Amended Set of Claims

1. A method of coding video data comprising:

coding a plurality of blocks of video data, wherein at least one block of the plurality of blocks of video data is coded using an-intra pulse code modulation (IPCM) coding mode;

assigning a non-zero quantization parameter (QP) value for the at least one block coded using the IPCM coding mode; and

performing deblocking filtering on one or more of the plurality of blocks of video data based on the IPCM coding mode and the assigned non-zero QP value for the at least one block.

2. The method of claim 1, wherein performing the deblocking filtering on the one or more of the plurality of blocks of video data based on the IPCM coding mode and the assigned non-zero QP value comprises:

performing the deblocking filtering on the at least one block based on the assigned non-zero QP value.

3. The method of claim 2, wherein performing the deblocking filtering on the at least one block based on the assigned non-zero QP value comprises selecting a filter for the deblocking filtering based on the assigned non-zero QP value.

4. The method of claim 2 or 3, wherein performing the deblocking filtering on each of the at least one block based on the assigned non-zero QP value comprises determining a filter strength for the deblocking filtering based on the assigned non-zero QP value.

5. The method of any of claims 1-4, further comprising, prior to performing the deblocking filtering on the one or more of the plurality of blocks of video data based on the IPCM coding mode and the assigned non-zero QP value, enabling the deblocking filtering for the one or more of the plurality of blocks of video data.

6. Cancelled.

7. The method of any of claims 1-5, wherein assigning the non-zero QP value for the at least one block comprises determining the assigned non-zero QP value based on one or more of the following:

a signaled QP value for the at least one block, wherein the signaled QP value indicates the assigned non-zero QP value;

a predicted QP value for the at least one block; and

a signaled delta QP value for the at least one block, wherein the delta QP value represents a difference between the assigned non-zero QP value and the predicted QP value.

8. The method of any of claims 1-5, wherein assigning the non-zero QP value for the at least one block comprises:

when a size of the at least one block is smaller than a minimum coding unit quantization group size, setting at least one group QP value for a quantization group that includes the at least one block as the assigned non-zero QP value, wherein the quantization group also includes one or more blocks of video data coded using a lossy coding mode; and

when the size of the at least one block is greater than or equal to the minimum coding unit quantization group size, setting a QP value for a neighboring block of the plurality of blocks of video data, the neighboring block comprising one or more of a being located adjacent to the at least one block and being previously coded, as the assigned non-zero QP value.

9. The method of any of claims 1-5, wherein assigning the non-zero QP value for the at least one block comprises:

when a size of the at least one block is smaller than a minimum coding unit quantization group size, setting a QP value for a neighboring block of the plurality of blocks of video data, the neighboring block comprising one or more of being located adjacent to the at least one block and being previously coded, as the assigned non-zero QP value.

10-11. Cancelled.

12. The method of any of claims 1-5 or 7, wherein coding comprises decoding, and wherein

decoding the at least one block comprises receiving one of residual un-quantized video data and reconstructed video data of the at least one block in a received bitstream, and

assigning the non-zero QP value for the at least one block comprises one of receiving the assigned non-zero QP value in the received bitstream, and receiving a delta QP value for the at least one block in the received bitstream, the delta QP value representing a difference between the assigned non-zero QP value and a predicted QP value for the at least one block, and determining the assigned non-zero QP value based on the delta QP value and the predicted QP value,

the method further comprising receiving one or more syntax elements in the received bitstream, the one or more syntax elements indicating that the deblocking filtering is enabled for the one or more of the plurality of blocks of video data.

13. Cancelled.

14. The method of any of claims 1-5 or 7, wherein coding comprises encoding, and wherein

encoding the at least one block comprises signaling one of residual un-quantized video data and reconstructed video data of the at least one block in a bitstream, and

assigning the non-zero QP value for the at least one block comprises one of signaling the assigned non-zero QP value in the bitstream, and signaling a delta QP value for the at least one block in the bitstream, the delta QP value representing a difference between the assigned non-zero QP value and a predicted QP value for the at least one block,

the method further comprising signaling one or more syntax elements in the bitstream, the one or more syntax elements indicating that the deblocking filtering is enabled for the one or more of the plurality of blocks of video data.

15. Cancelled.

16. An apparatus configured to code video data, the apparatus comprising a video coder configured to:

code a plurality of blocks of video data, wherein the video coder is configured to code at least one block of the plurality of blocks of video data using an intra pulse code modulation (IPCM) coding mode;

assign a non-zero quantization parameter (QP) value for the at least one block coded using the IPCM coding mode; and

perform deblocking filtering on one or more of the plurality of blocks of video data based on the IPCM coding mode and the assigned non-zero QP value for the at least one block.

17. The apparatus of claim 16, wherein to perform the deblocking filtering on the one or more of the plurality of blocks of video data based on the IPCM coding mode and the assigned non-zero QP value, the video coder is configured to:

perform the deblocking filtering on the at least one block based on the assigned non-zero QP value.

18. The apparatus of claim 17, wherein to perform the deblocking filtering on the at least one block based on the assigned non-zero QP value, the video coder is configured to perform one or more of:

select a filter for the deblocking filtering based on the assigned non-zero QP value; and

determine a filter strength for the deblocking filtering based on the assigned non-zero QP value.

19. The apparatus of any of claims 16-18, wherein the video coder is further configured to, prior to performing the deblocking filtering on the one or more of the plurality of blocks of video data based on the IPCM coding mode and the assigned non-zero QP value, enable the deblocking filtering for the one or more of the plurality of blocks of video data.

20. Cancelled.

21. The apparatus of any of claims 16-19, wherein to assign the non-zero QP value for the at least one block, the video coder is configured to determine the assigned non-zero QP value based on one or more of the following:

a signaled QP value for the at least one block, wherein the signaled QP value indicates the assigned non-zero QP value;

a predicted QP value for the at least one block; and

a signaled delta QP value for the at least one block, wherein the delta QP value represents a difference between the assigned non-zero QP value and the predicted QP value.

22. The apparatus of any of claims 16-19, wherein to assign the non-zero QP value for the at least one block, the video coder is configured to:

when a size of the at least one block is smaller than a minimum coding unit quantization group size, set at least one group QP value for a quantization group that includes the at least one block as the assigned non-zero QP value, wherein the quantization group also includes one or more blocks of video data coded using a lossy coding mode; and

when the size of the at least one block is greater than or equal to the minimum coding unit quantization group size, set a QP value for a neighboring block of the plurality of blocks of video data, the neighboring block comprising one or more of a being located adjacent to the at least one block and being previously coded, as the assigned non-zero QP value.

23. The apparatus of any of claims 16-19, wherein to assign the non-zero QP value for the at least one block, the video coder is configured to:

when a size of the at least one block is smaller than a minimum coding unit quantization group size, setting a QP value for a neighboring block of the plurality of blocks of video data, the neighboring block comprising one or more of a block located adjacent to the at least one block and a previously coded block, as the assigned non-zero QP value.

24-25. Cancelled.

26. The apparatus of any of claims 16-19 or 21, wherein to code the plurality of blocks of video data including the at least one block, the video coder is configured to decode the plurality of blocks of video including the at least one block, and wherein

to decode the at least one block, the video coder is configured to receive one of residual un-quantized video data and reconstructed video data of the at least one block in a received bitstream, and

to assign the non-zero QP value for the at least one block, the video coder is configured to perform one of receiving the assigned non-zero QP value in the received bitstream, and receiving a delta QP value for the at least one block in the received bitstream, the delta QP value representing a difference between the assigned non-zero QP value and a predicted QP value for the at least one block, and determining the assigned non-zero QP value based on the delta QP value and the predicted QP value,

wherein the video coder is further configured to receive one or more syntax elements in the received bitstream, the one or more syntax elements indicating that the deblocking filtering is enabled for the one or more of the plurality of blocks of video data.

27. Cancelled.

28. The apparatus of any of claims 16-19 or 21, wherein to code the plurality of blocks of video data including the at least one block, the video coder is configured to encode the plurality of blocks of video including the at least one block, and wherein

to encode the at least one block, the video coder is configured to signal one of residual un-quantized video data and reconstructed video data of the at least one block in a bitstream, and

to assign the non-zero QP value for the at least one block, the video coder is configured to perform one of signaling the assigned non-zero QP value in the bitstream, and signaling a delta QP value for the at least one block in the bitstream, the delta QP value representing a difference between the assigned non-zero QP value and a predicted QP value for the at least one block,

wherein the video coder is further configured to signal one or more syntax elements in the bitstream, the one or more syntax elements indicating that the deblocking filtering is enabled for the one or more of the plurality of blocks of video data.

29. Cancelled.

30. The apparatus of any of claims 16-19, 21-22, 26, or 28, wherein the apparatus comprises at least one of:

an integrated circuit;

a microprocessor; and

a wireless communication device that includes the video coder.

