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Qualcomm

Non-EE2: Sample-based BD OF for Chroma

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Introduction

- Target: adaptation of sample-based BDOF (S-BDOF) to chroma
- Problem: S-BDOF applied only to luma MC in ECM
- Inconsistency:
 - Subblock-based motion refinement (at 3rd stage of multi-pass DMVR) is applied to both luma and chroma MC
 - Sample-based motion refinement is applied to luma MC only (i.e., missing for chroma)
- Extend S-BDOF to chroma with chroma motion refinement inferred from co-located luma component
 - Compute chroma gradient
 - Infer co-located per-sample luma motion refinement
 - Update chroma prediction sample
- Remove design inconsistencies and re-use existing logics of S-BDOF plus per-sample luma motion refinement to support S-BDOF for chroma

Experimental results

	Random Access Main 10				
	Y	U	V	EncT	DecT
Class A1					
Class A2					
Class B	0.01%	-0.13%	-0.03%	100.3%	100.2%
Class C	-0.01%	-0.15%	-0.13%	99.6%	99.3%
Overall					
Class D	0.00%	-0.45%	-0.35%	100.3%	99.9%
Class F	-0.02%	-0.11%	-0.09%	100.3%	100.0%
Class TGM					

We would like to thank Foxconn for crosscheck



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