

CLAIMS

What is claimed is:

1. A method for video processing, comprising:
determining, for a conversion between a current video block of a video that is a chroma
5 block and a coded representation of the video, parameters of cross-component linear model
(CCLM) prediction mode based on chroma samples that are selected based on W available
above-neighboring samples, W being an integer; and
performing the conversion based on the determining.
- 10 2. The method of claim 1, wherein the CCLM prediction mode uses a linear mode to derive
prediction values of a chroma component from another component.
3. The method of claim 1, wherein W is set to i) a width of the current video block, ii) L
times the width of the current video block, L being an integer, iii) a sum of a height of the current
15 video block and a width of the current video block, or iv) a sum of the width of the current video
block and the number of available top-right neighboring samples.
4. The method of claim 1, wherein W depends on an availability of at least one of an above-
neighboring block or a left-neighboring block of the current video block.
- 20 5. The method of claim 1, wherein W depends on a coding mode of the current video block.
6. The method of claim 3, wherein L has a value depending on an availability of a top-right
block or a top left sample that is located adjacent to the current video block.
- 25 7. The method of claim 1, wherein the chroma samples are selected based on a first position
offset value (F) and a step value (S) that depend on W.

8. The method of claim 7, wherein a top left sample has a coordinate (x_0, y_0) and the selected chroma samples have coordinates $(x_0 + F + K \times S, y_0 - 1)$, K being an integer between 0 and k_{Max} .
- 5 9. The method of claim 7, wherein $F = W/P$ or $F = W/P + \text{offset}$, P being an integer.
10. The method of claim 9, wherein $F = W \gg (2 + \text{numIs4T})$, wherein numIs4T is equal to 1 in a case that there are four neighboring samples selected within an above neighboring row and otherwise numIs4T is equal to 0, wherein symbol $\gg$ is defined as an arithmetic right shift
10 symbol.
11. The method of claim 7, wherein $S = W/Q$, Q being an integer.
12. The method of claim 7, wherein S is not less than 1.
- 15 13. The method of claim 11 or 12, wherein $S = \text{Max}(1, W \gg (1 + \text{numIs4T}))$, wherein numIs4T is equal to 1 in a case that there are four neighboring samples selected within an above neighboring row and otherwise numIs4T is equal to 0, wherein symbol $\gg$ is defined as an arithmetic right shift symbol.
- 20 14. The method of claim 10 or 13, wherein numIs4T is equal to 1 in a case that above neighboring samples are available, left neighboring samples are available, and the current video block is coded with a normal CCLM that is different from a first CCLM using only left-neighboring samples, and different from a second CCLM using only above-neighboring samples.
- 25 15. The method of claim 7, wherein $F = S/R$, R being an integer.
16. The method of claim 7, wherein $S = F/Z$, Z being an integer.
- 30 17. The method of any of claims 8-16, wherein at least one of k_{max} , F , S , or offset depends on a prediction mode of the current video block that is one of a first CCLM using only left-

neighboring samples, a second CCLM using only above-neighboring samples, a normal CCLM using both left-neighboring and above-neighboring samples, or other modes that are different from the first CCLM, the second CCLM, and the normal CCLM.

5 18. The method of any of claims 8-16, wherein at least one of Kmax, F, S, or offset depends on a width and/or a height of the current video block.

19. The method of any of claims 8-16, wherein at least one of Kmax, F, S, or offset depends on availabilities of neighboring samples.

10

20. The method of any of claims 8-16, wherein at least one of Kmax, F, S, or offset depends on W.

21. A method for video processing, comprising:

15 determining, for a conversion between a current video block of a video that is a chroma block and a coded representation of the video, parameters of cross-component linear model (CCLM) prediction mode based on chroma samples that are selected based on H available left-neighboring samples of the current video block; and
performing the conversion based on the determining.

20

22. The method of claim 21, wherein the CCLM prediction mode uses a linear mode to derive prediction values of a chroma component from another component.