31. A device configured to code video data, the device comprising:

means for coding a plurality of blocks of video data, including means for coding at least one block of the plurality of blocks of video data using an intra pulse code modulation (IPCM) coding mode;

means for assigning a non-zero quantization parameter (QP) value for the at least one block coded using the IPCM coding mode; and

means for performing deblocking filtering on one or more of the plurality of blocks of video data based on the IPCM coding mode and the assigned non-zero QP value for the at least one block.

32. The device of claim 31, wherein the means for performing the deblocking filtering on the one or more of the plurality of blocks of video data IPCM coding mode and the assigned non-zero QP value comprises:

means for, performing the deblocking filtering on the at least one block based on the assigned non-zero QP value.

33. The device of claim 32, wherein the means for performing the deblocking filtering on each of the at least one block based on the assigned non-zero QP value comprises one or more of:

means for selecting a filter for the deblocking filtering based on the assigned non-zero QP value; and

means for determining a filter strength for the deblocking filtering based on the assigned non-zero QP value.

34. The device of any of claims 31-33, wherein the means for assigning the non-zero QP value for the at least one block comprises means for determining the assigned non-zero QP value based on one or more of the following:

a signaled QP value for the at least one block, wherein the signaled QP value indicates the assigned non-zero QP value;

a predicted QP value for the at least one block; and

a signaled delta QP value for the at least one block, wherein the delta QP value represents a difference between the assigned non-zero QP value and the predicted QP value.

35. The device of claim any of claims 31, wherein the means for assigning the non-zero QP value for the at least one block comprises:

means for, when a size of the at least one block is smaller than a minimum coding unit quantization group size, setting at least one group QP value for a quantization group that includes the at least one block as the assigned non-zero QP value, wherein the quantization group also includes one or more blocks of video data coded using a lossy coding mode; and

means for, when the size of the at least one block is greater than or equal to the minimum coding unit quantization group size, setting a QP value for a neighboring block of the plurality of blocks of video data, the neighboring block comprising one or more of being located adjacent to the at least one block and being previously coded, as the assigned non-zero QP value.

36. The device of claim any of claims 31, wherein the means for assigning the non-zero QP value for the at least one block comprises:

means for, when a size of the at least one block is smaller than a minimum coding unit quantization group size, setting a QP value for a neighboring block of the plurality of blocks of video data, the neighboring block comprising one or more of a block located adjacent to the at least one block and a previously coded block, as the assigned non-zero QP value.

37-38. Cancelled.

39. The device of any of claims 31-34, wherein coding comprises decoding, and wherein

the means for decoding the at least one block comprises means for receiving one of residual un-quantized video data and reconstructed video data of the at least one block in a received bitstream, and

the means for assigning the non-zero QP value for the at least one block comprises one of means for receiving the assigned non-zero QP value in the received bitstream, and means for receiving a delta QP value for the at least one block in the received bitstream, the delta QP value representing a difference between the assigned non-zero QP value and a predicted QP value for the at least one block, and determining the assigned non-zero QP value based on the delta QP value and the predicted QP value,

the device further comprising means for receiving one or more syntax elements in the received bitstream, the one or more syntax elements indicating that the deblocking filtering is enabled for the one or more of the plurality of blocks of video data.

40. The device of any of claims 31-34, wherein coding comprises encoding, and wherein

the means for encoding the at least one block comprises means for signaling one of residual un-quantized video data and reconstructed video data of the at least one block in a bitstream, and

the means for assigning the non-zero QP value for the at least one block comprises one of means for signaling the assigned non-zero QP value in the bitstream, and means for signaling a delta QP value for the at least one block in the bitstream, the delta QP value representing a difference between the assigned non-zero QP value and a predicted QP value for the at least one block,

the device further comprising means for signaling one or more syntax elements in the bitstream, the one or more syntax elements indicating that the deblocking filtering is enabled for the one or more of the plurality of blocks of video data.

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41. A computer-readable storage medium storing instructions that, when executed, cause one or more processors to code video data, wherein the instructions cause the one or more processors to:

code a plurality of blocks of video data, including coding at least one block of the plurality of blocks of video data using an intra pulse code modulation (IPCM) coding mode;

assign a non-zero quantization parameter (QP) value for the at least one block coded using the IPCM coding mode; and

perform deblocking filtering on one or more of the plurality of blocks of video data based on the IPCM coding mode and the assigned non-zero QP value for the at least one block.

42. The computer-readable storage medium of claim 41, wherein the instructions that cause the one or more processors to perform the deblocking filtering on the one or more of the plurality of blocks of video data based on the IPCM coding mode and the assigned non-zero QP value comprise instructions that cause the one or more processors to:

perform the deblocking filtering on the at least one block based on the assigned non-zero QP value.

43. The computer-readable storage medium of claim 42, wherein the instructions that cause the one or more processors to perform the deblocking filtering on the at least one block based on the assigned non-zero QP value comprise instructions that cause the one or more processors to perform one or more of:

select a filter for the deblocking filtering based on the assigned non-zero QP value; and

determine a filter strength for the deblocking filtering based on the assigned non-zero QP value.

44. The computer-readable storage medium of any of claims 41 or 42, wherein the instructions that cause the one or more processors to assign the non-zero QP value for the at least one block comprise instructions that cause the one or more processors to determine the assigned non-zero QP value based on one or more of the following:

a signaled QP value for the at least one block, wherein the signaled QP value indicates the assigned non-zero QP value;

a predicted QP value for the at least one block; and

a signaled delta QP value for the at least one block, wherein the delta QP value represents a difference between the assigned non-zero QP value and the predicted QP value.

45. The computer-readable storage medium of any of claims 41 or 42, wherein the coding mode used to code the at least one block comprises the IPCM coding mode, and wherein the instructions that cause the one or more processors to assign the non-zero QP value for the at least one block comprise instructions that cause the one or more processors to:

when a size of the at least one block is smaller than a minimum coding unit quantization group size, set at least one group QP value for a quantization group that includes the at least one block as the assigned non-zero QP value, wherein the quantization group also includes one or more blocks of video data coded using a lossy coding mode; and

when the size of the at least one block is greater than or equal to the minimum coding unit quantization group size, set a QP value for a neighboring block of the plurality of blocks of video data, the neighboring block comprising one or more of being located adjacent to the at least one block and being previously coded, as the assigned non-zero QP value.

46. The computer-readable storage medium of any of claims 41 or 42, wherein the instructions that cause the one or more processors to assign the non-zero QP value for the at least one block comprise instructions that cause the one or more processors to:

when a size of the at least one block is smaller than a minimum coding unit quantization group size, set a QP value for a neighboring block of the plurality of blocks of video data, the neighboring block comprising one or more of a block located adjacent to the at least one block and a previously coded block, as the assigned non-zero QP value.

47–48. Cancelled.

49. The computer-readable storage medium of any of claims 41–43, wherein coding comprises decoding, and wherein

the instructions that cause the one or more processors to decode the at least one block comprise instructions that cause the one or more processors to receive one of residual un-quantized video data and reconstructed video data of the at least one block in a received bitstream, and

the instructions that cause the one or more processors to assign the non-zero QP value for the at least one block comprise one of instructions that cause the one or more processors to receive the assigned non-zero QP value in the received bitstream, and instructions that cause the one or more processors to receive a delta QP value for the at least one block in the received bitstream, the delta QP value representing a difference between the assigned non-zero QP value and a predicted QP value for the at least one block, and determine the assigned non-zero QP value based on the delta QP value and the predicted QP value,

the computer-readable storage medium further comprising instructions that cause the one or more processors to receive one or more syntax elements in the received bitstream, the one or more syntax elements indicating that the deblocking filtering is enabled for the one or more of the plurality of blocks of video data.

50. The computer-readable storage medium of any of claims 41-43, wherein coding comprises encoding, and wherein

the instructions that cause the one or more processors to encode the at least one block comprise instructions that cause the one or more processors to signal one of residual un-quantized video data and reconstructed video data of the at least one block in a bitstream, and

the instructions that cause the one or more processors to assign the non-zero QP value for the at least one block comprise one of instructions that cause the one or more processors to signal the assigned non-zero QP value in the bitstream, and instructions that cause the one or more processors to signal a delta QP value for the at least one block in the bitstream, the delta QP value representing a difference between the assigned non-zero QP value and a predicted QP value for the at least one block,

the computer-readable storage medium further comprising instructions that cause the one or more processors to signal one or more syntax elements in the bitstream, the one or more syntax elements indicating that the deblocking filtering is enabled for the one or more of the plurality of blocks of video data.

51. A method of coding video data comprising:

coding a plurality of blocks of video data, wherein at least one block of the plurality of blocks of video data is coded using an intra pulse code modulation (IPCM) coding mode;

assigning a non-zero quantization parameter (QP) value for the at least one block; and

performing deblocking filtering on one or more of the plurality of blocks of video data based on the assigned non-zero QP value for the at least one block.

52. A method of coding video data comprising:

coding a plurality of blocks of video data, wherein at least one block of the plurality of blocks of video data is coded using a lossless coding mode that uses prediction;

assigning a non-zero quantization parameter (QP) value for the at least one block;

performing deblocking filtering on one or more of the plurality of blocks of video data, other than the at least one block, based on the assigned non-zero QP value for the at least one block; and

avoiding performing deblocking filtering on the at least one block.

