

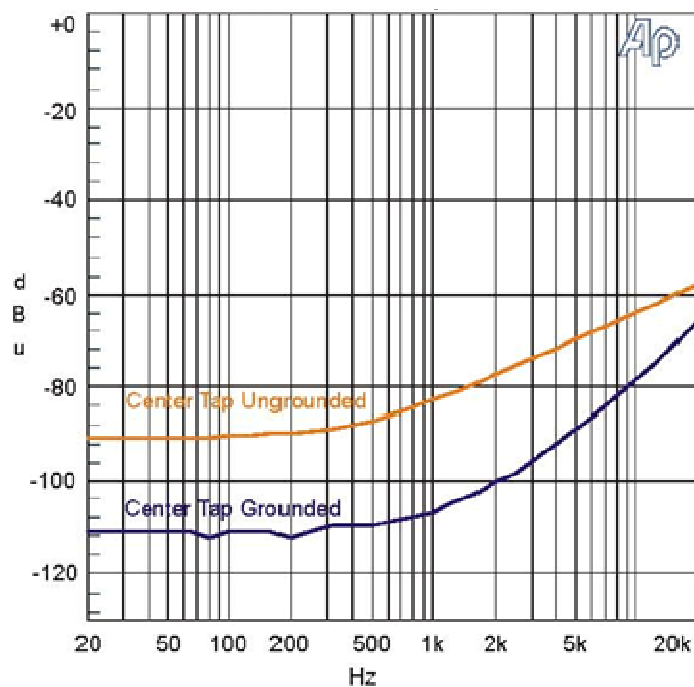
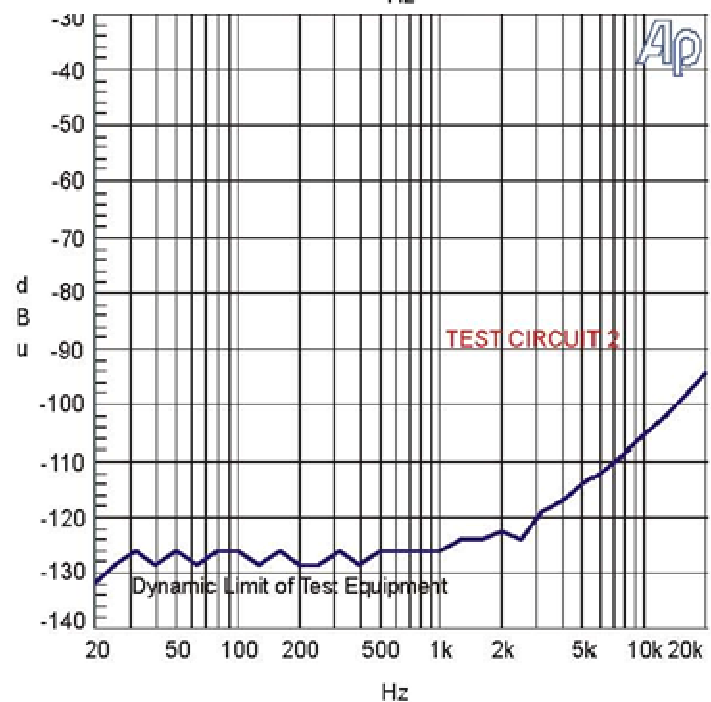
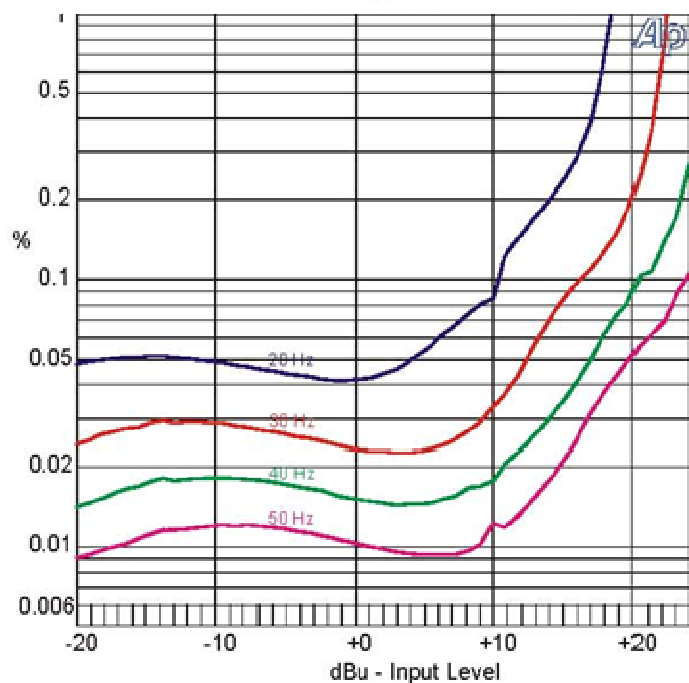
