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| *Title:* | **SCCE3: Cross-Check of Test A.6 - Palette table generation (JCTVC-R0167)** | | |
| *Status:* | Input Document to JCT-VC | | |
| *Purpose:* | Information | | |
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| *Source:* | Huawei R&D USA. | | |

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# Abstract

This report gives the cross-check evaluation of SCCE Test A.6 proposed in JCTVC-R0167 [1]. It provides a R-D optimization to select major colors by considering both bit rate and distortion on color grouping. It includes two major step where first step is applying the nearest neighbor grouping and the second step is choosing the representative colors for grouped cluster according to the R-D sense.

# Simulation results

The compression performance is measured using BD rate compared with SCCE3 anchors, using the SCCE3 test conditions. Table 1 gives the detailed average BD rate reduction for lossy coding with proposed palette palette table generation method compared with SCCE3 +Q0094 full frame IntraBC anchors, respectively. Other simulations are enclosed as additional spreadsheets. Cross-check results match the data from proponent.

Table 1. Average BD rate reduction for lossy coding compared with SCCE3 + Q0094 full frame IntraBC anchors

|  |  |  |  |
| --- | --- | --- | --- |
|  | **All Intra** | | |
|  | G/Y | B/U | R/V |
| RGB, text & graphics with motion, 1080p | -2.7% | -2.5% | -2.4% |
| RGB, text & graphics with motion,720p | -2.5% | -2.1% | -1.9% |
| RGB, mixed content, 1440p | -1.6% | -1.2% | -1.3% |
| RGB, mixed content, 1080p | -1.5% | -1.6% | -1.6% |
| RGB, Animation, 720p | 0.0% | -0.2% | -0.2% |
| RGB, camera captured, 1080p | 0.0% | 0.0% | 0.0% |
| YUV, text & graphics with motion, 1080p | -2.7% | -3.8% | -3.4% |
| YUV, text & graphics with motion,720p | -1.5% | -2.8% | -3.4% |
| YUV, mixed content, 1440p | -1.1% | -3.0% | -3.1% |
| YUV, mixed content, 1080p | -1.5% | -4.0% | -4.0% |
| YUV, Animation, 720p | 0.0% | -0.3% | -0.4% |
| YUV, camera captured, 1080p | 0.0% | 0.0% | 0.0% |
| Enc Time[%] | 101% | | |
| Dec Time[%] | 99% | | |
|  |  |  |  |
|  | **Random Access** | | |
|  | G/Y | B/U | R/V |
| RGB, text & graphics with motion, 1080p | -1.6% | -1.6% | -1.5% |
| RGB, text & graphics with motion,720p | -2.7% | -2.1% | -2.2% |
| RGB, mixed content, 1440p | -2.1% | -1.6% | -1.7% |
| RGB, mixed content, 1080p | -1.8% | -1.7% | -1.6% |
| RGB, Animation, 720p | 0.0% | -0.4% | -0.2% |
| RGB, camera captured, 1080p | 0.2% | 0.2% | 0.2% |
| YUV, text & graphics with motion, 1080p | -1.5% | -2.7% | -2.4% |
| YUV, text & graphics with motion,720p | -1.4% | -2.8% | -4.2% |
| YUV, mixed content, 1440p | -1.1% | -3.9% | -4.2% |
| YUV, mixed content, 1080p | -1.4% | -4.7% | -4.4% |
| YUV, Animation, 720p | 0.1% | -0.5% | -0.6% |
| YUV, camera captured, 1080p | 0.0% | 0.0% | 0.0% |
| Enc Time[%] | 100% | | |
| Dec Time[%] | 101% | | |
|  |  |  |  |
|  | **Low delay B** | | |
|  | G/Y | B/U | R/V |
| RGB, text & graphics with motion, 1080p | -1.3% | -1.3% | -1.3% |
| RGB, text & graphics with motion,720p | -1.9% | -1.5% | -1.6% |
| RGB, mixed content, 1440p | -2.2% | -1.7% | -1.8% |
| RGB, mixed content, 1080p | -1.2% | -1.6% | -1.3% |
| RGB, Animation, 720p | -0.1% | -0.1% | 0.0% |
| RGB, camera captured, 1080p | 0.0% | 0.0% | 0.1% |
| YUV, text & graphics with motion, 1080p | -1.0% | -1.8% | -1.7% |
| YUV, text & graphics with motion,720p | -0.7% | -1.4% | -2.1% |
| YUV, mixed content, 1440p | -1.3% | -2.9% | -3.5% |
| YUV, mixed content, 1080p | -1.2% | -4.4% | -4.4% |
| YUV, Animation, 720p | -0.1% | -0.4% | 0.0% |
| YUV, camera captured, 1080p | 0.0% | 0.0% | 0.0% |
| Enc Time[%] | 101% | | |
| Dec Time[%] | 100% | | |

# References

1. Y. He, X. Xiu, Y. Ye, C.-M. Tsai, “SCCE3: Test A.6 - Palette table generation”, JCTVC-R0167, Sapporo Japan, July 2014.