CLAIMS

1. A method for determining an interpolation factor set by an electronic device, comprising:

determining a value based on a current frame property and a previous frame property;

determining whether the value is outside of a range;

determining an interpolation factor set based on the value and a prediction mode indicator if the value is outside of the range; and

synthesizing a speech signal.

2. The method of claim 1, wherein determining the interpolation factor set is based on a degree to which the value is outside of the range.

3. The method of claim 2, wherein the degree to which the value is outside of the range is determined based on one or more thresholds outside of the range.

4. The method of claim 1, wherein the prediction mode indicator indicates one of two prediction modes.

5. The method of claim 1, wherein the prediction mode indicator indicates one of three or more prediction modes.

6. The method of claim 1, wherein the value is an energy ratio based on a current frame synthesis filter impulse response energy and a previous frame synthesis filter impulse response energy.

7. The method of claim 6, wherein determining whether the value is outside of the range comprises determining whether the energy ratio is less than a threshold.

8. The method of claim 1, wherein the value includes a current frame first reflection coefficient and a previous frame first reflection coefficient.

9. The method of claim 8, wherein determining whether the value is outside of the range comprises determining whether the previous frame first reflection coefficient is greater than a first threshold and the current frame first reflection coefficient is less than a second threshold.

10. The method of claim 1, wherein the interpolation factor set includes two or more interpolation factors.

11. The method of claim 1, further comprising interpolating subframe line spectral frequency (LSF) vectors based on the interpolation factor set.

12. The method of claim 11, wherein interpolating subframe LSF vectors based on the interpolation factor set comprises multiplying a current frame end LSF vector by a first interpolation factor, multiplying a previous frame end LSF vector by a second interpolation factor, and multiplying a current frame mid LSF vector by a difference factor.

13. The method of claim 1, further comprising utilizing a default interpolation factor set if the value is not outside of the range.

14. The method of claim 1, wherein the prediction mode indicator indicates a prediction mode of a current frame.

15. The method of claim 1, wherein the prediction mode indicator indicates a prediction mode of a previous frame.

16. An electronic device for determining an interpolation factor set, comprising:

value determination circuitry that determines a value based on a current frame property and a previous frame property;

interpolation factor set determination circuitry coupled to the value determination circuitry, wherein the interpolation factor set determination circuitry determines whether the value is outside of a range, and determines an

interpolation factor set based on the value and a prediction mode indicator if the value is outside of the range; and

synthesis filter circuitry that synthesizes a speech signal.

17. The electronic device of claim 16, wherein determining the interpolation factor set is based on a degree to which the value is outside of the range.

18. The electronic device of claim 17, wherein the degree to which the value is outside of the range is determined based on one or more thresholds outside of the range.

19. The electronic device of claim 16, wherein the prediction mode indicator indicates one of two prediction modes.

20. The electronic device of claim 16, wherein the prediction mode indicator indicates one of three or more prediction modes.

21. The electronic device of claim 16, wherein the value is an energy ratio based on a current frame synthesis filter impulse response energy and a previous frame synthesis filter impulse response energy.

22. The electronic device of claim 21, wherein determining whether the value is outside of the range comprises determining whether the energy ratio is less than a threshold.

23. The electronic device of claim 16, wherein the value includes a current frame first reflection coefficient and a previous frame first reflection coefficient.

24. The electronic device of claim 23, wherein determining whether the value is outside of the range comprises determining whether the previous frame first reflection coefficient is greater than a first threshold and the current frame first reflection coefficient is less than a second threshold.

25. The electronic device of claim 16, wherein the interpolation factor set includes two or more interpolation factors.

26. The electronic device of claim 16, further comprising interpolation circuitry coupled to the interpolation factor set determination circuitry that interpolates subframe line spectral frequency (LSF) vectors based on the interpolation factor set.

27. The electronic device of claim 26, wherein interpolating subframe LSF vectors based on the interpolation factor set comprises multiplying a current frame end LSF vector by a first interpolation factor, multiplying a previous frame end LSF vector by a second interpolation factor, and multiplying a current frame mid LSF vector by a difference factor.

28. The electronic device of claim 16, wherein the interpolation factor set determination circuitry utilizes a default interpolation factor set if the value is not outside of the range.