53. A method of decoding video data, comprising:

decoding a plurality of blocks of video data using intra pulse code modulation (IPCM) coding mode;

assigning a non-zero quantization parameter (QP) value for at least one block of the plurality of blocks coded using the IPCM coding mode, wherein assigning the non-zero QP value for the at least one block comprises:

when a size of the at least one block is smaller than a minimum coding unit quantization group size, setting at least one group QP value for a quantization group that includes the at least one block as the assigned non-zero QP value, wherein the quantization group also includes one or more blocks of video data coded using a lossy coding mode; and

when the size of the at least one block is greater than or equal to the minimum coding unit quantization group size, setting a QP value for a neighboring block of the plurality of blocks of video data, the neighboring block comprising one or more of being located adjacent to the at least one block and being previously coded as the assigned non-zero QP value; and

performing deblocking filtering on one or more of the plurality of blocks of video data based on the IPCM coding mode and the assigned non-zero QP value for the at least one block.

54. A method of decoding video data comprising:

decoding a plurality of blocks of video data, wherein at least a first block of the plurality of blocks of video data is coded using a lossless coding mode that uses prediction, and wherein at least a second block of the plurality of blocks of video data is coded using a lossy coding mode;

setting one of a non-zero quantization parameter (QP) value and a delta QP value for the second block as an assigned non-zero QP value for the first block coded using the lossless coding mode, wherein the delta QP value represents a difference between the non-zero QP value and a predicted QP value for the second block; and

performing deblocking filtering on the second block of video data based on the lossless coding mode and the assigned non-zero QP value for the second block.

55. The method of claim 52, wherein performing the deblocking filtering on the one or more of the plurality of blocks of video data based on the lossless coding mode and the assigned non-zero QP value comprises:

performing the deblocking filtering on an adjacent block of the plurality of blocks of video data, the adjacent block located adjacent to the at least one block and coded using a lossy coding mode, based on the assigned non-zero QP value.

56. The method of claim 55, wherein performing the deblocking filtering on each of the at least one block and the adjacent block based on the assigned non-zero QP value comprises selecting a filter for the deblocking filtering based on the assigned non-zero QP value.

57. The method of claim 55 or 56, wherein performing the deblocking filtering on each of the at least one block and the adjacent block based on the assigned non-zero QP value comprises determining a filter strength for the deblocking filtering based on the assigned non-zero QP value.

58. The method of any of claims 55-57, further comprising, prior to performing the deblocking filtering on the one or more of the plurality of blocks of video data based on the coding mode used to code the at least one block and the assigned non-zero QP value, enabling the deblocking filtering for the one or more of the plurality of blocks of video data.

59. The method of claim 55, further comprising disabling deblocking filtering for the at least one block, including not performing the deblocking filtering for internal boundary edges of the at least one block.

60. The method of any of claims 55-59, wherein assigning the non-zero QP value for the at least one block comprises determining the assigned non-zero QP value based on one or more of the following:

a signaled QP value for the at least one block, wherein the signaled QP value indicates the assigned non-zero QP value;

a predicted QP value for the at least one block; and

a signaled delta QP value for the at least one block, wherein the delta QP value represents a difference between the assigned non-zero QP value and the predicted QP value.

61. The method of any of claims 55-59, wherein assigning the non-zero QP value for the at least one block comprises setting one of a QP value and a delta QP value for a lossy block of the plurality of blocks of video data as the assigned non-zero QP value, wherein the delta QP value represents a difference between the QP value and a predicted QP value for the lossy block, the lossy block comprising a block coded using a lossy coding mode.

62. The method of any of claims 55-59, wherein assigning the non-zero QP value for the at least one block comprises setting a constant value as the assigned non-zero QP value.

63. The method of any of claims 55-59, wherein coding comprises decoding, and wherein

decoding the at least one block comprises receiving one of residual un-quantized video data and reconstructed video data of the at least one block in a received bitstream, and

assigning the non-zero QP value for the at least one block comprises one of receiving the assigned non-zero QP value in the received bitstream, and receiving a delta QP value for the at least one block in the received bitstream, the delta QP value representing a difference between the assigned non-zero QP value and a predicted QP value for the at least one block, and determining the assigned non-zero QP value based on the delta QP value and the predicted QP value,

the method further comprising receiving one or more syntax elements in the received bitstream, the one or more syntax elements indicating that the deblocking filtering is enabled for the one or more of the plurality of blocks of video data.

64. The method of claim 63, wherein the one or more syntax elements comprise a first one or more syntax elements, the method further comprising receiving a second one or more syntax elements in the received bitstream, the second one or more syntax elements indicating that the deblocking filtering is disabled for the at least one block.

65. The method of any of claims 55-59, wherein coding comprises encoding, and wherein

encoding the at least one block comprises signaling one of residual un-quantized video data and reconstructed video data of the at least one block in a bitstream, and

assigning the non-zero QP value for the at least one block comprises one of signaling the assigned non-zero QP value in the bitstream, and signaling a delta QP value for the at least one block in the bitstream, the delta QP value representing a difference between the assigned non-zero QP value and a predicted QP value for the at least one block,

the method further comprising signaling one or more syntax elements in the bitstream, the one or more syntax elements indicating that the deblocking filtering is enabled for the one or more of the plurality of blocks of video data.

66. The method of claim 65, wherein the one or more syntax elements comprise a first one or more syntax elements, the method further comprising signaling a second one or more syntax elements in the bitstream, the second one or more syntax elements indicating that the deblocking filtering is disabled for the at least one block.

67. An apparatus configured to code video data, the apparatus comprising a video coder configured to:

code a plurality of blocks of video data, wherein the video coder is configured to code at least one block of the plurality of blocks of video data using a lossless coding mode that uses prediction;

assign a non-zero quantization parameter (QP) value for the at least one block coded using the coding mode; and

perform deblocking filtering on one or more of the plurality of blocks of video data based on the coding mode used to code the at least one block and the assigned non-zero QP value for the at least one block.

68. The apparatus of claim 67, wherein to perform the deblocking filtering on the one or more of the plurality of blocks of video data based on the coding mode used to code the at least one block and the assigned non-zero QP value, the video coder is configured to:

perform the deblocking filtering on an adjacent block of the plurality of blocks of video data, the adjacent block located adjacent to the at least one block and coded using a lossy coding mode, based on the assigned non-zero QP value.

69. The apparatus of claim 68, wherein to perform the deblocking filtering on each of the at least one block and the adjacent block based on the assigned non-zero QP value, the video coder is configured to perform one or more of:

select a filter for the deblocking filtering based on the assigned non-zero QP value; and

determine a filter strength for the deblocking filtering based on the assigned non-zero QP value.

70. The apparatus of any of claims 67-69, wherein the video coder is further configured to, prior to performing the deblocking filtering on the one or more of the plurality of blocks of video data based on the coding mode used to code the at least one block and the assigned non-zero QP value, enable the deblocking filtering for the one or more of the plurality of blocks of video data.

71. The apparatus of claim 67, wherein the video coder is further configured to disable deblocking filtering for the at least one block, including the video coder not performing the deblocking filtering for internal boundary edges of the at least one block.

72. The apparatus of any of claims 67-71, wherein to assign the non-zero QP value for the at least one block, the video coder is configured to determine the assigned non-zero QP value based on one or more of the following:

a signaled QP value for the at least one block, wherein the signaled QP value indicates the assigned non-zero QP value;

a predicted QP value for the at least one block; and

a signaled delta QP value for the at least one block, wherein the delta QP value represents a difference between the assigned non-zero QP value and the predicted QP value.

73. The apparatus of any of claims 67-71, wherein to assign the non-zero QP value for the at least one block, the video coder is configured to set one of a QP value and a delta QP value for a lossy block of the plurality of blocks of video data as the assigned non-zero QP value, wherein the delta QP value represents a difference between the QP value and a predicted QP value for the lossy block, the lossy block comprising a block coded using a lossy coding mode.

74. The apparatus of any of claims 67-71, wherein to assign the non-zero QP value for the at least one block, the video coder is configured to set a constant value as the assigned non-zero QP value.

75. The apparatus of any of claims 67-71, wherein to code the plurality of blocks of video data including the at least one block, the video coder is configured to decode the plurality of blocks of video including the at least one block, and wherein

to decode the at least one block, the video coder is configured to receive one of residual un-quantized video data and reconstructed video data of the at least one block in a received bitstream, and

to assign the non-zero QP value for the at least one block, the video coder is configured to perform one of receiving the assigned non-zero QP value in the received bitstream, and receiving a delta QP value for the at least one block in the received bitstream, the delta QP value representing a difference between the assigned non-zero QP value and a predicted QP value for the at least one block, and determining the assigned non-zero QP value based on the delta QP value and the predicted QP value,

wherein the video coder is further configured to receive one or more syntax elements in the received bitstream, the one or more syntax elements indicating that the deblocking filtering is enabled for the one or more of the plurality of blocks of video data.