23. The method of claim 21, wherein H is set to one of i) a height of the current video block,

25 ii) L times the height of the current video block, L being an integer, iii) a sum of a height of the current video block and a width of the current video block, or iv) a sum of the height of the current video block and the number of available left-bottom neighboring samples.

24. The method of claim 21, wherein H depends on an availability of at least one of an
30 above-neighboring block or a left-neighboring block of the current video block.

25. The method of claim 21, wherein H depends on a coding mode of the current video block.
26. The method of claim 23, wherein L has a value depending on an availability of a below-left block or a below-left sample that is located adjacent to the current video block.
27. The method of claim 21, wherein the chroma samples are selected based on a first position offset value (F) and a step value (S) that depend on H.
28. The method of claim 27, wherein a top-left sample has a coordinate (x0, y0) and the selected chroma samples have coordinates (x0-1, y0+F+K×S), K being an integer between 0 and kMax.
29. The method of claim 27, wherein $F = H/P$ or $F = H/P + \text{offset}$, P being an integer.
30. The method of claim 29, wherein $F = H \gg (2 + \text{numIs4L})$, wherein numIs4L is equal to 1 in a case that there is four neighboring samples selected within the left neighboring column; otherwise it is equal to 0.
31. The method of claim 27, wherein $S = H/Q$, Q being an integer.
32. The method of claim 27, wherein S is not less than 1.
33. The method of claim 31 or 32, wherein $S = \text{Max}(1, H \gg (1 + \text{numIs4L}))$, wherein numIs4L is equal to 1 in a case that there are four neighboring samples selected within a left neighboring column and otherwise numIs4L is equal to 0.
34. The method of claim 30 or 33, wherein numIs4L is equal to 1 in a case that above neighboring samples are available, left neighboring samples are available, and the current video block is coded with a normal CCLM that is different from a first CCLM using only left-neighboring samples, and different from a second CCLM using only above-neighboring samples.

35. The method of claim 27, wherein $F = S/R$, R being an integer.
36. The method of claim 27, wherein $S = F/Z$, Z being an integer.
- 5 37. The method of any of claims 28-36, wherein at least one of K_{max} , F , S , or offset depends on a prediction mode of the current video block that is one of a first CCLM using only left-neighboring samples, a second CCLM using only above-neighboring samples, a normal CCLM using both left-neighboring and above-neighboring samples, or other modes that are different
- 10 from the first CCLM, the second CCLM, and the normal CCLM.
38. The method of any of claims 28-36, wherein at least one of K_{max} , F , S , or offset depends on a width and/or a height of the current video block.
- 15 39. The method of any of claims 28-36, wherein at least one of K_{max} , F , S , or offset depends on H .
40. The method of any of claims 28-36, wherein at least one of K_{max} , F , S , or offset depends on availabilities of neighboring samples.
- 20 41. The method of claim 21, wherein H is set to a sum of the height of the current video block and a width of the current video block in a case that an above-right neighboring block of the current video block is available.
- 25 42. The method of claim 21, wherein in a case that left neighboring samples are unavailable, the selected chroma samples have the height H regardless of whether the current video block has a first CCLM using only above-neighboring samples or not.

43. The method of claim 1, wherein W is set to a sum of the height of the current video block and a width of the current video block in a case that a below-left neighboring block of the current video block is available.
- 5 44. The method of claim 1, wherein in a case that above neighboring samples are unavailable, the selected chroma samples have the number of W regardless of whether the current video block has a first CCLM using only left-neighboring samples or not.
45. The method of any of claims 1-44, wherein the performing of the conversion includes
10 generating the coded representation from the current block.
46. The method of any of claims 1-44, wherein the performing of the conversion includes generating the current block from the coded representation.
- 15 47. An apparatus in a video system comprising a processor and a non-transitory memory with instructions thereon, wherein the instructions upon execution by the processor, cause the processor to implement the method recited in one or more of claims 1 to 46.
48. A computer program product stored on a non-transitory computer readable media, the
20 computer program product including program code for carrying out the method recited in one or more of claims 1 to 46.