Hardware Measurement of R_{in}

Set Scope for Ch1 Minus Ch2

Oscilloscope

Ch1   Ch2

Keep Power Supply On

Pwr Supply

Keep Signal Source

Keep Load Resistor Connected

R_{in}

RS

50

RTest

Vtest1   Vtest2

CBlock

Your Circuit

Vout

VSig

Insert Coupling Capacitor if input bias is NOT provided by signal source.

RLoad
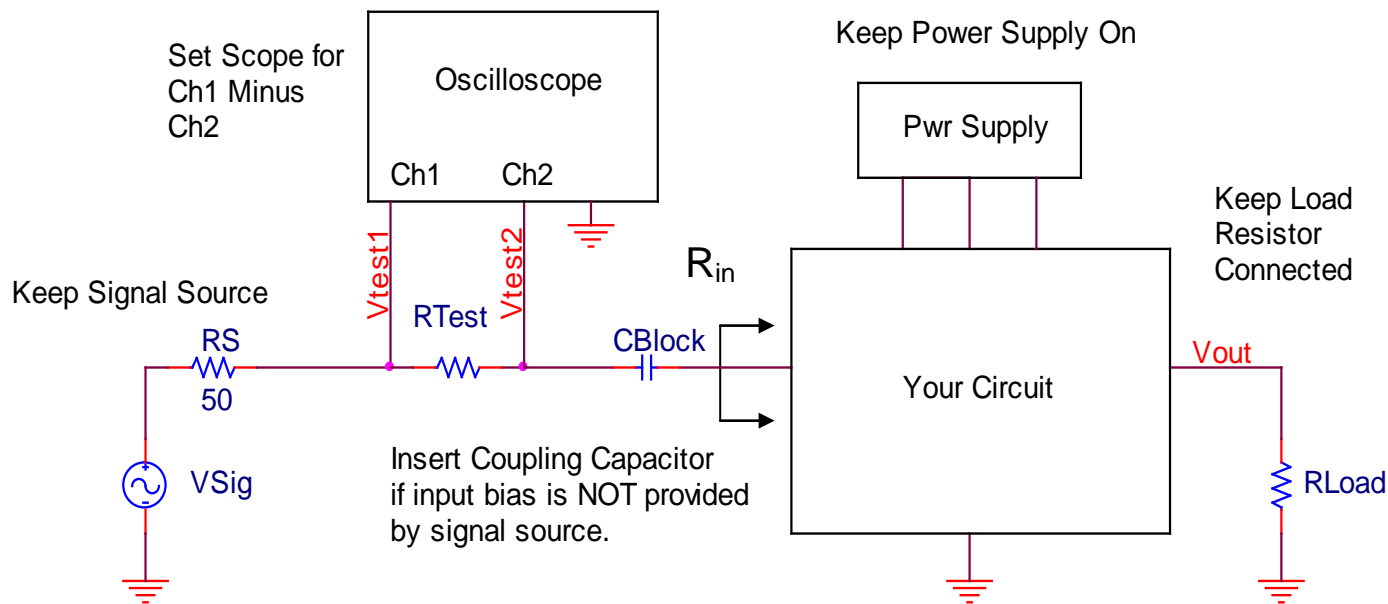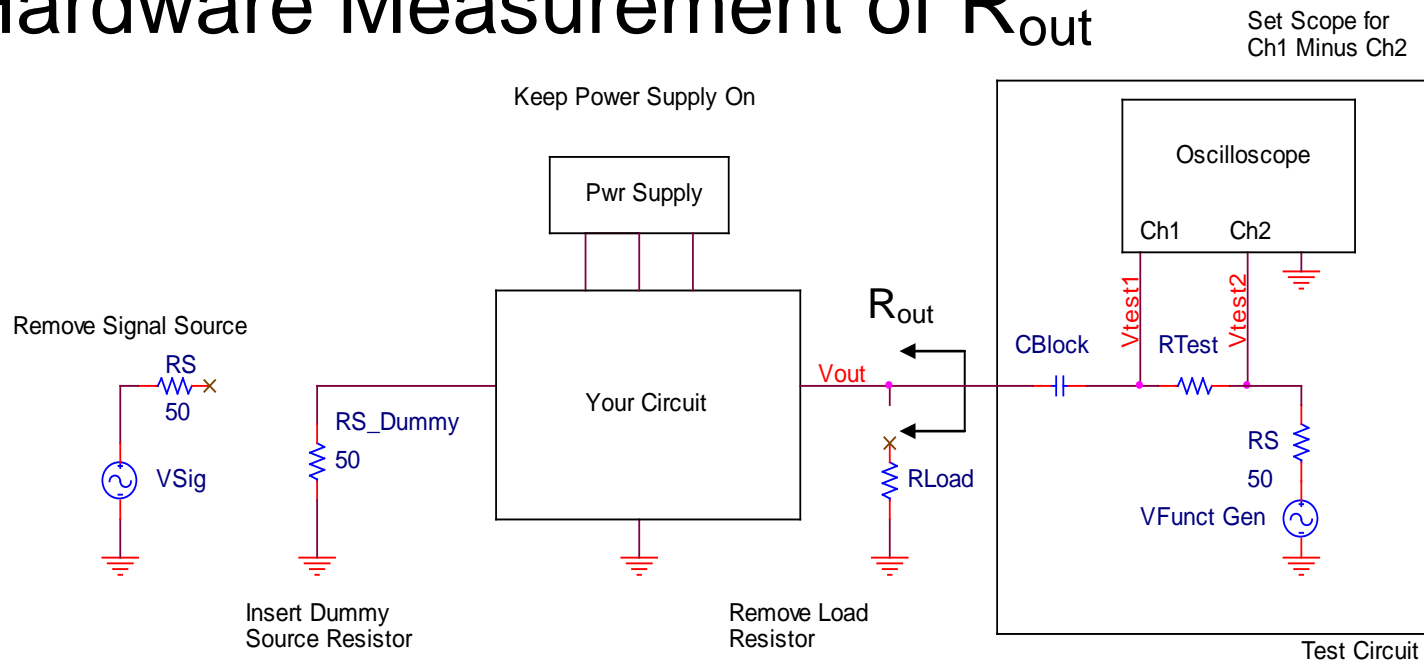
$$i_i = i_{test} = \frac{|v_{test1} - v_{test2}|}{R_{test}}$$

$$R_i = \frac{v_{test2}}{i_{test}}$$

Choose R_{test} and v_{test} so that they are big enough to produce an unambiguous measurement. V_{test2} should be comparable to inputs normally provided to the amplifier. CBlock should little impedance at the test frequency.

Hardware Measurement of R_{out}

$$i_o = i_{test} = \frac{\left| v_{test2} - v_{test1} \right|}{R_{test}}$$

$$R_o = \frac{v_{test1}}{i_{test}}$$

Remember that the v_{ampl} of the function generator should be set so that v_{test1}'s magnitude is comparable to the maximum undistorted output seen under normal operation. R_{test} should be chosen to create an unambiguous i_{test} signal. CBlock should present low impedance at the test frequency.

The EASIER WAY:

1. Estimate what the Rin or Rout value is.
2. Get a POT that is about TWICE the estimated size
3. Put the POT between the input and your circuit
4. Measure the voltage at EACH side of the POT.
5. Adjust the POT till the voltages are the SAME.
6. Measure the value of the POT, this is the resistance you are looking for.

7. Can you say Voltage Divider!!!!!!!!!!!!!!!!!!!!!!!!