76. The apparatus of claim 75, wherein the one or more syntax elements comprise a first one or more syntax elements, and wherein the video coder is further configured to receive a second one or more syntax elements in the received bitstream, the second one or more syntax elements indicating that the deblocking filtering is disabled for the at least one block.

77. The apparatus of any of claims 67-71, wherein to code the plurality of blocks of video data including the at least one block, the video coder is configured to encode the plurality of blocks of video including the at least one block, and wherein

to encode the at least one block, the video coder is configured to signal one of residual un-quantized video data and reconstructed video data of the at least one block in a bitstream, and

to assign the non-zero QP value for the at least one block, the video coder is configured to perform one of signaling the assigned non-zero QP value in the bitstream, and signaling a delta QP value for the at least one block in the bitstream, the delta QP

value representing a difference between the assigned non-zero QP value and a predicted QP value for the at least one block,

wherein the video coder is further configured to signal one or more syntax elements in the bitstream, the one or more syntax elements indicating that the deblocking filtering is enabled for the one or more of the plurality of blocks of video data.

78. The apparatus of claim 77, wherein the one or more syntax elements comprise a first one or more syntax elements, and wherein the video coder is further configured to signal a second one or more syntax elements in the bitstream, the second one or more syntax elements indicating that the deblocking filtering is disabled for the at least one block.

79. The apparatus of any of claims 67-78, wherein the apparatus comprises at least one of:

an integrated circuit;

a microprocessor; and

a wireless communication device that includes the video coder.

80. A device configured to code video data, the device comprising:

means for coding a plurality of blocks of video data, including means for coding at least one block of the plurality of blocks of video data using a lossless coding mode that uses prediction;

means for assigning a non-zero quantization parameter (QP) value for the at least one block coded using the coding mode; and

means for performing deblocking filtering on one or more of the plurality of blocks of video data based on the coding mode used to code the at least one block and the assigned non-zero QP value for the at least one block.

81. The device of claim 80, wherein the means for performing the deblocking filtering on the one or more of the plurality of blocks of video data based on the coding mode used to code the at least one block and the assigned non-zero QP value comprises:

means for performing the deblocking filtering on an adjacent block of the plurality of blocks of video data, the adjacent block located adjacent to the at least one block and coded using a lossy coding mode, based on the assigned non-zero QP value.

82. The device of claim 81, wherein the means for performing the deblocking filtering on each of the at least one block and the adjacent block based on the assigned non-zero QP value comprises one or more of:

means for selecting a filter for the deblocking filtering based on the assigned non-zero QP value; and

means for determining a filter strength for the deblocking filtering based on the assigned non-zero QP value.

83. The device of any of claims 80-82, wherein the means for assigning the non-zero QP value for the at least one block comprises means for determining the assigned non-zero QP value based on one or more of the following:

a signaled QP value for the at least one block, wherein the signaled QP value indicates the assigned non-zero QP value;

a predicted QP value for the at least one block; and

a signaled delta QP value for the at least one block, wherein the delta QP value represents a difference between the assigned non-zero QP value and the predicted QP value.

84. The device any of claims 80-82, wherein the means for assigning the non-zero QP value for the at least one block comprises means for setting one of a QP value and a delta QP value for a lossy block of the plurality of blocks of video data as the assigned non-zero QP value, wherein the delta QP value represents a difference between the QP value and a predicted QP value for the lossy block, the lossy block comprising a block coded using a lossy coding mode.

85. The device of any of claims 80-82, wherein the means for assigning the non-zero QP value for the at least one block comprises means for setting a constant value as the assigned non-zero QP value.

86. The device of any of claims 80-82, wherein coding comprises decoding, and wherein

the means for decoding the at least one block comprises means for receiving one of residual un-quantized video data and reconstructed video data of the at least one block in a received bitstream, and

the means for assigning the non-zero QP value for the at least one block comprises one of means for receiving the assigned non-zero QP value in the received bitstream, and means for receiving a delta QP value for the at least one block in the received bitstream, the delta QP value representing a difference between the assigned non-zero QP value and a predicted QP value for the at least one block, and determining the assigned non-zero QP value based on the delta QP value and the predicted QP value,

the device further comprising means for receiving one or more syntax elements in the received bitstream, the one or more syntax elements indicating that the deblocking filtering is enabled for the one or more of the plurality of blocks of video data.

87. The device of any of claims 80-82, wherein coding comprises encoding, and wherein

the means for encoding the at least one block comprises means for signaling one of residual un-quantized video data and reconstructed video data of the at least one block in a bitstream, and

the means for assigning the non-zero QP value for the at least one block comprises one of means for signaling the assigned non-zero QP value in the bitstream, and means for signaling a delta QP value for the at least one block in the bitstream, the delta QP value representing a difference between the assigned non-zero QP value and a predicted QP value for the at least one block,

the device further comprising means for signaling one or more syntax elements in the bitstream, the one or more syntax elements indicating that the deblocking filtering is enabled for the one or more of the plurality of blocks of video data.

88. A computer-readable storage medium storing instructions that, when executed, cause one or more processors to code video data, wherein the instructions cause the one or more processors to:

code a plurality of blocks of video data, including coding at least one block of the plurality of blocks of video data using a lossless coding mode that uses prediction;

assign a non-zero quantization parameter (QP) value for the at least one block coded using the coding mode; and

perform deblocking filtering on one or more of the plurality of blocks of video data based on the coding mode used to code the at least one block and the assigned non-zero QP value for the at least one block.

89. The computer-readable storage medium of claim 88, wherein the instructions that cause the one or more processors to perform the deblocking filtering on the one or more of the plurality of blocks of video data based on the coding mode used to code the at least one block and the assigned non-zero QP value comprise instructions that cause the one or more processors to:

perform the deblocking filtering on an adjacent block of the plurality of blocks of video data, the adjacent block located adjacent to the at least one block and coded using a lossy coding mode, based on the assigned non-zero QP value.

90. The computer-readable storage medium of claim 88 or 89, wherein the instructions that cause the one or more processors to perform the deblocking filtering on each of the at least one block and the adjacent block based on the assigned non-zero QP value comprise instructions that cause the one or more processors to perform one or more of:

select a filter for the deblocking filtering based on the assigned non-zero QP value; and

determine a filter strength for the deblocking filtering based on the assigned non-zero QP value.

91. The computer-readable storage medium of any of claims 88 or 89, wherein the instructions that cause the one or more processors to assign the non-zero QP value for the at least one block comprise instructions that cause the one or more processors to determine the assigned non-zero QP value based on one or more of the following:

a signaled QP value for the at least one block, wherein the signaled QP value indicates the assigned non-zero QP value;

a predicted QP value for the at least one block; and

a signaled delta QP value for the at least one block, wherein the delta QP value represents a difference between the assigned non-zero QP value and the predicted QP value.

92. The computer-readable storage medium of any of claims 88 or 89, wherein the instructions that cause the one or more processors to assign the non-zero QP value for the at least one block comprise instructions that cause the one or more processors to set one of a QP value and a delta QP value for a lossy block of the plurality of blocks of video data as the assigned non-zero QP value, wherein the delta QP value represents a difference between the QP value and a predicted QP value for the lossy block, the lossy block comprising a block coded using a lossy coding mode.

93. The computer-readable storage medium of any of claims 88 or 89, and wherein the instructions that cause the one or more processors to assign the non-zero QP value for the at least one block comprise instructions that cause the one or more processors to set a constant value as the assigned non-zero QP value.

94. The computer-readable storage medium of any of claims 88 or 89, wherein coding comprises decoding, and wherein

the instructions that cause the one or more processors to decode the at least one block comprise instructions that cause the one or more processors to receive one of residual un-quantized video data and reconstructed video data of the at least one block in a received bitstream, and

the instructions that cause the one or more processors to assign the non-zero QP value for the at least one block comprise one of instructions that cause the one or more processors to receive the assigned non-zero QP value in the received bitstream, and instructions that cause the one or more processors to receive a delta QP value for the at least one block in the received bitstream, the delta QP value representing a difference

between the assigned non-zero QP value and a predicted QP value for the at least one block, and determine the assigned non-zero QP value based on the delta QP value and the predicted QP value,

the computer-readable storage medium further comprising instructions that cause the one or more processors to receive one or more syntax elements in the received bitstream, the one or more syntax elements indicating that the deblocking filtering is enabled for the one or more of the plurality of blocks of video data.

95. The computer-readable storage medium of any of claims 88 or 89, wherein coding comprises encoding, and wherein

the instructions that cause the one or more processors to encode the at least one block comprise instructions that cause the one or more processors to signal one of residual un-quantized video data and reconstructed video data of the at least one block in a bitstream, and

the instructions that cause the one or more processors to assign the non-zero QP value for the at least one block comprise one of instructions that cause the one or more processors to signal the assigned non-zero QP value in the bitstream, and instructions that cause the one or more processors to signal a delta QP value for the at least one block in the bitstream, the delta QP value representing a difference between the assigned non-zero QP value and a predicted QP value for the at least one block,

the computer-readable storage medium further comprising instructions that cause the one or more processors to signal one or more syntax elements in the bitstream, the one or more syntax elements indicating that the deblocking filtering is enabled for the one or more of the plurality of blocks of video data.