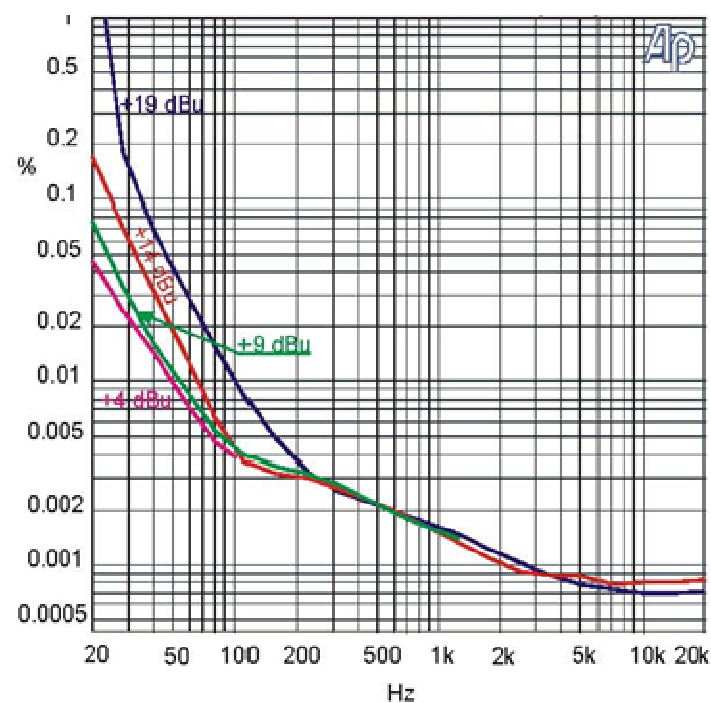
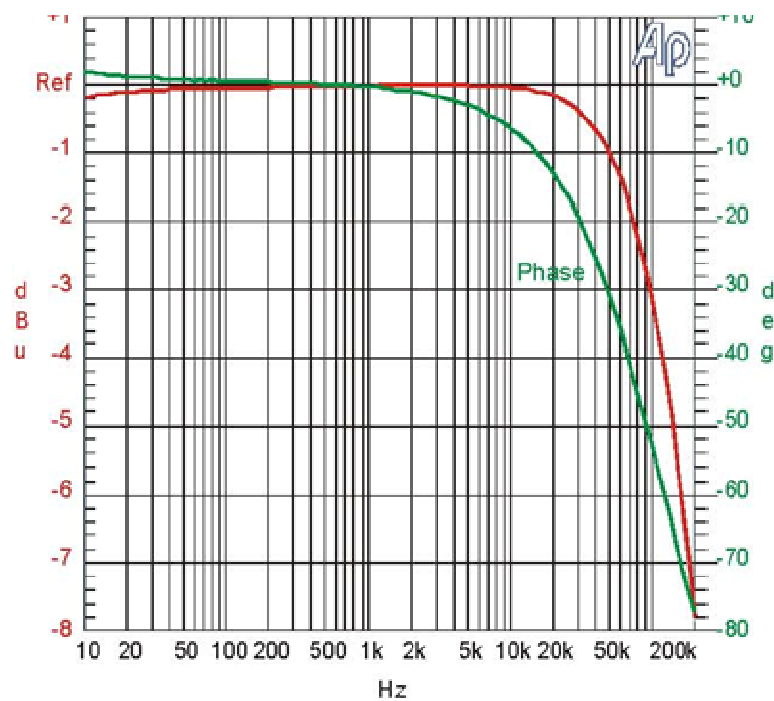
# Audience

