

CLAIMS

1. A communications array comprising:
a support structure configured to array elements; and
5 a plurality of array elements supported by the support structure, each array element being fabricated from an advanced manufacturing techniques (AMT) process.
2. The communications array of claim 1, wherein the support structure is fabricated from a printed circuit board (PCB) or similar dielectric material.
- 10 3. The communications array of claim 1, wherein each array element of the plurality of array elements includes a radiator manufactured using the AMT process.
4. The communications array of claim 3, wherein the support structure
15 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.
- 20 6. The communications array of claim 1, wherein each array element of the plurality of array elements includes a beamformer manufactured using the AMT process.
7. The communications array of claim 6, wherein the beamformer includes
25 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.
- 30 9. The communications array of claim 1, wherein each array element is square-shaped, and includes a length and width of approximately 1.69 inches.

10. The communications array of claim 9, wherein each array element includes an overall length and width of 0.210 inches, with the array element having a length and width of 0.90 inches.

5

11. The communications array of claim 1, wherein a process panel is used to manufacture the communications array.

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

10

13. The communications array of claim 12, wherein the CVL includes staking a copper wire into a hole formed in the support structure.

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

15

15. The communications array of claim 14, wherein the electromagnetic boundary includes machining a trench through the support structure and filling the trench with a conductive material.

20

16. The communications array of claim 15, wherein the conductive material includes a conductive ink applied by the AMT process.

17. The communications array of claim 1, wherein a weight of the communications array does not exceed 0.7 oz. (20 g).

25