CLAIMS

1. An audio signal encoding method, comprising:

splitting, by an encoder, spectral coefficients of a current frame of an audio signal into plurality of subbands;

quantizing, by the encoder, energy envelope for each of the plurality of subbands to obtain initial quantized energy envelope for each of the plurality of subbands;

adjusting, by the encoder, quantized energy envelopes of some subbands of the plurality of subbands, wherein the some subbands comprises a subband having a highest frequency in the plurality of subbands and a subband consecutive to the subband having the highest frequency;

performing, by the encoder, bit allocation based on the adjusted quantized energy envelopes of the some subbands and the initial quantized energy envelope of each subband besides the some subbands in the plurality of subbands; and

quantizing, by the encoder, a spectral coefficient of a subband to which at least one bit is allocated after the bit allocation, wherein the quantized spectral coefficient of the subband to which at least one bit is allocated after the bit allocation is used for writing into a bitstream.

2. The audio signal encoding method according to claim 1, wherein the quantized energy envelope of each of the some subbands is adjusted according to a determined adjustment factor for each of the some subbands respectively.

3. The audio signal encoding method according to claim 2, wherein the adjustment factor for each of the some subbands is determined according to a flag indicates signal type of each of the some subbands respectively.

4. The audio signal encoding method according to claim 3, wherein the signal type of each of the some subbands is either harmonic or not harmonic.

5. The audio signal encoding method according to claim 4, wherein the adjustment factor for a particular subband of the some subbands is no less than 1 when the signal type of the particular subband is harmonic.

6. The audio signal encoding method according to claim 3, wherein the adjustment factor

for each of the some subbands is further determined according to reference information of a previous frame adjacent to the current frame.

7. The audio signal encoding method according to claim 1, wherein quantity of the some subbands is two.

8. The audio signal encoding method according to claim 2, wherein the adjustment factor is equal to 1.

9. The audio signal encoding method according to claim 6, wherein the reference information of the previous frame indicates whether two consecutive subbands in the previous frame are allocated with bits.

10. The audio signal encoding method according to claim 9, wherein the two consecutive subbands in the previous frame comprises the subband having a highest frequency in the previous frame.

11. An audio signal encoder, comprising:

a memory; and

a processor coupled to the memory and configured to:

split spectral coefficients of a current frame of an audio signal into plurality of subbands;

quantize energy envelope for each of the plurality of subbands to obtain initial quantized energy envelope for each of the plurality of subbands;

adjust quantized energy envelopes of some subbands of the plurality of subbands, wherein the some subbands comprises a subband having a highest frequency in the plurality of subbands and a subband consecutive to the subband having the highest frequency;

perform bit allocation based on the adjusted quantized energy envelopes of the some subbands and the initial quantized energy envelope of each subband besides the some subbands in the plurality of subbands; and

quantize a spectral coefficient of a subband to which at least one bit is allocated after the bit allocation, wherein the quantized spectral coefficient of the subband to

which at least one bit is allocated after the bit allocation is used for writing into a bitstream.

12. The audio signal encoder according to claim 11, wherein the quantized energy envelope of each of the some subbands is adjusted according to a determined adjustment factor for each of the some subbands respectively.

13. The audio signal encoder according to claim 12, wherein the adjustment factor for each of the some subbands is determined according to a flag indicates signal type of each of the some subbands respectively.

14. The audio signal encoder according to claim 13, wherein the signal type of each of the some subbands is either harmonic or not harmonic.

15. The audio signal encoder according to claim 14, wherein the adjustment factor for a particular subband of the some subbands is no less than 1 when the signal type of the particular subband is harmonic.

16. The audio signal encoder according to claim 13, wherein the adjustment factor for each of the some subbands is further determined according to reference information of a previous frame adjacent to the current frame.

17. The audio signal encoder according to claim 11, wherein quantity of the some subbands is two.

18. The audio signal encoder according to claim 12, wherein the adjustment factor is equal to 1.

19. The audio signal encoder according to claim 16, wherein the reference information of the previous frame indicates whether two consecutive subbands in the previous frame are allocated with bits.

20. The audio signal encoder according to claim 19, wherein the two consecutive subbands in the previous frame comprises a subband having a highest frequency in the previous frame.

21. A non-transitory computer-readable storage medium storing computer instructions, that when executed by one or more processors, cause the one or more processors to perform the steps of:

splitting spectral coefficients of a current frame of an audio signal into plurality of subbands;

quantizing energy envelope for each of the plurality of subbands to obtain initial quantized energy envelope for each of the plurality of subbands;

adjusting quantized energy envelopes of some subbands of the plurality of subbands, wherein the some subbands comprises a subband having a highest frequency in the plurality of subbands and a subband consecutive to the subband having the highest frequency;

performing bit allocation based on the adjusted quantized energy envelopes of the some subbands and the initial quantized energy envelope of each subband besides the some subbands in the plurality of subbands; and

quantizing a spectral coefficient of a subband to which at least one bit is allocated after the bit allocation, wherein the quantized spectral coefficient of the subband to which at least one bit is allocated after the bit allocation is used for writing into a bitstream.

22. The non-transitory computer-readable storage medium according to claim 21, wherein the quantized energy envelope of each of the some subbands is adjusted according to a determined adjustment factor for each of the some subbands respectively.

23. The non-transitory computer-readable storage medium according to claim 22, wherein the adjustment factor for each of the some subbands is determined according to a flag indicates signal type of each of the some subbands respectively.

24. The non-transitory computer-readable storage medium according to claim 23, wherein the signal type of each of the some subbands is either harmonic or not harmonic.

25. The non-transitory computer-readable storage medium according to claim 24, wherein the adjustment factor for a particular subband of the some subbands is no less than 1 when the signal type of the particular subband is harmonic.

26. The non-transitory computer-readable storage medium according to claim 23, wherein

the adjustment factor for each of the some subbands is further determined according to reference information of a previous frame adjacent to the current frame.

27. The non-transitory computer-readable storage medium according to claim 26, wherein the reference information of the previous frame indicates whether two consecutive subbands in the previous frame are allocated with bits.

28. The non-transitory computer-readable storage medium according to claim 27, wherein the two consecutive subbands in the previous frame comprises the subband having a highest frequency in the previous frame.