



Figure 7 Averaged Rnonlin value for each drive.

4.3. Listening experiment.

Only the results confirmed by a 70% or more of the hearing (18/25) are remarked here:

Drive without attached horn:

- The drive A is perceived like better when the input level increases, but people refers to this fact as more clarity or definition.
- The drive B is perceived worse with an input signal of 25 V or above.
- The perception of drive C hardly changes in the dynamic range.

Drive with attached horn:

- When installing a horn the drive A, it is better qualified when the input voltage is around 20 V.
- Drives B and C improve the rating when increasing the input level with an attached horn.

In general terms, with the attached horn recordings, a 80% of the subjects consider that perceived distortion is smaller for the device B, A and C (in this order).

When installing the horn, perceived distortion is still smaller for drive B but there is not a clear difference between drives A and C.

5. CONCLUSIONS

These preliminary results can cause a deceptive optimism since there have only have been presented and

commented a few results that seem to indicate that there is correlation between the distortion perceived by the hearing and the parameter based on a perceptual model. Nevertheless, there are several aspects of this work that must be improved:

The first one is a constant in the scope of the psychoacoustic experiments: the election of the reference signal with which we must compare. In this case, for the calculation of RNonLin the signal that has been used is that which presented less harmonic distortion. Further work should focus on check the detected tendencies when another reference or pattern signal is considered.

The psychoacoustic experiment must be repeated in order to get really trustworthy results. Indeed, the concept of 'Perceived Distortion' is not habitual for most of the hearing. Once analyzed the found difficulties, probably it is necessary to have recourse to a more well-known and suggestive vocabulary for most of the people.

However, the results are satisfactory. The great amount of data the study has contributed, together with other that has the company, lead the way to the proposal of several parameters dependant functions to evaluate the improvement degree that one will obtain when making small changes in a drive model or when installing a certain horn.

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7. REFERENCES

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