CLAIMS

1. A communications array comprising:

a support structure configured to support array elements, the support structure having a top planar surface; and

a plurality of array elements supported by the support structure,

wherein each array element is spaced from one another a predefined distance to create an air gap between adjacent array elements;

wherein each array element includes a top surface that is parallel to and spaced from the top planar surface of the support structure; and

wherein a weight of the communication array does not exceed 20 grams.

2. The communications array of claim 1, wherein the support structure is fabricated from a printed circuit board (PCB) or similar dielectric material.

3. The communications array of claim 1, wherein each array element of the plurality of array elements includes a radiator.

4. The communications array of claim 3, wherein the support structure includes a surface having an electrically conductive material disposed thereover.

5. The communications array of claim 4, wherein an aperture having a square shape is milled into the surface of the support structure.

6. The communications array of claim 1, wherein each array element of the plurality of array elements includes a beamformer.

7. The communications array of claim 6, wherein the beamformer includes multiple receptors and accordant output signal traces.

8. The communications array of claim 1, wherein the plurality of array elements includes an 8 X 8 array having 64 array elements.

9. The communications array of claim 1, wherein each array element is square-shaped.

10. The communications array of claim 1, further comprising a copper vertical launch (CVL).

11. The communications array of claim 10, wherein the CVL includes staking a copper wire into a hole formed in the support structure.

12. The communications array of claim 1, further comprising an electromagnetic boundary.

13. The communications array of claim 12, wherein the electromagnetic boundary includes machining a trench through the support structure and filling the trench with a conductive material.

14. The communications array of claim 13, wherein the conductive material includes a conductive ink.