29. The electronic device of claim 16, wherein the prediction mode indicator indicates a prediction mode of a current frame.

30. The electronic device of claim 16, wherein the prediction mode indicator indicates a prediction mode of a previous frame.

31. A computer-program product for determining an interpolation factor set, comprising a non-transitory tangible computer-readable medium having instructions thereon, the instructions comprising:

code for causing an electronic device to determine a value based on a current frame property and a previous frame property;

code for causing the electronic device to determine whether the value is outside of a range;

code for causing the electronic device to determine an interpolation factor set based on the value and a prediction mode indicator if the value is outside of the range; and

code for causing the electronic device to synthesize a speech signal.

32. The computer-program product of claim 31, wherein determining the interpolation factor set is based on a degree to which the value is outside of the range.

33. The computer-program product of claim 31, wherein the prediction mode indicator indicates one of two prediction modes.

34. The computer-program product of claim 31, wherein the prediction mode indicator indicates one of three or more prediction modes.

35. The computer-program product of claim 31, wherein the value is an energy ratio based on a current frame synthesis filter impulse response energy and a previous frame synthesis filter impulse response energy.

36. The computer-program product of claim 31, wherein the value includes a current frame first reflection coefficient and a previous frame first reflection coefficient.

37. The computer-program product of claim 31, wherein the interpolation factor set includes two or more interpolation factors.

38. The computer-program product of claim 31, further comprising code for causing the electronic device to interpolate subframe line spectral frequency (LSF) vectors based on the interpolation factor set.

39. The computer-program product of claim 31, further comprising code for causing the electronic device to utilize a default interpolation factor set if the value is not outside of the range.

40. The computer-program product of claim 31, wherein the prediction mode indicator indicates a prediction mode of a current frame.

41. An apparatus for determining an interpolation factor set, comprising:

means for determining a value based on a current frame property and a previous frame property;

means for determining whether the value is outside of a range;

means for determining an interpolation factor set based on the value and a prediction mode indicator if the value is outside of the range; and

means for synthesizing a speech signal.

42. The apparatus of claim 41, wherein determining the interpolation factor set is based on a degree to which the value is outside of the range.

43. The apparatus of claim 41, wherein the prediction mode indicator indicates one of two prediction modes.

44. The apparatus of claim 41, wherein the prediction mode indicator indicates one of three or more prediction modes.

45. The apparatus of claim 41, wherein the value is an energy ratio based on a current frame synthesis filter impulse response energy and a previous frame synthesis filter impulse response energy.

46. The apparatus of claim 41, wherein the value includes a current frame first reflection coefficient and a previous frame first reflection coefficient.

47. The apparatus of claim 41, wherein the interpolation factor set includes two or more interpolation factors.

48. The apparatus of claim 41, further comprising means for interpolating subframe line spectral frequency (LSF) vectors based on the interpolation factor set.

49. The apparatus of claim 41, further comprising means for utilizing a default interpolation factor set if the value is not outside of the range.

50. The apparatus of claim 41, wherein the prediction mode indicator indicates a prediction mode of a current frame.

CLAIMS

1. A method for determining an interpolation factor set by an electronic device, comprising:

determining a value based on a current frame property and a previous frame property;

determining whether the value is outside of a range;

determining an interpolation factor set based on a determination that the value is outside of the range and a prediction mode indicator;

interpolating subframe line spectral frequency (LSF) vectors based on the interpolation factor set to produce interpolated LSF vectors; and

synthesizing a speech signal based on the interpolated LSF vectors.

2. The method of claim **1**, wherein the prediction mode indicator indicates one of three or more prediction modes.

3. The method of claim **1**, wherein the value is an energy ratio based on a current frame synthesis filter impulse response energy and a previous frame synthesis filter impulse response energy.

4. The method of claim **3**, wherein determining whether the value is outside of the range comprises determining whether the energy ratio is less than a threshold.

5. The method of claim **1**, wherein the interpolation factor set includes two or more interpolation factors.

6. The method of claim **1**, further comprising transforming the interpolated LSF vectors into coefficients.

7. The method of claim **1**, wherein interpolating subframe LSF vectors based on the interpolation factor set comprises multiplying a current frame end LSF vector by a first interpolation factor, multiplying a previous frame end LSF vector by a second interpolation factor, and multiplying a current frame mid LSF vector by a difference factor.

