Bob Sattin, PE

(910) 612-8666

bob@bobsdevices.com

Calculating Output voltage when using a Low Output Moving Coil Phono Cartridge with a Step-Up Transformer

The actual output voltage from a step-up transformer can be calculated by multiplying the cartridge output voltage by the step-up ratio, then multiplying it by the reflected impedance divided by the sum of the cartridge internal impedance and the reflected impedance.

Reflected impedance = the load of the phono stage (usually 47,000 ohms) divided by the square of the turns ratio of the SUT (or the usually published step up ratio)

For example:

Using a cartridge with a 3 ohm internal impedance and an output of .2mV

Using a 1:40 step up transformer

Into a MM phono stage with a load of 47,000 ohms.

The Reflected impedance is 29 ohms [47000 / (40 x 40)]

The actual output voltage is 7.25mV [.2 x 40 x 29 / (29 +3)]

If you prefer, Email me with your cartridge and phono preamp and I will run the calculations for you and recommend a step up ratio for you to use.

bob@bobsdevices.com