CLAIMS

1. A method of coding video data comprising:

coding a plurality of blocks of video data, wherein at least one block of the plurality of blocks of video data is coded using an intra pulse code modulation (IPCM) coding mode;

assigning a non-zero quantization parameter (QP) value for the at least one block coded using the IPCM coding mode; and

performing deblocking filtering on one or more of the plurality of blocks of video data based on the IPCM coding mode and the assigned non-zero QP value for the at least one block.

2. The method of claim 1, wherein performing the deblocking filtering on the one or more of the plurality of blocks of video data based on the IPCM coding mode and the assigned non-zero QP value comprises:

performing the deblocking filtering on the at least one block based on the assigned non-zero QP value.

3. The method of claim 2, wherein performing the deblocking filtering on the at least one block based on the assigned non-zero QP value comprises selecting a filter for the deblocking filtering based on the assigned non-zero QP value.

4. The method of claim 2, wherein performing the deblocking filtering on each of the at least one block based on the assigned non-zero QP value comprises determining a filter strength for the deblocking filtering based on the assigned non-zero QP value.

5. The method of any of claims 1-4, further comprising, prior to performing the deblocking filtering on the one or more of the plurality of blocks of video data based on the IPCM coding mode and the assigned non-zero QP value, enabling the deblocking filtering for the one or more of the plurality of blocks of video data.

6. The method of any of claims 1-4, wherein assigning the non-zero QP value for the at least one block comprises determining the assigned non-zero QP value based on one or more of the following:

a signaled QP value for the at least one block, wherein the signaled QP value indicates the assigned non-zero QP value;

a predicted QP value for the at least one block; and

a signaled delta QP value for the at least one block, wherein the delta QP value represents a difference between the assigned non-zero QP value and the predicted QP value.

7. The method of any of claims 1-4, wherein assigning the non-zero QP value for the at least one block comprises:

when a size of the at least one block is smaller than a minimum coding unit quantization group size, setting at least one group QP value for a quantization group that includes the at least one block as the assigned non-zero QP value, wherein the quantization group also includes one or more blocks of video data coded using a lossy coding mode; and

when the size of the at least one block is greater than or equal to the minimum coding unit quantization group size, setting a QP value for a neighboring block of the plurality of blocks of video data, the neighboring block comprising one or more of ~~a~~ being located adjacent to the at least one block and being previously coded, as the assigned non-zero QP value.

8. The method of any of claims 1-4, wherein assigning the non-zero QP value for the at least one block comprises:

when a size of the at least one block is smaller than a minimum coding unit quantization group size, setting a QP value for a neighboring block of the plurality of blocks of video data, the neighboring block comprising one or more of being located adjacent to the at least one block and being previously coded, as the assigned non-zero QP value.

9. The method of any of claims 1-4, wherein coding comprises decoding, and wherein

decoding the at least one block comprises receiving one of residual un-quantized video data and reconstructed video data of the at least one block in a received bitstream, and

assigning the non-zero QP value for the at least one block comprises one of receiving the assigned non-zero QP value in the received bitstream, and receiving a delta QP value for the at least one block in the received bitstream, the delta QP value representing a difference between the assigned non-zero QP value and a predicted QP value for the at least one block, and determining the assigned non-zero QP value based on the delta QP value and the predicted QP value,

the method further comprising receiving one or more syntax elements in the received bitstream, the one or more syntax elements indicating that the deblocking filtering is enabled for the one or more of the plurality of blocks of video data.

10. The method of any of claims 1-4, wherein coding comprises encoding, and wherein

encoding the at least one block comprises signaling one of residual un-quantized video data and reconstructed video data of the at least one block in a bitstream, and

assigning the non-zero QP value for the at least one block comprises one of signaling the assigned non-zero QP value in the bitstream, and signaling a delta QP value for the at least one block in the bitstream, the delta QP value representing a difference between the assigned non-zero QP value and a predicted QP value for the at least one block,

the method further comprising signaling one or more syntax elements in the bitstream, the one or more syntax elements indicating that the deblocking filtering is enabled for the one or more of the plurality of blocks of video data.

11. An apparatus configured to code video data, the apparatus comprising a video coder configured to:

code a plurality of blocks of video data, wherein the video coder is configured

to code at least one block of the plurality of blocks of video data using an intra pulse code modulation (IPCM) coding mode;

assign a non-zero quantization parameter (QP) value for the at least one block coded using the IPCM coding mode; and

perform deblocking filtering on one or more of the plurality of blocks of video data based on the IPCM coding mode and the assigned non-zero QP value for the at least one block.

12. The apparatus of claim 11, wherein to perform the deblocking filtering on the one or more of the plurality of blocks of video data based on the IPCM coding mode and the assigned non-zero QP value, the video coder is configured to:

perform the deblocking filtering on the at least one block based on the assigned non-zero QP value.

13. The apparatus of claim 12, wherein to perform the deblocking filtering on the at least one block based on the assigned non-zero QP value, the video coder is configured to perform one or more of:

select a filter for the deblocking filtering based on the assigned non-zero QP value; and

determine a filter strength for the deblocking filtering based on the assigned non-zero QP value.

14. The apparatus of any of claims 11, wherein the video coder is further configured to, prior to performing the deblocking filtering on the one or more of the plurality of blocks of video data based on the IPCM coding mode and the assigned non-zero QP value, enable the deblocking filtering for the one or more of the plurality of blocks of video data.

15. The apparatus of any of claims 11-14, wherein to assign the non-zero QP value for the at least one block, the video coder is configured to determine the assigned non-zero QP value based on one or more of the following:

a signaled QP value for the at least one block, wherein the signaled QP value indicates the assigned non-zero QP value;

a predicted QP value for the at least one block; and

a signaled delta QP value for the at least one block, wherein the delta QP value represents a difference between the assigned non-zero QP value and the predicted QP value.

16. The apparatus of any of claims 11-14, wherein to assign the non-zero QP value for the at least one block, the video coder is configured to:

when a size of the at least one block is smaller than a minimum coding unit quantization group size, set at least one group QP value for a quantization group that includes the at least one block as the assigned non-zero QP value, wherein the quantization group also includes one or more blocks of video data coded using a lossy coding mode; and

when the size of the at least one block is greater than or equal to the minimum coding unit quantization group size, set a QP value for a neighboring block of the plurality of blocks of video data, the neighboring block comprising one or more of ~~a~~ being located adjacent to the at least one block and being previously coded, as the assigned non-zero QP value.

17. The apparatus of any of claims 11-14, wherein to assign the non-zero QP value for the at least one block, the video coder is configured to:

when a size of the at least one block is smaller than a minimum coding unit quantization group size, setting a QP value for a neighboring block of the plurality of blocks of video data, the neighboring block comprising one or more of a block located adjacent to the at least one block and a previously coded block, as the assigned non-zero QP value.

18. The apparatus of any of claims 11-14, wherein to code the plurality of blocks of video data including the at least one block, the video coder is configured to decode the plurality of blocks of video including the at least one block, and wherein

to decode the at least one block, the video coder is configured to receive one of residual un-quantized video data and reconstructed video data of the at least one block in a received bitstream, and

to assign the non-zero QP value for the at least one block, the video coder is configured to perform one of receiving the assigned non-zero QP value in the received bitstream, and receiving a delta QP value for the at least one block in the received bitstream, the delta QP value representing a difference between the assigned non-zero QP value and a predicted QP value for the at least one block, and determining the assigned non-zero QP value based on the delta QP value and the predicted QP value,

wherein the video coder is further configured to receive one or more syntax elements in the received bitstream, the one or more syntax elements indicating that the deblocking filtering is enabled for the one or more of the plurality of blocks of video data.

19. The apparatus of any of claims 11-14, wherein to code the plurality of blocks of video data including the at least one block, the video coder is configured to encode the plurality of blocks of video including the at least one block, and wherein

to encode the at least one block, the video coder is configured to signal one of residual un-quantized video data and reconstructed video data of the at least one block in a bitstream, and

to assign the non-zero QP value for the at least one block, the video coder is configured to perform one of signaling the assigned non-zero QP value in the bitstream, and signaling a delta QP value for the at least one block in the bitstream, the delta QP value representing a difference between the assigned non-zero QP value and a predicted QP value for the at least one block,

wherein the video coder is further configured to signal one or more syntax elements in the bitstream, the one or more syntax elements indicating that the deblocking filtering is enabled for the one or more of the plurality of blocks of video data.

20. The apparatus of any of claims 11-14, wherein the apparatus comprises at least one of:

an integrated circuit;

a microprocessor; and

a wireless communication device that includes the video coder.

21. A device configured to code video data, the device comprising:

means for coding a plurality of blocks of video data, including means for coding at least one block of the plurality of blocks of video data using an intra pulse code modulation (IPCM) coding mode;

means for assigning a non-zero quantization parameter (QP) value for the at least one block coded using the IPCM coding mode; and

means for performing deblocking filtering on one or more of the plurality of blocks of video data based on the IPCM coding mode and the assigned non-zero QP value for the at least one block.