8. The method of claim **1**, further comprising utilizing a default interpolation factor set in response to a determination that the value is not outside of the range.

9. The method of claim **1**, wherein the prediction mode indicator indicates a prediction mode of a current frame.

10. An electronic device for determining an interpolation factor set, comprising:

a processor configured to:

determine a value based on a current frame property and a previous frame property;

determine whether the value is outside of a range;

determine an interpolation factor set based on a determination that the value is outside of the range and a prediction mode indicator;

interpolate subframe line spectral frequency (LSF) vectors based on the interpolation factor set to produce interpolated LSF vectors; and

synthesize a speech signal based on the interpolated LSF vectors.

11. The electronic device of claim **10**, wherein the prediction mode indicator indicates one of three or more prediction modes.

12. The electronic device of claim **10**, wherein the value is an energy ratio based on a current frame synthesis filter impulse response energy and a previous frame synthesis filter impulse response energy.

13. The electronic device of claim **12**, wherein the processor is configured to determine whether the energy ratio is less than a threshold.

14. The electronic device of claim **10**, wherein the interpolation factor set includes two or more interpolation factors.

15. The electronic device of claim **10**, wherein the processor is configured to transform the interpolated LSF vectors into coefficients.

16. The electronic device of claim **10**, wherein the processor is configured to multiply a current frame end LSF vector by a first interpolation factor, to multiply a previous frame end LSF vector by a second interpolation factor, and to multiply a current frame mid LSF vector by a difference factor.

17. The electronic device of claim **10**, wherein the processor is configured to utilize a default interpolation factor set in response to a determination that the value is not outside of the range.

18. The electronic device of claim **10**, wherein the prediction mode indicator indicates a prediction mode of a current frame.

19. A computer-program product for determining an interpolation factor set, comprising a non-transitory tangible computer-readable medium having instructions thereon, the instructions comprising:

code for causing an electronic device to determine a value based on a current frame property and a previous frame property;

code for causing the electronic device to determine whether the value is outside of a range;

code for causing the electronic device to determine an interpolation factor set based on a determination that the value is outside of the range and a prediction mode indicator;

code for causing the electronic device to interpolate sub-frame line spectral frequency (LSF) vectors based on the interpolation factor set to produce interpolated LSF vectors; and

code for causing the electronic device to synthesize a speech signal based on the interpolated LSF vectors.

20. The computer-program product of claim **19**, wherein the prediction mode indicator indicates one of three or more prediction modes.

21. The computer-program product of claim **19**, wherein the value is an energy ratio based on a current frame synthesis filter impulse response energy and a previous frame synthesis filter impulse response energy.

22. The computer-program product of claim **19**, wherein the interpolation factor set includes two or more interpolation factors.

23. The computer-program product of claim **19**, further comprising code for causing the electronic device to transform the interpolated LSF vectors into coefficients.

24. The computer-program product of claim **19**, further comprising code for causing the electronic device to utilize a default interpolation factor set in response to a determination that the value is not outside of the range.

25. The computer-program product of claim **19**, wherein the prediction mode indicator indicates a prediction mode of a current frame.

26. An apparatus for determining an interpolation factor set, comprising:

means for determining a value based on a current frame property and a previous frame property;

means for determining whether the value is outside of a range;

means for determining an interpolation factor set based on a determination that the value is outside of the range and a prediction mode indicator;

means for interpolating subframe line spectral frequency (LSF) vectors based on the interpolation factor set to produce interpolated LSF vectors; and

means for synthesizing a speech signal based on the interpolated LSF vectors.

27. The apparatus of claim **26**, wherein the prediction mode indicator indicates one of three or more prediction modes.

28. The apparatus of claim **26**, wherein the value is an energy ratio based on a current frame synthesis filter impulse response energy and a previous frame synthesis filter impulse response energy.

29. The apparatus of claim **26**, wherein the interpolation factor set includes two or more interpolation factors.

30. The apparatus of claim **26**, further comprising means for transforming the interpolated LSF vectors into coefficients.

31. The apparatus of claim **26**, further comprising means for utilizing a default interpolation factor set in response to a determination that the value is not outside of the range.

32. The apparatus of claim **26**, wherein the prediction mode indicator indicates a prediction mode of a current frame.