CLAIMS

1. A method of processing video data, comprising:

determining, for a conversion between a current video block of a video that is a chroma block and a bitstream of the video, parameters of a cross-component linear model (CCLM) based on a maxY, a maxC, a minY, and a minC, wherein the maxY, the maxC, the minY, and the minC are derived from two or four indices, wherein an index is mapped with a chroma sample and a corresponding luma sample; and

performing the conversion based on the determining.

2. The method of claim 1, wherein the corresponding luma sample are obtained by down-sampling in a case that the color format of the current video block is 4:2:0 or 4:2:2, and the corresponding luma sample are obtained without down-sampling in a case that the color format of the current video block is 4:4:4.

3. The method of any one of claims 1-2, wherein in response to chroma samples and two corresponding luma samples mapped with two original indices being used to derive the maxY, the maxC, the minY and the minC, applying a padding operation to generate two padded chroma samples and two padded luma samples.

4. The method of claim 3, wherein the two original indices are denoted as S0 and S1, and two mapped indices with which the padded chroma samples and the two padded luma samples are mapped are denoted as S2 and S3, and wherein the padding operation is done as follows orderly:

1) The chroma sample and the corresponding luma sample mapped with S0 is copied to the chroma sample and the corresponding luma sample mapped with S3, respectively;
2) The chroma sample and the corresponding luma sample mapped with S1 is copied to the chroma sample and the corresponding luma sample mapped with S2, respectively;
3) The chroma sample and the corresponding luma sample mapped with S1 is copied to the chroma sample and the corresponding luma sample mapped with S0, respectively;
4) The chroma sample and the corresponding luma sample mapped with S3 is copied to the chroma sample and the corresponding luma sample mapped with S1, respectively.

5. The method of any one of claims 3-4, wherein the maxY is equal to a larger one of the two luma samples mapped with two original indices, the maxC is equal to a chroma samples corresponding to the larger luma sample, the minY is equal to a smaller one of the two luma samples mapped with two original indices, and the minC is equal to a chroma sample corresponding to the smaller luma sample.

6. The method of any one of claims 1-2, wherein in response to four chroma samples and four corresponding luma samples mapped with four indices being used to derive the maxY, the maxC, the minY and the minC, the four indices are divided into two arrays G0 and G1, each array includes two indices.

7. The method of claim 6, wherein G0[0]= S0, G0[1]= S2, G1[0]=S1, and G1[1]=S3, and wherein each of S0, S1, S2 and S3 represent one index, which is mapped with a chroma sample and a corresponding luma sample.

8. The method of claim 7, further comprising applying a first comparison between the luma samples of G0[0] and the luma samples of G0[1], and selectively swapping G0[0] and G0[1] based on the first comparison.

9. The method of claim 8, further comprising swapping G0[0] and G0[1] in response to the luma samples of G0[0] is larger than the luma samples of G0[1].

10. The method of any one of claims 8-9, further comprising applying a second comparison between the luma samples of G1[0] and the luma samples of G1[1] after the first comparison, and selectively swapping G1[0] and G1[1] based on the second comparison.

11. The method of claim 10, further comprising swapping G1[0] and G1[1] in response to the luma samples of G1[0] is larger than the luma samples of G1[1].

12. The method of any one of claims 10-11, further comprising applying a third comparison between the luma samples of G0[0] and the luma samples of G1[1] after the second comparison,

and selectively swapping G0 and G1based on the third comparison, wherein swapping G0 and G1 comprising swapping G0[0] and G1[0], and swapping G0[1] and G1[1].

13. The method of claim 12, further comprising swapping G0 and G1 in response to the luma samples of G0[0] is larger than the luma samples of G1[1].

14. The method of any one of claims 12-13, further comprising applying a fourth comparison between the luma samples of G0[1] and the luma samples of G1[0] after the third comparison, and selectively swapping G0[1] and G1[0] based on the fourth comparison.

15. The method of claim 14, further comprising swapping G0[1] and G1[0] in response to the luma samples of G0[1] is larger than the luma samples of G1[0].

16. The method of any one of claims 14-15, further comprising deriving the maxY based on an average of the luma samples of G1[0] and G1[1] and the maxC based on an average of the chroma samples of G1[0] and G1[1] after the fourth comparison.

17. The method of any one of claims 14-15, further comprising deriving the minY based on an average of the luma samples of G0[0] and G0[1] and the minC based on an average of the chroma samples of G0[0] and G0[1] after the fourth comparison.

18. The method of any one of claims 1-17, wherein the conversion includes encoding the current video block into the bitstream.

19. The method of any one of claims 1-17, wherein the conversion includes decoding the current video block from the bitstream.

20. An apparatus for processing video data comprising a processor and a non-transitory memory with instructions thereon, wherein the instructions upon execution by the processor, cause the processor to:

determine, for a conversion between a current video block of a video that is a chroma block and a bitstream of the video, parameters of a cross-component linear model (CCLM) based on a maxY, a maxC, a minY, and a minC, wherein the maxY, the maxC, the minY, and the minC are derived from two or four indices, wherein an index is mapped with a chroma sample and a corresponding luma sample; and

perform the conversion based on the determination.

21. A non-transitory computer-readable storage medium storing instruction that cause a processor to:

determine, for a conversion between a current video block of a video that is a chroma block and a bitstream of the video, parameters of a cross-component linear model (CCLM) based on a maxY, a maxC, a minY, and a minC, wherein the maxY, the maxC, the minY, and the minC are derived from two or four indices, wherein an index is mapped with a chroma sample and a corresponding luma sample; and

perform the conversion based on the determination.

22. A non-transitory computer-readable recording medium storing a bitstream of a video which is generated by a method performed by a video processing apparatus, wherein the method comprises:

determining, for a current video block of a video that is a chroma block, parameters of a cross-component linear model (CCLM) based on a maxY, a maxC, a minY, and a minC, wherein the maxY, the maxC, the minY, and the minC are derived from two or four indices, wherein an index is mapped with a chroma sample and a corresponding luma sample; and

generating the bitstream based on the determination.