Subject: How Test Gear Can Mess With Your Mind
Posted by gofar99 on Wed, 03 Oct 2012 22:43:03 GMT
View Forum Message <> Reply to Message

Hi Everyone, Since this is about audio... I put it here, but Tower might be just as good. I have lots of test equipment and use it all the time to perfect my designs. A project I am working on right now (valve headphone amplifier) was finally assembled last week. I found that I could not use my HP distortion analyzer on it as the output was too low to get accurate distortion measurements. The roughly 100mw across 75 ohms did not generate enough voltage for it to work as designed (0.040 volts vs the typical 0.1 or higher up to 300 volts it was designed for) So I figured I would use my DSO and get the readings off the scope directly. Fine. Response great 20HZ to past 40K. S/N residual was at -95dbv (as low as I can get with my horrible AC and ambient noise) When I started to crank up the output I began to see some dreaded harmonics grow on the screen. At 100mw they were buried in the noise at about -95dbv. I got rather disturbed about them and tried lots of things to get them lower. (translate = much solder, bad words, hair pulling and more bad words) Then the light bulb came on. Actually take the readings from the scope and see what they were and not fret instantly. Surprise, the harmonics were at -40db from the signal up to about 250mw. -40dbv is equal to 1%. I can live with that. It goes to show that test gear is only as good as the interpretation of the results.