

RF.AMX10 - Distortion Measurements

I don't have a transducer that has a low enough THD in its own right to allow for really accurate THD figures to be measured.

I have taken the best one I have - a Sony 7506 headphone earpiece transducer - and done some comparison tests against several other microphones.

It's simple enough to create a low distortion source tone – I used a Neutrik MR1 minirator, in conjunction with a Hypex UCD power amp. The output of that is fed to the line inputs of my Sound Devices USBPre, and the output of that is opened up in a software spectrum analyser.

That gives a THD reading of c. 0.002% for the source.

Connecting the output of the power amp to my Sony phones instead - and connecting several test mics in turn to the Sound Devices mic preamp - shows that introducing the transducer - and a test mic - will derate the THD distortion by a factor of around 10.

How much of that is down to the mic, and how much to the Sony transducer, I have no way of measuring?....

Nevertheless, taking *comparison* THD readings with several mics show that the RF.AMX10 actually seems to perform quite well....

Using a 1KHz sine source of around -12dB, I placed each mic in turn close to the headphone transducer, and set the SD preamp in each case to read -12dB on the meter.

Using that set up, I obtained the following THD readings...

- **RF.AMX10 mic fitted with K67 type capsule - 0.016%**
- K67 type capsule with 'standard' Schoeps type JFET impedance converter - 0.018%
- Rode NT1 (new 2014 model) - 0.015%
- Shure SM58 - 0.028%
- AKG D202-E1 – 0.025%

So there's not a lot in it - at least with this set up.

Neither AKG nor Shure publish THD figures in their specs, and Rode only quote the THD (around 1%) for max output, so the manufacturers data doesn't help much here.