

### How we test the quality:

General: There is only one real quality range available. This is PSNR (Peak signal-to-noise ratio), which is the non official standard to define the quality of an Mpeg2 Movie.

### On the fly:

While developing and testing the software, we work with a hardware quality measurement system. This microcontroller driven system allows real time analysis. However, the problem with this system is that the quality result is not on PSNR. So for the final tests we need to use a public known test Environment with an established official Quality.

### Environment:

We use the well known avisynth and virtual dub to get the quality.

1. First we need to copy the movie with DVDneXtCOPY and DVDSHrink.
2. Then we merge the VOB files to one big VOB File.
3. Then all frames will be indexed, so an mpeg2 decoder will decode all frames (and does not drop frames).
4. Then we trim the movie so no rubbish is at the end or at the beginning of the movie.
5. Then we run a Video Analysis Pass in Virtual Dub with the original and the copy.

### Results:

| Movie #1- DVDneXt COPY                   |         |         |          | Movie #1-DVDSHrink       |         |         |          |
|--|---------|---------|----------|--------------------------|---------|---------|----------|
|  | Minimum | Average | Maximum  |                          | Minimum | Average | Maximum  |
| Mean Absolute Deviation:                 | 0.0000  | 0.5124  | 1.0297   | Mean Absolute Deviation: | 0.0000  | 0.4864  | 2.304    |
| Mean Deviation:                          | -0.1199 | +0.0180 | +0.2466  | Mean Deviation:          | -0.1187 | +0.0106 | +0.1430  |
| PSNR:                                    | 42.2329 | 48.2072 | 107.3187 | PSNR:                    | 35.1349 | 48.5391 | 107.3187 |
| Overall PSNR:                            | 47.6376 |         |          | Overall PSNR:            | 47.4292 |         |          |
| Movie #2-DVDneXtCopy                     |         |         |          | Movie #2-DVDSHrink       |         |         |          |
|  | Minimum | Average | Maximum  |                          | Minimum | Average | Maximum  |
| Mean Absolute Deviation:                 | 0.0000  | 0.5632  | 0.9844   | Mean Absolute Deviation: | 0.0000  | 0.5341  | 2.2226   |
| Mean Deviation:                          | -0.1685 | +0.0572 | +0.2890  | Mean Deviation:          | -0.1508 | +0.0401 | +0.3318  |
| PSNR:                                    | 44.2883 | 48.7991 | 106.5268 | PSNR:                    | 36.4087 | 48.7987 | 106.5268 |
| Overall PSNR:                            | 48.2848 |         |          | Overall PSNR:            | 48.1798 |         |          |
| Movie #2 Competitors                     |         |         |          |                          |         |         |          |
| AnyDVD 6.3.0.0 + CloneDVD 2.9.1.2        |         |         |          |                          |         |         |          |
|  | Minimum | Average | Maximum  |                          |         |         |          |
| PSNR:                                    | 34.20dB | 47.01   | 106.53   |                          |         |         |          |
| Overall PSNR:                            | 46.02   |         |          |                          |         |         |          |
| AnyDVD 6.3.0.0 + DVD2One 2.1.2           |         |         |          |                          |         |         |          |
|  | Minimum | Average | Maximum  |                          |         |         |          |
| PSNR:                                    | 32.13   | 46.61   | 106.53   |                          |         |         |          |
| Overall PSNR:                            | 45.14   |         |          |                          |         |         |          |
| AnyDVD 6.3.0.0 + DVDFab Platinum 4.0.1.2 |         |         |          |                          |         |         |          |
|  | Minimum | Average | Maximum  |                          |         |         |          |
| PSNR:                                    | 34.83   | 47.17   | 106.53   |                          |         |         |          |
| Overall PSNR:                            | 46.23   |         |          |                          |         |         |          |