

CLAIMS

1. A method of intra Planar prediction with a height of a block equal to 1, comprising:

calculating a value of a vertical component $\text{predV}[x][y]$ of an intra prediction sample included in the block, wherein the value of the vertical component $\text{predV}[x][y]$ is

$$\text{predV}[x][y] = ((y + 1) * p[-1][nTbH]) \ll \text{Log2}(nTbW);$$

calculating a value of a horizontal component $\text{predH}[x][y]$ of the intra prediction sample, wherein the value of the horizontal component $\text{predH}[x][y]$ is

$$\text{predH}[x][y] = ((nTbW - 1 - x) * p[-1][y] + (x + 1) * p[nTbW][y - 1]); \text{ and}$$

generating the intra prediction sample based on the value of the vertical component and

the value of the horizontal component,

wherein $nTbH$ represents the height of the block, $nTbW$ represents the width of the block, $p[x][y]$ represents neighbouring samples with $x = -1, y = -1..nTbH$ and $x = 0..nTbW, y = -1$, and wherein the block is a transform block, or a prediction block.

2. The method of claim 1, wherein the intra prediction sample is calculated by:

$$\text{predSamples}[x][y] = (\text{predV}[x][y] + \text{predH}[x][y] + nTbW) \gg (\text{Log2}(nTbW) + 1).$$

3. The method of claim 1 or 2, wherein a bottom reference sample row of the block is padded

by $p[-1][nTbH]$.

4. The method of claim 1 or 2, wherein the width of the prediction block is obtained without applying clipping operation $nW = \text{Max}(nTbW, 2)$.

5. The method of claim 1 or 2, wherein the height of the prediction block is obtained without applying clipping operation $nH = \text{Max}(nTbH, 2)$.

6. A method of intra Planar prediction with a width of a block equal to 1, comprising:

calculating a value of a vertical component $\text{predV}[x][y]$ of an intra prediction sample included in the block, wherein the value of the vertical component $\text{predV}[x][y]$ is

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$$\text{predV}[x][y] = ((nTbH - 1 - y) * p[x][-1] + (y + 1) * p[-1][nTbH]);$$

calculating a value of a horizontal component $\text{predH}[x][y]$ of the intra prediction sample, wherein the value of the horizontal component $\text{predH}[x][y]$ is $\text{predH}[x][y] = ((x + 1) * p[nTbW][-1]) \ll \text{Log2}(nTbH)$; and

generating the intra prediction sample based on the value of the vertical component and
10 the value of the horizontal component,

wherein $nTbH$ represents the height of the block, $nTbW$ represents the width of the block, $p[x][y]$ represents neighbouring samples with $x = -1, y = -1..nTbH$ and $x = 0..nTbW, y = -1$, and wherein the block is a transform block, or a prediction block.

15 7. The method of claim 6, wherein the intra prediction sample is calculated by:

$$\text{predSamples}[x][y] = (\text{predV}[x][y] + \text{predH}[x][y] + nTbW * nTbH) \gg (\text{Log2}(nTbW) + \text{Log2}(nTbH) + 1).$$

8. The method of claim 6 or 7, wherein the a right reference sample column of the block is
20 padded by $p[nTbW][-1]$.

9. The method of claim 6 or 7, wherein the width of the prediction block is obtained without applying clipping operation $nW = \text{Max}(nTbW, 2)$.

10. The method of claim 6 or 7, wherein the height of the prediction block is obtained
25 without applying clipping operation $nH = \text{Max}(nTbH, 2)$.

11. An encoder (20) comprising processing circuitry for carrying out the method according to claim 1 or 6.

12. A decoder (30) comprising processing circuitry for carrying out the method according to
5 claim 1 or 6.

13. A computer-readable storage medium, comprising instructions that when executed cause one or more processors to perform the method according to claim 1 or 6.

10 14. A decoder, comprising:
one or more processors; and
a non-transitory computer-readable storage medium coupled to the processors and storing programming for execution by the processors, wherein the programming, when executed by the processors, configures the decoder to carry out the method according to claim 1 or 6.

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15. An encoder, comprising:
one or more processors; and
a non-transitory computer-readable storage medium coupled to the processors and storing programming for execution by the processors, wherein the programming, when executed by
20 the processors, configures the encoder to carry out the method according to claim 1 or 6.

16. A device of intra Planar prediction with a height of a block equal to 1, comprising:

a calculating unit (902), configured to:

25 calculate a value of a vertical component $\text{predV}[x][y]$ of an intra prediction sample included in the block, wherein the value of the vertical component $\text{predV}[x][y]$ is $\text{predV}[x][y] = ((y + 1) * p[-1][nTbH]) \ll \text{Log2}(nTbW)$; and

calculate a value of a horizontal component $\text{predH}[x][y]$ of the intra prediction sample, wherein the value of the horizontal component $\text{predH}[x][y]$ is $\text{predH}[x][y] = ((nTbW - 1 - x) * p[-1][y] + (x + 1) * p[nTbW][-1])$; and;

5 a predicting unit (903), configured to generate the intra prediction sample based on the value of the vertical component and the value of the horizontal component,

wherein $nTbH$ represents the height of the block, $nTbW$ represents the width of the block, $p[x][y]$ represents neighbouring samples with $x = -1, y = -1..nTbH$ and $x = 0..nTbW, y = -1$, and wherein the block is a transform block, or a prediction block.

10 17. The device of claim 16, wherein the predicting unit (903), configured to generate the intra prediction sample $\text{predSamples}[x][y]$ by:

$\text{predSamples}[x][y] = (\text{predV}[x][y] + \text{predH}[x][y] + nTbW) >> (\text{Log2}(nTbW) + 1)$.

15 18. The device of claim 16 or 17, wherein the device further comprises a padding unit (904), the padding unit (904) configured to pad a bottom reference sample row of the block by $p[-1][nTbH]$.

19. The device of claim 16 or 17, wherein the width of the prediction block is obtained without applying clipping operation $nW = \text{Max}(nTbW, 2)$.

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20. The device of claim 16 or 17, wherein the height of the prediction block is obtained without applying clipping operation $nH = \text{Max}(nTbH, 2)$.

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21. The device of claim 16 or 17, wherein the device is a decoder or an encoder.

22. A device of intra Planar prediction with a width of a block equal to 1, comprising:

a calculating unit (902), configured to:

calculate a value of a vertical component $\text{predV}[x][y]$ of an intra prediction sample included in the block, wherein the value of the vertical component $\text{predV}[x][y]$ is $\text{predV}[x][y] = ((nTbH - 1 - y) * p[x][-1] + (y + 1) * p[-1][nTbH]);$ and

5 calculate a value of a horizontal component $\text{predH}[x][y]$ of the intra prediction sample, wherein the value of the horizontal component $\text{predH}[x][y]$ is $\text{predH}[x][y] = ((x + 1) * p[nTbW][-1]) \ll \text{Log2}(nTbH);$ and;

a predicting unit (903), configured to generate the intra prediction sample based on the value of the vertical component and the value of the horizontal component,

10 wherein $nTbH$ represents the height of the block, $nTbW$ represents the width of the block, $p[x][y]$ represents neighbouring samples with $x = -1, y = -1..nTbH$ and $x = 0..nTbW, y = -1$, and wherein the block is a transform block, or a prediction block.