What is claimed is:

1. An infrared detector comprising:

a substrate comprising a pyroelectric material;

a plurality of detector elements positioned on the substrate;

a first set of detector elements of the plurality of detector elements spaced a pitch distance apart, the first set of detector elements including a first detector element and all detector elements of the plurality of detector elements that are serially coupled to the first detector element; and

a second set of detector elements of the plurality of detector elements spaced about the pitch distance apart, the second set of detector elements including a second detector element, distinct from the first detector element, and all detector elements of the plurality of detector elements that are serially coupled to the second detector element;

wherein the pitch distance is measured between centers of directly connected detector elements of the first set of detector elements; and

the second set of detector elements are positioned with a non-quadrature offset from the first set of detector elements in a direction parallel to a direction of the pitch distance.

2. The infrared detector of claim 1, wherein the first set of detector elements consists of two serially coupled detector elements, and the second set of detector elements consists of two serially coupled detector elements.

3. The infrared detector of claim 1, wherein the first set of detector elements comprises a first row of detector elements, and the second set of detector elements comprises a second row of detector elements that is substantially non-overlapping with the first row.

4. The infrared detector of claim 1, wherein the non-quadrature offset is between 5% of the pitch distance and 45% of the pitch distance or between 55% of the pitch distance and 95% of the pitch distance.

5. The infrared detector of claim 1, wherein the non-quadrature offset is about one third or about two thirds of the pitch distance.

6. The infrared detector of claim 1, further comprising:

a first output coupled to the first set of detector elements; and

a second output coupled to the second set of detector elements.

7. The infrared detector of claim 6, further comprising a ground terminal;

wherein the first set of detector elements consists of the first detector element and a third detector element;

the second set of detector elements consists of the second detector element and a fourth detector element;

said first, second, third and fourth detector elements each comprise a capacitor using the substrate as a dielectric;

the first output is connected to a first terminal of the first detector element;

a second terminal of the first detector element is connected to a first terminal of the third detector element;

a second terminal of the third detector element is connected to the ground terminal;

the second output is connected to a first terminal of the second detector element;

a second terminal of the second detector element is connected to a first terminal of the fourth detector element; and

a second terminal of the fourth detector element is connected to the ground terminal.

8. The infrared detector of claim 1, further comprising:

a package, wherein the substrate is mounted on the package and positioned to allow external electromagnetic energy to affect the substrate;

at least one terminal accessible from outside of the package; and

circuitry, mounted in the package and coupled to the at least one terminal, the first set of detector elements, and the second set of detector elements, to detect a first pyroelectric effect on the first set of detector elements and a second pyroelectric effect on the second set of detector elements, and to provide information about the first pyroelectric effect and the second pyroelectric effect at the at least one terminal.

9. The infrared detector of claim 8, wherein the circuitry comprises at least one analog-to-digital converter; and

wherein the information about the first pyroelectric effect and the second pyroelectric effect at the at least one terminal comprises digital data representing at least one voltage waveform.

10. The infrared detector of claim 8, wherein the circuitry comprises a first transistor buffer coupled to the first set of detector elements and a second transistor buffer coupled to the second set of detector elements; and

wherein the at least one terminal comprises a first output terminal, a second output terminal, a power terminal, and a ground terminal; and

the information about the first pyroelectric effect comprises a first analog voltage waveform at the first output terminal, and the information about the second pyroelectric effect comprises a second analog voltage waveform at the second output terminal.

11. An infrared detector comprising:

a substrate comprising a pyroelectric material;

a plurality of detector elements positioned on the substrate;

a first row of detector elements of the plurality of detector elements and spaced a pitch distance apart, the first row of detector elements including a first detector element and all detector elements of the plurality of detector elements that are serially coupled to the first detector element; and

a second row of detector elements of the plurality of detector elements and spaced about the pitch distance apart, the second row of detector elements including a second detector element, distinct from the first detector element, and all detector

elements of the plurality of detector elements that are serially coupled to the second detector element;

wherein the first row and the second row are substantially non-overlapping, and the second row of detector elements are positioned at a non-zero offset from the first row of detector elements in a direction parallel to the first row, the non-zero offset not equal to the pitch distance.

12. The infrared detector of claim 11, wherein the first row of detector elements consists of two serially coupled detector elements, and the second row of detector elements consists of two serially coupled detector elements.

13. The infrared detector of claim 11, wherein the non-zero offset is between 5% of the pitch distance and 95% of the pitch distance.

14. The infrared detector of claim 11 wherein the non-zero offset is about half of the pitch distance.

15. The infrared detector of claim 11, wherein the non-zero offset is a non-quadrature offset.

16. The infrared detector of claim 11, further comprising:

a first output coupled to the first row of detector elements; and

a second output coupled to the second row of detector elements.

17. The infrared detector of claim 11, further comprising:

a package, wherein the substrate is mounted on the package and positioned to allow external electromagnetic energy to affect the substrate;

at least one terminal accessible from outside of the package; and

circuitry, mounted in the package and coupled to the at least one terminal, the first row of detector elements, and the second row of detector elements, to detect a first pyroelectric effect on the first row of detector elements and a second pyroelectric effect on the second row of detector elements, and to provide information about the first pyroelectric effect and the second pyroelectric effect at the at least one terminal.

18. The infrared detector of claim 17, wherein the circuitry comprises at least one analog-to-digital converter; and

wherein the information about the first pyroelectric effect and the second pyroelectric effect at the at least one terminal comprises digital data representing at least one voltage waveform.

19. The infrared detector of claim 17, wherein the circuitry comprises a first transistor buffer coupled to the first row of detector elements and a second transistor buffer coupled to the second row of detector elements;

wherein the at least one terminal comprises a first output terminal, a second output terminal, a power terminal, and a ground terminal; and

the information about the first pyroelectric effect comprises a first analog voltage waveform at the first output terminal, and the information about the second pyroelectric effect comprises a second analog voltage waveform at the second output terminal.