【CLAIMS】

1. A method of decoding video data, the method comprising:

deriving a luma intra prediction mode and chroma intra prediction mode;

determining a size of a luma transform unit and a size of a chroma transform unit;

generating a reference pixel if at least one reference pixel is unavailable;

generating prediction blocks of a current luma block and a current chroma block using adaptively filtered reference pixels; and

generating reconstructed blocks adding the prediction blocks with residual blocks,

wherein the luma intra prediction mode is derived using a most probable mode (MPM) group including three intra prediction modes, a mode group indicator and a luma prediction mode index,

wherein the luma prediction mode index indicates one of the three intra prediction modes in the MPM group as the luma intra prediction mode when the mode group indicator indicates the MPM group,

wherein, when only one of a left intra prediction mode and an above intra prediction mode of a current luma prediction unit is available, the MPM group includes the available intra prediction mode and two additional intra prediction modes which are determined by the available intra prediction mode, and

wherein when the available intra prediction mode is a non-directional mode, the other non-directional mode and a vertical mode are set as the two additional intra prediction modes.

2. The method of claim 1, wherein if the chroma intra prediction mode is a DM mode, the chroma intra prediction mode is set equal to the luma intra prediction mode.

3. The method of claim 1, wherein a DC mode and a planar mode are set as the two additional intra prediction modes when the available intra prediction mode is a directional mode.

4. The method of claim 1, wherein if a current chroma prediction unit is larger than the chroma transform unit, the chroma intra prediction mode is used for generating chroma prediction blocks of other blocks within the chroma prediction unit.

5. The method of claim 1, wherein when the mode group indicator does not indicate the MPM group, the luma intra prediction mode is determined by comparing the luma prediction mode index with three intra prediction modes of the MPM group in sequence.

6. The method of claim 5, wherein the lowest mode number of the three intra prediction modes is compared at first, and the highest mode number of the three intra prediction modes is compared lastly.

7. The method of claim 6, wherein if the luma prediction mode index is larger than or equal to the intra prediction mode of the MPM group, the luma prediction mode index is increased by one.

8. The method of claim 1, wherein when a prediction mode is an intra prediction, residual signals are luma signals and a size of the transform unit is equal to or smaller than 8×8, a scan pattern is selected among a diagonal scan, a vertical scan and a horizontal scan, and

when a prediction mode is an intra prediction, the residual signals are chroma signals and a size of the transform unit is equal to 4×4, the scan pattern is selected among a diagonal scan, a vertical scan and a horizontal scan.

9. The method of claim 1, wherein when a size of the transform unit is larger than 4×4, a quantized block is divided into plural subsets, and a scan pattern is applied to significant flags, coefficient signs and coefficient levels of each subset, and the plural subsets.

10. The method of claim 9, wherein the significant flags, the coefficient signs and the coefficient levels of each subset, and the plural subsets are scanned in a reverse direction, and non-zero subset flags indicating whether or not the subset contains non-zero coefficients are generated.