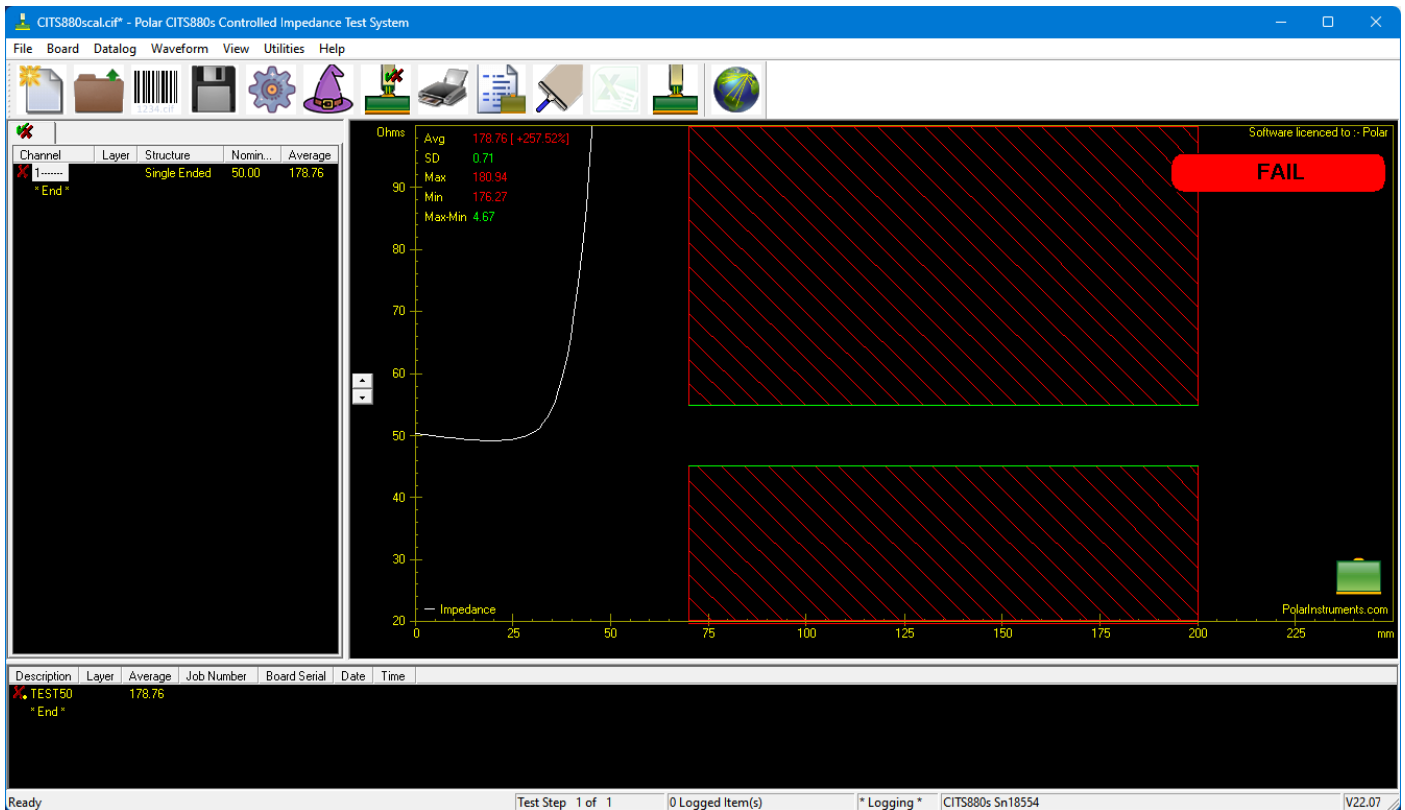
Here can be seen the portion of the pulse (white waveform) as it transitions the probe with a nice clean step to an open circuit.

TEST 2

Next we perform a test on a 50 ohm coupon with the same settings as above.

We expect to see some minor aberration around the end of the probe where the probe needles connect to the coupon then a relatively flat section over the length of the coupon and finally after the coupon the pulse rises sharply.

REVERSED PROBES

If the probe tips are reversed on the coupon then we will see a waveform similar to the following - retest with the probes connected correctly:-