22. The device of claim 21, wherein the means for performing the deblocking filtering on the one or more of the plurality of blocks of video data IPCM coding mode and the assigned non-zero QP value comprises:

means for, performing the deblocking filtering on the at least one block based on the assigned non-zero QP value.

23. The device of claim 22, wherein the means for performing the deblocking filtering on each of the at least one block based on the assigned non-zero QP value comprises one or more of:

means for selecting a filter for the deblocking filtering based on the assigned non-zero QP value; and

means for determining a filter strength for the deblocking filtering based on the assigned non-zero QP value.

24. The device of any of claims 21-23, wherein the means for assigning the non-zero QP value for the at least one block comprises means for determining the assigned non-zero QP value based on one or more of the following:

a signaled QP value for the at least one block, wherein the signaled QP value indicates the assigned non-zero QP value;

a predicted QP value for the at least one block; and

a signaled delta QP value for the at least one block, wherein the delta QP value represents a difference between the assigned non-zero QP value and the predicted QP value.

25. The device of claim any of claims 21, wherein the means for assigning the non-zero QP value for the at least one block comprises:

means for, when a size of the at least one block is smaller than a minimum coding unit quantization group size, setting at least one group QP value for a quantization group that includes the at least one block as the assigned non-zero QP value, wherein the quantization group also includes one or more blocks of video data coded using a lossy coding mode; and

means for, when the size of the at least one block is greater than or equal to the minimum coding unit quantization group size, setting a QP value for a neighboring block of the plurality of blocks of video data, the neighboring block comprising one or more of being located adjacent to the at least one block and being previously coded, as the assigned non-zero QP value.

26. The device of claim any of claims 21, wherein the means for assigning the non-zero QP value for the at least one block comprises:

means for, when a size of the at least one block is smaller than a minimum coding unit quantization group size, setting a QP value for a neighboring block of the plurality of blocks of video data, the neighboring block comprising one or more of a block located adjacent to the at least one block and a previously coded block, as the assigned non-zero QP value.

27. The device of any of claims 21-23, wherein coding comprises decoding, and wherein

the means for decoding the at least one block comprises means for receiving one of residual un-quantized video data and reconstructed video data of the at least one block in a received bitstream, and

the means for assigning the non-zero QP value for the at least one block comprises one of means for receiving the assigned non-zero QP value in the received bitstream, and means for receiving a delta QP value for the at least one block in the received bitstream, the delta QP value representing a difference between the assigned non-zero QP value and a predicted QP value for the at least one block, and determining the assigned non-zero QP value based on the delta QP value and the predicted QP value,

the device further comprising means for receiving one or more syntax elements in the received bitstream, the one or more syntax elements indicating that the deblocking filtering is enabled for the one or more of the plurality of blocks of video data.

28. The device of any of claims 21-23, wherein coding comprises encoding, and wherein

the means for encoding the at least one block comprises means for signaling one of residual un-quantized video data and reconstructed video data of the at least one block in a bitstream, and

the means for assigning the non-zero QP value for the at least one block comprises one of means for signaling the assigned non-zero QP value in the bitstream, and means for signaling a delta QP value for the at least one block in the bitstream, the delta QP value representing a difference between the assigned non-zero QP value and a predicted QP value for the at least one block,

the device further comprising means for signaling one or more syntax elements in the bitstream, the one or more syntax elements indicating that the deblocking filtering is enabled for the one or more of the plurality of blocks of video data.

29. A computer-readable storage medium storing instructions that, when executed, cause one or more processors to code video data, wherein the instructions cause the one or more processors to:

code a plurality of blocks of video data, including coding at least one block of the plurality of blocks of video data using an intra pulse code modulation (IPCM) coding mode;

assign a non-zero quantization parameter (QP) value for the at least one block coded using the IPCM coding mode; and

perform deblocking filtering on one or more of the plurality of blocks of video data based on the IPCM coding mode and the assigned non-zero QP value for the at least one block.

30. The computer-readable storage medium of claim 29, wherein the instructions that cause the one or more processors to perform the deblocking filtering on the one or more of the plurality of blocks of video data based on the IPCM coding mode and the assigned non-zero QP value comprise instructions that cause the one or more processors to:

perform the deblocking filtering on the at least one block based on the assigned non-zero QP value.

31. The computer-readable storage medium of claim 30, wherein the instructions that cause the one or more processors to perform the deblocking filtering on the at least one block based on the assigned non-zero QP value comprise instructions that cause the one or more processors to perform one or more of:

select a filter for the deblocking filtering based on the assigned non-zero QP value; and

determine a filter strength for the deblocking filtering based on the assigned non-zero QP value.

32. The computer-readable storage medium of any of claims 29 or 30, wherein the instructions that cause the one or more processors to assign the non-zero QP value for the at least one block comprise instructions that cause the one or more processors to

determine the assigned non-zero QP value based on one or more of the following:

a signaled QP value for the at least one block, wherein the signaled QP value indicates the assigned non-zero QP value;

a predicted QP value for the at least one block; and

a signaled delta QP value for the at least one block, wherein the delta QP value represents a difference between the assigned non-zero QP value and the predicted QP value.

33. The computer-readable storage medium of any of claims 29 or 30, wherein the coding mode used to code the at least one block comprises the IPCM coding mode, and wherein the instructions that cause the one or more processors to assign the non-zero QP value for the at least one block comprise instructions that cause the one or more processors to:

when a size of the at least one block is smaller than a minimum coding unit quantization group size, set at least one group QP value for a quantization group that includes the at least one block as the assigned non-zero QP value, wherein the quantization group also includes one or more blocks of video data coded using a lossy coding mode; and

when the size of the at least one block is greater than or equal to the minimum coding unit quantization group size, set a QP value for a neighboring block of the plurality of blocks of video data, the neighboring block comprising one or more of being located adjacent to the at least one block and being previously coded, as the assigned non-zero QP value.

34. The computer-readable storage medium of any of claims 29 or 30, wherein the instructions that cause the one or more processors to assign the non-zero QP value for the at least one block comprise instructions that cause the one or more processors to:

when a size of the at least one block is smaller than a minimum coding unit quantization group size, set a QP value for a neighboring block of the plurality of blocks of video data, the neighboring block comprising one or more of a block located adjacent to the at least one block and a previously coded block, as the assigned non-zero QP value.

35. The computer-readable storage medium of any of claims 29-31, wherein coding comprises decoding, and wherein

the instructions that cause the one or more processors to decode the at least one block comprise instructions that cause the one or more processors to receive one of residual un-quantized video data and reconstructed video data of the at least one block in a received bitstream, and

the instructions that cause the one or more processors to assign the non-zero QP value for the at least one block comprise one of instructions that cause the one or more processors to receive the assigned non-zero QP value in the received bitstream, and instructions that cause the one or more processors to receive a delta QP value for the at least one block in the received bitstream, the delta QP value representing a difference between the assigned non-zero QP value and a predicted QP value for the at least one block, and determine the assigned non-zero QP value based on the delta QP value and the predicted QP value,

the computer-readable storage medium further comprising instructions that cause the one or more processors to receive one or more syntax elements in the received bitstream, the one or more syntax elements indicating that the deblocking filtering is enabled for the one or more of the plurality of blocks of video data.

36. The computer-readable storage medium of any of claims 29-31, wherein coding comprises encoding, and wherein

the instructions that cause the one or more processors to encode the at least one block comprise instructions that cause the one or more processors to signal one of residual un-quantized video data and reconstructed video data of the at least one block in a bitstream, and

the instructions that cause the one or more processors to assign the non-zero QP value for the at least one block comprise one of instructions that cause the one or more processors to signal the assigned non-zero QP value in the bitstream, and instructions that cause the one or more processors to signal a delta QP value for the at least one block in the bitstream, the delta QP value representing a difference between the assigned non-zero QP value and a predicted QP value for the at least one block,

the computer-readable storage medium further comprising instructions that cause the one or more processors to signal one or more syntax elements in the bitstream, the one or more syntax elements indicating that the deblocking filtering is enabled for the one or more of the plurality of blocks of video data.

37. A method of coding video data comprising:

coding a plurality of blocks of video data, wherein at least one block of the plurality of blocks of video data is coded using an intra pulse code modulation (IPCM) coding mode;

assigning a non-zero quantization parameter (QP) value for the at least one block; and

performing deblocking filtering on one or more of the plurality of blocks of video data based on the assigned non-zero QP value for the at least one block.

38. A method of coding video data comprising:

coding a plurality of blocks of video data, wherein at least one block of the plurality of blocks of video data is coded using a lossless coding mode that uses prediction;

assigning a non-zero quantization parameter (QP) value for the at least one block;

performing deblocking filtering on one or more of the plurality of blocks of video data, other than the at least one block, based on the assigned non-zero QP value for the at least one block; and

avoiding performing deblocking filtering on the at least one block.

