

# OT IMPEDANCE MEASURING

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Posted by [CHARLES F.](#) on March 14, 2002 at 10:53:54:

Hi,  
Does anybody know how to accurately measure output transformer impedance with a VTM?  
thanks

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# Re: OT IMPEDANCE MEASURING

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Posted by mark norwine on March 14, 2002 at 11:40:03:

In Reply to: [OT IMPEDANCE MEASURING](#) posted by CHARLES F. on March 14, 2002 at 10:53:54:

: Hi,  
: Does anybody know how to accurately measure output transformer impedance with a VTM?  
: thanks

- 1.) electrically remove the OT from the circuit
- 2.) apply a \*SMALL\* ac voltage to the secondary & measure it.
- 3.) at the same time measure the voltage from one plate lead to the other [ignoring the CT]
- 4.) divide these voltages to determine the turns ratio
- 5.) square this value & you have the impedance ratio.

good luck!

mn

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In Reply to: [Re: OT IMPEDANCE MEASURING](#) posted by mark norwine on March 14, 2002 at 11:40:03:

: 5.) square this value & you have the impedance ratio.

Sorry,

This impedance ratio is then what is used to reference "output impedance"? Meaning, when someone says the primary impedance of a transformer is 5k ohms, must I consider what secondary impedances are i.e; 2,4,8,16 ohms? And if so, wouldn't I need to divide these primary/secondary figures for a value of "output impedance"?

Thanks much in advance

C.F.

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# Re: IMPEDANCE RATIO = "IMPEDANCE" ???

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In Reply to: [IMPEDANCE RATIO = "IMPEDANCE" ???](#) posted by CHARLES F. on March 20, 2002 at 16:45:34:

transformers don't have "impedance", as if to say "it's an 8 ohm transformer"....

transformers have an impedance *ratio*. for example, a fender blackface bassman's output transformer has an impedance ratio of [aprox] 5000:4. at least that's how fender used it. it could also be looked at as 10,000:8 or 20,000:16 or 2500:2. ....it's a ratio only.

the impedance ratio is equal to the square of the turns ratio, which is why i said "apply a voltage to the secondary & measure the primary". that voltage ratio, when squared, tells you the impedance ratio. the afore mentioned bassman tranny is 5000:4, or 1250:1 which means a turns ratio of 35.4:1. if you apply 3vac to the sec, you'll measure about 106 on the primary.

does that make sense?

[ps...hold me to the concept, not the numbers...a bassman tranny may be a bit different & i'm not at my bench to give you "real" numbers....but i'm close..]

mn

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: good luck!

: mn

Thanks alot. I have seen your name elsewhere, do you have some books out there?  
C.F.

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