

# **1. Results – Unimpaired Test Samples**

## **3.1 Preliminary analyses**

Preliminary analyses of variance (ANOVAs) were conducted to uncover any differences in participants' responses, based on their age and gender. There was no main effect of gender, indicating that females and males responded similarly to all transmissions (female MOS was 3.36; male MOS was 3.37), and no main effect of age, indicating that all age groups responded similarly (MOS varied from 3.31 in the youngest group to 3.42 in the oldest group).

## **3.2 Test results**

The 5-point scale (Excellent through Bad) was translated into the following numerical values for analysis:

<b>Rating</b>	<b>Numerical Value</b>
Excellent	5.0
Good	4.0
Fair	3.0
Poor	2.0
Bad	1.0

Figure 3.2 shows MOS scores aggregated by genre. *Commercial* includes Ibert, Carmen, Handel's Messiah, and Saito. *Critical* includes Ballet Woman, Camera, From Richmond, and Riverdance. *Rock* includes Eric Clapton, Crosby, Stills, Nash and Young, Earth Wind and Fire, REO, Randy Travis and Suzanne Vega. *Speech* includes 2 female and 2 male samples (Female A1, FemaleC10, Male A1 and Male B4). In the classical genre, FM, 36 and 20 were rated equivalently and significantly better than all AM analog transmissions. In all other genres HDC20 and HDC36 was rated significantly lower than FM analog, but significantly higher than AM analog transmissions. Interestingly, in the Commercial and Speech genres, HDC20 and HDC36 were rated equivalently. However, in Rock and Classical, HDC36 was rated significantly higher than HDC20. See Appendix 1 for individual ANOVA results and Newman Keuls post-hoc comparisons. See Appendix 2 for ratings of individual samples and error terms.

**Figure 3.2 – MOS by Genre**

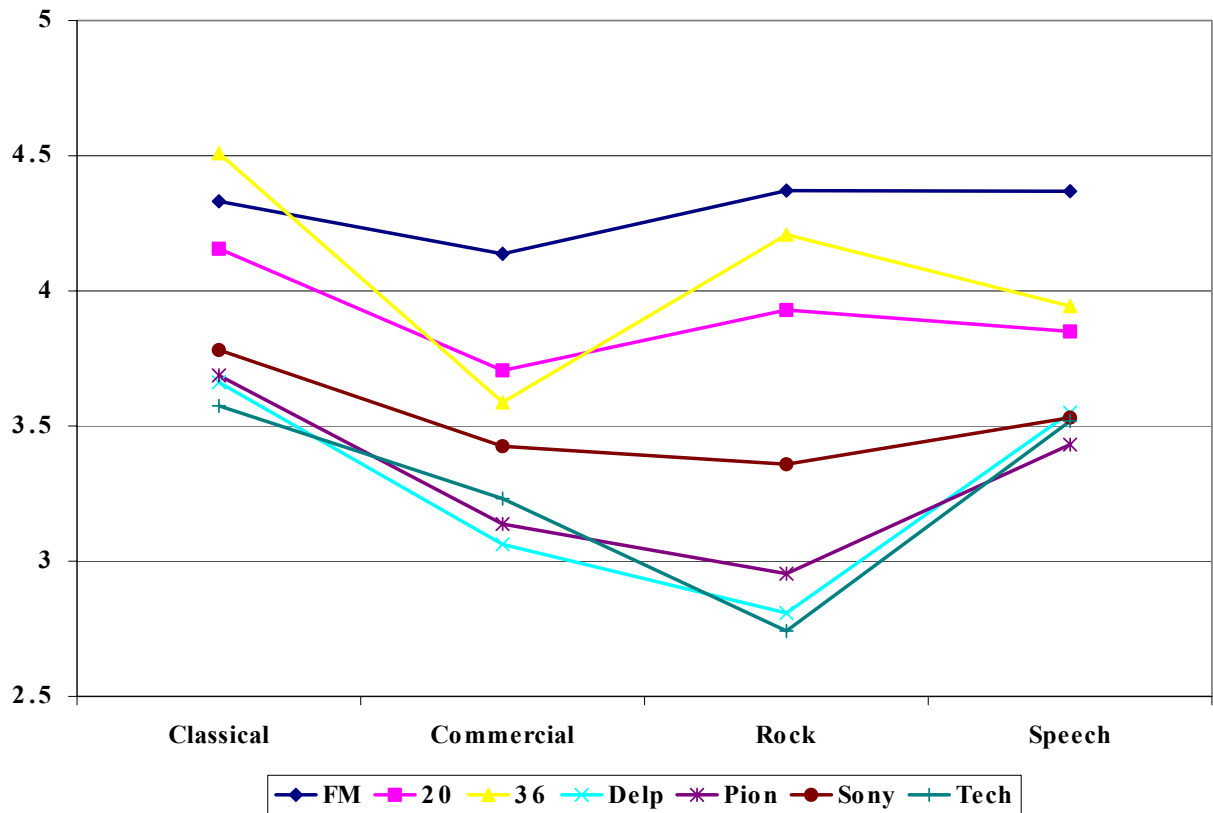


Table 3.2 lists all rating scores including AM low anchor samples. Results show that participants used the 5-point scale broadly, scoring low anchor AM samples consistently in the “bad” (1.0-1.5) range, FM source material in the “good to excellent” (4.0 – 4.5) range, and the majority of other transmissions between these points.

Receiver	Classical	Commercial	Rock	Speech
FM	4.3	4.1	4.4	4.4
HDC36	4.5	3.6	4.2	3.9
HDC20	4.2	3.7	3.9	3.9
Delphi	3.7	3.1	2.8	3.6
Pioneer	3.7	3.1	3.0	3.4
Sony	3.8	3.4	3.4	3.5
Technics	3.6	3.2	2.7	3.5
AM Low Anchor	1.6	1.2	1.3	1.4

**Table 3.2: Unimpaired MOS ratings by genre**

## 2. Results – Impaired Test Samples

Figure 4.1 shows results from impaired test conditions in Enhanced mode. Participants rated HDC36 superior to AM analog transmissions in the classical, rock and speech categories. In the commercial genre, HDC36 and Sony were rated the same, and significantly better than the Pioneer, Technics and Dephi. Additionally, in Classical and Rock, FM analog and HDC36 were rated the same, while HDC36 was rated lower than FM analog in Commercial and Speech. See Appendix 3 for individual samples and error terms.

**Figure 4.1: Mean opinion scores (Enhanced Mode)**