39. A method of decoding video data, comprising:

decoding a plurality of blocks of video data using intra pulse code modulation (IPCM) coding mode;

assigning a non-zero quantization parameter (QP) value for at least one block of the plurality of blocks coded using the IPCM coding mode, wherein assigning the non-zero QP value for the at least one block comprises:

when a size of the at least one block is smaller than a minimum coding

unit quantization group size, setting at least one group QP value for a quantization group that includes the at least one block as the assigned non-zero QP value, wherein the quantization group also includes one or more blocks of video data coded using a lossy coding mode; and

when the size of the at least one block is greater than or equal to the minimum coding unit quantization group size, setting a QP value for a neighboring block of the plurality of blocks of video data, the neighboring block comprising one or more of being located adjacent to the at least one block and being previously coded as the assigned non-zero QP value; and

performing deblocking filtering on one or more of the plurality of blocks of video data based on the IPCM coding mode and the assigned non-zero QP value for the at least one block.

40. A method of decoding video data comprising:

decoding a plurality of blocks of video data, wherein at least a first block of the plurality of blocks of video data is coded using a lossless coding mode that uses prediction, and wherein at least a second block of the plurality of blocks of video data is coded using a lossy coding mode;

setting one of a non-zero quantization parameter (QP) value and a delta QP value for the second block as an assigned non-zero QP value for the first block coded using the lossless coding mode, wherein the delta QP value represents a difference between the non-zero QP value and a predicted QP value for the second block; and

performing deblocking filtering on the second block of video data based on the lossless coding mode and the assigned non-zero QP value for the second block.

41. The method of claim 38, wherein performing the deblocking filtering on the one or more of the plurality of blocks of video data based on the lossless coding mode and the assigned non-zero QP value comprises:

performing the deblocking filtering on an adjacent block of the plurality of blocks of video data, the adjacent block located adjacent to the at least one block and coded using a lossy coding mode, based on the assigned non-zero QP value.

42. The method of claim 41, wherein performing the deblocking filtering on each of the at least one block and the adjacent block based on the assigned non-zero QP value comprises selecting a filter for the deblocking filtering based on the assigned non-zero QP value.

43. The method of claim 41, wherein performing the deblocking filtering on each of the at least one block and the adjacent block based on the assigned non-zero QP value comprises determining a filter strength for the deblocking filtering based on the assigned non-zero QP value.

44. The method of any of claims 41, further comprising, prior to performing the deblocking filtering on the one or more of the plurality of blocks of video data based on the coding mode used to code the at least one block and the assigned non-zero QP value, enabling the deblocking filtering for the one or more of the plurality of blocks of video data.

45. The method of claim 41, further comprising disabling deblocking filtering for the at least one block, including not performing the deblocking filtering for internal boundary edges of the at least one block.

46. The method of any of claims 41-45, wherein assigning the non-zero QP value for the at least one block comprises determining the assigned non-zero QP value based on one or more of the following:

a signaled QP value for the at least one block, wherein the signaled QP value indicates the assigned non-zero QP value;

a predicted QP value for the at least one block; and

a signaled delta QP value for the at least one block, wherein the delta QP value represents a difference between the assigned non-zero QP value and the predicted QP value.

47. The method of any of claims 41-45, wherein assigning the non-zero QP value for the at least one block comprises setting one of a QP value and a delta QP value for

a lossy block of the plurality of blocks of video data as the assigned non-zero QP value, wherein the delta QP value represents a difference between the QP value and a predicted QP value for the lossy block, the lossy block comprising a block coded using a lossy coding mode.

48. The method of any of claims 41-45, wherein assigning the non-zero QP value for the at least one block comprises setting a constant value as the assigned non-zero QP value.

49. The method of any of claims 41-45, wherein coding comprises decoding, and wherein

decoding the at least one block comprises receiving one of residual un-quantized video data and reconstructed video data of the at least one block in a received bitstream, and

assigning the non-zero QP value for the at least one block comprises one of receiving the assigned non-zero QP value in the received bitstream, and receiving a delta QP value for the at least one block in the received bitstream, the delta QP value representing a difference between the assigned non-zero QP value and a predicted QP value for the at least one block, and determining the assigned non-zero QP value based on the delta QP value and the predicted QP value,

the method further comprising receiving one or more syntax elements in the received bitstream, the one or more syntax elements indicating that the deblocking filtering is enabled for the one or more of the plurality of blocks of video data.

50. The method of claim 49, wherein the one or more syntax elements comprise a first one or more syntax elements, the method further comprising receiving a second one or more syntax elements in the received bitstream, the second one or more syntax elements indicating that the deblocking filtering is disabled for the at least one block.

51. The method of any of claims 41-45, wherein coding comprises encoding, and wherein

encoding the at least one block comprises signaling one of residual un-quantized video data and reconstructed video data of the at least one block in a bitstream, and

assigning the non-zero QP value for the at least one block comprises one of signaling the assigned non-zero QP value in the bitstream, and signaling a delta QP value for the at least one block in the bitstream, the delta QP value representing a difference between the assigned non-zero QP value and a predicted QP value for the at least one block,

the method further comprising signaling one or more syntax elements in the bitstream, the one or more syntax elements indicating that the deblocking filtering is enabled for the one or more of the plurality of blocks of video data.

52. The method of claim 51, wherein the one or more syntax elements comprise a first one or more syntax elements, the method further comprising signaling a second one or more syntax elements in the bitstream, the second one or more syntax elements indicating that the deblocking filtering is disabled for the at least one block.

53. An apparatus configured to code video data, the apparatus comprising a video coder configured to:

code a plurality of blocks of video data, wherein the video coder is configured to code at least one block of the plurality of blocks of video data using a lossless coding mode that uses prediction;

assign a non-zero quantization parameter (QP) value for the at least one block coded using the coding mode; and

perform deblocking filtering on one or more of the plurality of blocks of video data based on the coding mode used to code the at least one block and the assigned non-zero QP value for the at least one block.

54. The apparatus of claim 53, wherein to perform the deblocking filtering on the one or more of the plurality of blocks of video data based on the coding mode used to

code the at least one block and the assigned non-zero QP value, the video coder is configured to:

perform the deblocking filtering on an adjacent block of the plurality of blocks of video data, the adjacent block located adjacent to the at least one block and coded using a lossy coding mode, based on the assigned non-zero QP value.

55. The apparatus of claim 54, wherein to perform the deblocking filtering on each of the at least one block and the adjacent block based on the assigned non-zero QP value, the video coder is configured to perform one or more of:

select a filter for the deblocking filtering based on the assigned non-zero QP value; and

determine a filter strength for the deblocking filtering based on the assigned non-zero QP value.

56. The apparatus of any of claims 53, wherein the video coder is further configured to, prior to performing the deblocking filtering on the one or more of the plurality of blocks of video data based on the coding mode used to code the at least one block and the assigned non-zero QP value, enable the deblocking filtering for the one or more of the plurality of blocks of video data.

57. The apparatus of claim 53, wherein the video coder is further configured to disable deblocking filtering for the at least one block, including the video coder not performing the deblocking filtering for internal boundary edges of the at least one block.

58. The apparatus of any of claims 53-57, wherein to assign the non-zero QP value for the at least one block, the video coder is configured to determine the assigned non-zero QP value based on one or more of the following:

a signaled QP value for the at least one block, wherein the signaled QP value indicates the assigned non-zero QP value;

a predicted QP value for the at least one block; and

a signaled delta QP value for the at least one block, wherein the delta QP value represents a difference between the assigned non-zero QP value and the predicted QP value.

59. The apparatus of any of claims 53-57, wherein to assign the non-zero QP value for the at least one block, the video coder is configured to set one of a QP value and a delta QP value for a lossy block of the plurality of blocks of video data as the assigned non-zero QP value, wherein the delta QP value represents a difference between the QP value and a predicted QP value for the lossy block, the lossy block comprising a block coded using a lossy coding mode.

60. The apparatus of any of claims 53-57, wherein to assign the non-zero QP value for the at least one block, the video coder is configured to set a constant value as the assigned non-zero QP value.

61. The apparatus of any of claims 53-57, wherein to code the plurality of blocks of video data including the at least one block, the video coder is configured to decode the plurality of blocks of video including the at least one block, and wherein

to decode the at least one block, the video coder is configured to receive one of residual un-quantized video data and reconstructed video data of the at least one block in a received bitstream, and

to assign the non-zero QP value for the at least one block, the video coder is configured to perform one of receiving the assigned non-zero QP value in the received bitstream, and receiving a delta QP value for the at least one block in the received bitstream, the delta QP value representing a difference between the assigned non-zero QP value and a predicted QP value for the at least one block, and determining the assigned non-zero QP value based on the delta QP value and the predicted QP value,

wherein the video coder is further configured to receive one or more syntax elements in the received bitstream, the one or more syntax elements indicating that the deblocking filtering is enabled for the one or more of the plurality of blocks of video data.

62. The apparatus of claim 61, wherein the one or more syntax elements comprise a first one or more syntax elements, and wherein the video coder is further configured to receive a second one or more syntax elements in the received bitstream, the second one or more syntax elements indicating that the deblocking filtering is disabled for the at least one block.