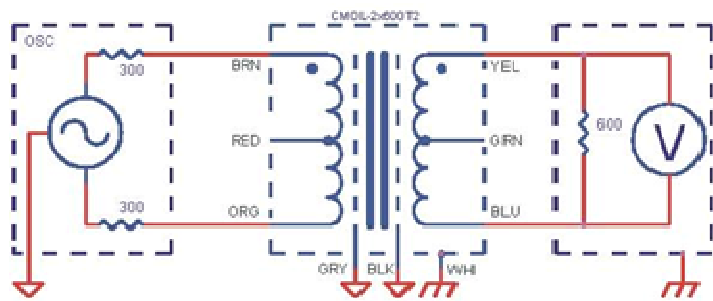
## AIT1 *Ultra-Balanced* LINE TRANSFORMER

- Superior CMRR  $\geq 125$  dB 20 Hz - 1 kHz
- Very high bandwidth –3dB at 95 kHz
- Harmonic distortion 0.04% typical at 20 Hz
- +18.5 dB max input level at 20 Hz @ 1% or less THD+N%
- Phase Shift—13 degrees at 20 Hz

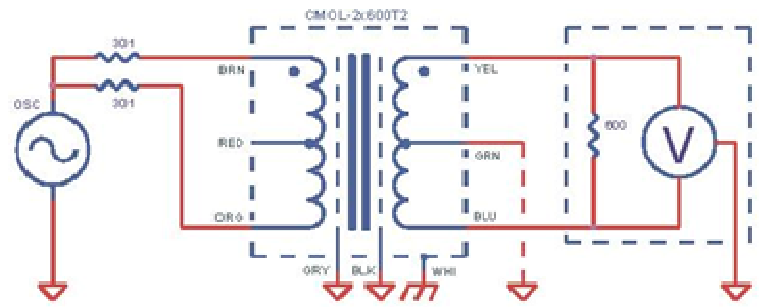
The Audience input transformer is optimized for ideal winding balance. This technique results in superb CMRR throughout the audio band. Even at 20 kHz the CMRR is 94 dB. It is designed to be driven by either a balanced or unbalanced source, and it delivers either a balanced or unbalanced output. It is manufactured with a high nickel (80% Ni) core for best overall distortion characteristics. All of the wires to the internal shield foils are spot welded to assure long term reliability, as is so with all Audience transformers. This wire bonding technique is necessary to retain ideal balance between windings. Soldering the shield leads would result in lumps in the coils as they are built up resulting in uncontrollable variations. Not only does it use hum-bucking windings, it is encased in a Mu metal can which provides 30 dB of magnetic shielding. This transformer is ideal for solving the meanest hum and buzz pickup problems. Audience input transformers are made with Audience proprietary Ohno (mono crystal) hookup wire for their leads and custom Ohno wire for the windings, resulting in the highest possible resolution.

Parameter	Conditions	Typ
Turns Ratio		1 : 1.00
Input Impedance, Zi	20 Hz to 20 kHz, 0 dBu Test Circuit 4	558 $\Omega$
Insertion Loss	1 kHz, dBm Rs=600 RI=600 Test Circuit 1	0.285 dBm
Voltage Gain	1 kHz Rs=600 RI=600 1 kHz Rs=600 RI=1.0K 1 kHz Rs=600 RI=1.5K 1 kHz Rs=600 RI=9K 1 kHz Rs=600 RI=100K Test Circuit 1	-1.750 dBu -1.096 dBu -0.750 dBu -0.114 dBu $\leq 0.001$ dBu
Distortion (THD+N%)	1 kHz, +4 dBu, Rs=600 RI=600 Test Circuit 1	0.0004%
Max 20 Hz input level	1.0% THD+N% Test Circuit 1	+18.5 dB
Response, ref 1 kHz	20 Hz Rs=600 RI=600 20 kHz -3 dB Test Circuit 1	-0.2 dB -0.2 dB 95 kHz
Phase Shift at 20Hz Phase Shift at 20 kHz	Referenced to source generator Test Circuit 1	+1° -13°
CMRR	60 Hz 1 kHz 20 kHz Note: Results independent of whether center tap grounded or not. Test Circuit 2	$\geq 128$ dB $\geq 125$ dB 94 dB
Output CMRR	60 Hz 1 kHz Center tap grounded Test Circuit 3	114 dB 108 dB
Operating Temp Range	Operation and storage	0° C Min 70° C Max

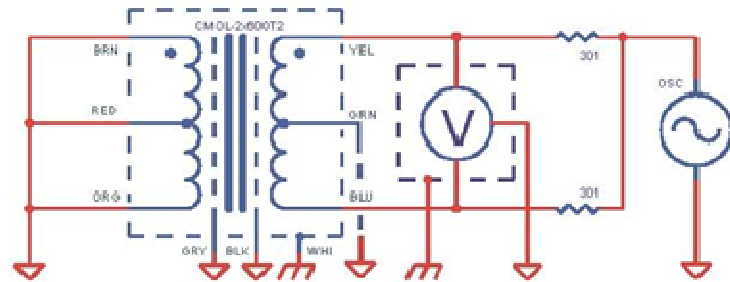




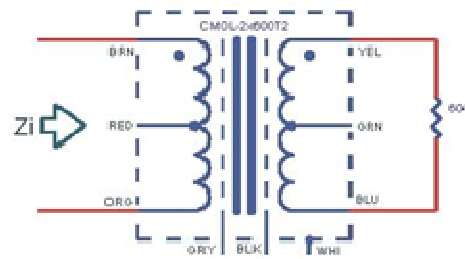
TEST CIRCUIT 1



TEST CIRCUIT 2



TEST CIRCUIT 3



TEST CIRCUIT 4

#### NOTES:

1. All graphs generated from one (1) randomly chosen device. No statistical averaging or weighting. Data from one sweep.
2. Rs=600 unless otherwise noted.

