

# JCTVC-10085: On chroma Intra prediction mode coding

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# Modified binarization for intra chroma prediction modes when LM enabled

In HM6

Mode Idx	LM enabled	LM disabled
DM	0	0
LM	10	x
mode 0	1100	100
mode 1	1101	101
mode 2	1110	110
mode 3	1111	111

In proposal

Mode Idx	LM enabled	LM disabled
DM	00	0
LM	01	x
mode 0	100	100
mode 1	101	101
mode 2	110	110
mode 3	111	111

The proposal:

1. Similar to luma intra mode coding, DM/LM are treated as MPMs, the other remaining 4 modes are bypass coded with fixed-length of 2 bins.
2. The first two bins related to DM/LM are context coded.

# Simulation results comparing to HM6.0

	All Intra Main with LM enabled			All Intra HE10		
	Y	U	V	Y	U	V
Class A	0.0%	-0.4%	-0.3%	0.0%	-0.4%	-0.4%
Class B	0.0%	-0.2%	-0.2%	0.0%	-0.2%	-0.2%
Class C	0.0%	-0.1%	-0.1%	0.0%	-0.1%	0.0%
Class D	0.0%	-0.1%	-0.1%	0.0%	-0.1%	0.0%
Class E	0.0%	-0.2%	-0.3%	0.0%	-0.2%	-0.2%
<b>Overall</b>	<b>0.0%</b>	<b>-0.2%</b>	<b>-0.2%</b>	<b>0.0%</b>	<b>-0.2%</b>	<b>-0.2%</b>
	0.0%	-0.2%	-0.2%	0.0%	-0.2%	-0.2%
Class F	0.0%	-0.1%	0.0%	0.0%	-0.1%	0.1%
Enc Time[%]	100%			100%		
Dec Time[%]	100%			100%		

Cross-checked by LGE in JCTVC-I0179

# Recommendation

- The proposed method
  - unifies the parsing procedure for luma and chroma mode coding
  - coding efficiency of 0.0%, -0.2% and -0.2% for both AI-HE10 and AI-main with LM enabled
- It is recommended to adopt the proposal

# Thank you

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