63. The apparatus of any of claims 53-57, wherein to code the plurality of blocks of video data including the at least one block, the video coder is configured to encode the plurality of blocks of video including the at least one block, and wherein

to encode the at least one block, the video coder is configured to signal one of residual un-quantized video data and reconstructed video data of the at least one block in a bitstream, and

to assign the non-zero QP value for the at least one block, the video coder is configured to perform one of signaling the assigned non-zero QP value in the bitstream, and signaling a delta QP value for the at least one block in the bitstream, the delta QP value representing a difference between the assigned non-zero QP value and a predicted QP value for the at least one block,

wherein the video coder is further configured to signal one or more syntax elements in the bitstream, the one or more syntax elements indicating that the deblocking filtering is enabled for the one or more of the plurality of blocks of video data.

64. The apparatus of claim 63, wherein the one or more syntax elements comprise a first one or more syntax elements, and wherein the video coder is further configured to signal a second one or more syntax elements in the bitstream, the second one or more syntax elements indicating that the deblocking filtering is disabled for the at least one block.

65. The apparatus of any of claims 53-57, wherein the apparatus comprises at least one of:

an integrated circuit;

a microprocessor; and

a wireless communication device that includes the video coder.

66. A device configured to code video data, the device comprising:

means for coding a plurality of blocks of video data, including means for coding at least one block of the plurality of blocks of video data using a lossless coding mode that uses prediction;

means for assigning a non-zero quantization parameter (QP) value for the at least one block coded using the coding mode; and

means for performing deblocking filtering on one or more of the plurality of blocks of video data based on the coding mode used to code the at least one block and the assigned non-zero QP value for the at least one block.

67. The device of claim 66, wherein the means for performing the deblocking filtering on the one or more of the plurality of blocks of video data based on the coding mode used to code the at least one block and the assigned non-zero QP value comprises:

means for performing the deblocking filtering on an adjacent block of the plurality of blocks of video data, the adjacent block located adjacent to the at least one block and coded using a lossy coding mode, based on the assigned non-zero QP value.

68. The device of claim 67, wherein the means for performing the deblocking filtering on each of the at least one block and the adjacent block based on the assigned non-zero QP value comprises one or more of:

means for selecting a filter for the deblocking filtering based on the assigned non-zero QP value; and

means for determining a filter strength for the deblocking filtering based on the assigned non-zero QP value.

69. The device of any of claims 66-68, wherein the means for assigning the non-zero QP value for the at least one block comprises means for determining the assigned non-zero QP value based on one or more of the following:

a signaled QP value for the at least one block, wherein the signaled QP value indicates the assigned non-zero QP value;

a predicted QP value for the at least one block; and

a signaled delta QP value for the at least one block, wherein the delta QP value represents a difference between the assigned non-zero QP value and the predicted QP value.

70. The device any of claims 66-68, wherein the means for assigning the non-zero QP value for the at least one block comprises means for setting one of a QP value and a delta QP value for a lossy block of the plurality of blocks of video data as the assigned non-zero QP value, wherein the delta QP value represents a difference between the QP value and a predicted QP value for the lossy block, the lossy block comprising a block coded using a lossy coding mode.

71. The device of any of claims 66-68, wherein the means for assigning the non-zero QP value for the at least one block comprises means for setting a constant value as the assigned non-zero QP value.

72. The device of any of claims 66-68, wherein coding comprises decoding, and wherein

the means for decoding the at least one block comprises means for receiving one of residual un-quantized video data and reconstructed video data of the at least one block in a received bitstream, and

the means for assigning the non-zero QP value for the at least one block comprises one of means for receiving the assigned non-zero QP value in the received bitstream, and means for receiving a delta QP value for the at least one block in the received bitstream, the delta QP value representing a difference between the assigned non-zero QP value and a predicted QP value for the at least one block, and

determining the assigned non-zero QP value based on the delta QP value and the predicted QP value,

the device further comprising means for receiving one or more syntax elements in the received bitstream, the one or more syntax elements indicating that the deblocking filtering is enabled for the one or more of the plurality of blocks of video data.

73. The device of any of claims 66-68, wherein coding comprises encoding, and wherein

the means for encoding the at least one block comprises means for signaling one of residual un-quantized video data and reconstructed video data of the at least one block in a bitstream, and

the means for assigning the non-zero QP value for the at least one block comprises one of means for signaling the assigned non-zero QP value in the bitstream, and means for signaling a delta QP value for the at least one block in the bitstream, the delta QP value representing a difference between the assigned non-zero QP value and a predicted QP value for the at least one block,

the device further comprising means for signaling one or more syntax elements in the bitstream, the one or more syntax elements indicating that the deblocking filtering is enabled for the one or more of the plurality of blocks of video data.

74. A computer-readable storage medium storing instructions that, when executed, cause one or more processors to code video data, wherein the instructions cause the one or more processors to:

code a plurality of blocks of video data, including coding at least one block of the plurality of blocks of video data using a lossless coding mode that uses prediction;

assign a non-zero quantization parameter (QP) value for the at least one block coded using the coding mode; and

perform deblocking filtering on one or more of the plurality of blocks of video data based on the coding mode used to code the at least one block and the assigned non-zero QP value for the at least one block.

75. The computer-readable storage medium of claim 74, wherein the instructions that cause the one or more processors to perform the deblocking filtering on the one or more of the plurality of blocks of video data based on the coding mode used to code the at least one block and the assigned non-zero QP value comprise instructions that cause the one or more processors to:

perform the deblocking filtering on an adjacent block of the plurality of blocks of video data, the adjacent block located adjacent to the at least one block and coded using a lossy coding mode, based on the assigned non-zero QP value.

76. The computer-readable storage medium of claim 74 or 75, wherein the instructions that cause the one or more processors to perform the deblocking filtering on each of the at least one block and the adjacent block based on the assigned non-zero QP value comprise instructions that cause the one or more processors to perform one or more of:

select a filter for the deblocking filtering based on the assigned non-zero QP value; and

determine a filter strength for the deblocking filtering based on the assigned non-zero QP value.

77. The computer-readable storage medium of any of claims 74 or 75, wherein the instructions that cause the one or more processors to assign the non-zero QP value for the at least one block comprise instructions that cause the one or more processors to determine the assigned non-zero QP value based on one or more of the following:

a signaled QP value for the at least one block, wherein the signaled QP value indicates the assigned non-zero QP value;

a predicted QP value for the at least one block; and

a signaled delta QP value for the at least one block, wherein the delta QP value represents a difference between the assigned non-zero QP value and the predicted QP value.

78. The computer-readable storage medium of any of claims 74 or 75, wherein the instructions that cause the one or more processors to assign the non-zero QP value for

the at least one block comprise instructions that cause the one or more processors to set one of a QP value and a delta QP value for a lossy block of the plurality of blocks of video data as the assigned non-zero QP value, wherein the delta QP value represents a difference between the QP value and a predicted QP value for the lossy block, the lossy block comprising a block coded using a lossy coding mode.

79. The computer-readable storage medium of any of claims 74 or 75, and wherein the instructions that cause the one or more processors to assign the non-zero QP value for the at least one block comprise instructions that cause the one or more processors to set a constant value as the assigned non-zero QP value.

80. The computer-readable storage medium of any of claims 74 or 75, wherein coding comprises decoding, and wherein

the instructions that cause the one or more processors to decode the at least one block comprise instructions that cause the one or more processors to receive one of residual un-quantized video data and reconstructed video data of the at least one block in a received bitstream, and

the instructions that cause the one or more processors to assign the non-zero QP value for the at least one block comprise one of instructions that cause the one or more processors to receive the assigned non-zero QP value in the received bitstream, and instructions that cause the one or more processors to receive a delta QP value for the at least one block in the received bitstream, the delta QP value representing a difference between the assigned non-zero QP value and a predicted QP value for the at least one block, and determine the assigned non-zero QP value based on the delta QP value and the predicted QP value,

the computer-readable storage medium further comprising instructions that cause the one or more processors to receive one or more syntax elements in the received bitstream, the one or more syntax elements indicating that the deblocking filtering is enabled for the one or more of the plurality of blocks of video data.

81. The computer-readable storage medium of any of claims 74 or 75, wherein coding comprises encoding, and wherein

the instructions that cause the one or more processors to encode the at least one block comprise instructions that cause the one or more processors to signal one of residual un-quantized video data and reconstructed video data of the at least one block in a bitstream, and

the instructions that cause the one or more processors to assign the non-zero QP value for the at least one block comprise one of instructions that cause the one or more processors to signal the assigned non-zero QP value in the bitstream, and instructions that cause the one or more processors to signal a delta QP value for the at least one block in the bitstream, the delta QP value representing a difference between the assigned non-zero QP value and a predicted QP value for the at least one block,

the computer-readable storage medium further comprising instructions that cause the one or more processors to signal one or more syntax elements in the bitstream, the one or more syntax elements indicating that the deblocking filtering is enabled for the one or more of the plurality of blocks of video data.