

CLAIMS

We claim:

1. A system comprising:
an electrical signal wherein the electrical signal is driven by a real-time progressive polynomial spline evaluation that achieves an up-sampling by a power-of-two factor using a linear combination;
wherein dither is applied to the linear combination.
2. The system of claim 1, wherein the polynomial spline has a plurality of intervals, and wherein at least one of the plurality of intervals is a base frequency period.
3. The system of claim 1, wherein the polynomial spline has a plurality of intervals, and wherein at least one of the plurality of intervals is a power-of-two count of base frequency periods.
4. The system of claim 1, wherein the polynomial spline has a plurality of intervals, and wherein at least one of the plurality of intervals is a power-of-two fraction of a base frequency period.
5. The system of claim 1, wherein the electrical signal has a phase angle, and wherein the phase angle is modified by a rolling counter incremented by a value driven by an external environmental monitoring sensor.
6. The system of claim 1, wherein the electrical signal has a phase angle, and wherein the phase angle is modified by a rolling counter decremented by a value driven by an external environmental monitoring sensor.
7. A system comprising:
an electrical signal wherein an instantaneous phase angle of the electrical signal is substantially calculated by a real-time progressive polynomial spline evaluation that achieves an up-sampling by a power-of-two factor using a linear combination of counters;
wherein dither is applied to the linear combination of counters.

8. The system of claim 7, wherein the polynomial spline has a plurality of intervals, and wherein at least one of the plurality of intervals is a base frequency period.
9. The system of claim 7, wherein the polynomial spline has a plurality of intervals, and wherein at least one of the plurality of intervals is a power-of-two count of base frequency periods.
10. The system of claim 7, wherein the polynomial spline has a plurality of intervals, and wherein at least one of the plurality of intervals is a power-of-two fraction of a base frequency period.
11. The system of claim 7, wherein the electrical signal has a phase angle, and wherein the phase angle is modified by a rolling counter incremented by a value driven by an external environmental monitoring sensor.
12. The system of claim 7, wherein the electrical signal has a phase angle, and wherein the phase angle is modified by a rolling counter decremented by a value driven by an external environmental monitoring sensor.
13. A system comprising:
a digital electrical signal having a state, wherein the state is calculated by comparing a difference between a current position in a base frequency cycle and an instantaneous phase angle to a proportion of cycle duty that would be present at the base frequency cycle;
wherein dither is applied to the base frequency cycle.
14. The system of claim 13, further comprising a polynomial spline having a plurality of intervals, and wherein at least one of the plurality of intervals is a base frequency period.
15. The system of claim 13, further comprising a polynomial spline having a plurality of intervals, and wherein at least one of the plurality of intervals is a power-of-two count of base frequency periods.

16. The system of claim 13, further comprising a polynomial spline having a plurality of intervals, and wherein at least one of the plurality of intervals is a power-of-two fraction of a base frequency period.

17. The system of claim 13, wherein the electrical signal has a phase angle, and wherein the phase angle is modified by a rolling counter incremented by a value driven by an external environmental monitoring sensor.

18. The system of claim 13, wherein the electrical signal has a phase angle, and wherein the phase angle is modified by a rolling counter decremented by a value driven by an external environmental monitoring sensor.