What is claimed is:

1. A system comprising:

a circuit board comprising electrical elements arranged at a first pitch;

a wafer comprising contacts arranged at a second pitch, the second pitch being less than the first pitch; and

an interconnect comprising additively-manufactured electrical conduits that are part of an electrical pathway between the electrical elements and the contacts, the additively-manufactured electrical conduits comprising electrically-conductive material.

2. The system of claim 1, wherein the at least one dielectric material comprises multiple dielectric materials.

3. The system of claim 1, where the additively-manufactured electrical conduits have a coaxial structure produced and wherein the at least one dielectric comprises air.

4. The system of claim 2, wherein the at least one dielectric material comprises air, plastic and/or ceramic.

5. The system of claim 1, further comprising:

an interposer between the interconnect and the circuit board, the interposer comprising a part of the electrical pathway between the electrical elements and the contacts.

6. The system of claim 1, further comprising:

electrically-conductive pins between additively-manufactured electrical conduits in the interconnect and corresponding contacts on the wafer.

7. The system of claim 1, further comprising:

contacts on the interposer that are electrically-conductive and mechanically-compliant, the contacts to provide a mechanically-compliant electrical connection between the interposer and the corresponding contacts on the wafer.

8. The system of claim 7, wherein the contacts on the wafer form an electrical circuit.

9. The system of claim 1, wherein the additively-manufactured electrical conduits comprise coaxial structures.

10. The system of claim 1, wherein the circuit board further comprises:

electronics associated with each of the electrical elements, wherein electronics associated with a corresponding electrical element for supporting operation of the corresponding electrical element.

11. The system of claim 1, further comprising:

pins between the interconnect and the wafer, the pins for providing at least part of an electrical pathway between the contacts and the interconnect; and

an interface board between the pins and the interconnect, the interface board being at least part of the electrical pathway between the contacts and the interconnect, the interface board comprising electronic components in the electrical pathway.

12. The system of claim 11, wherein the electronic components are passive electronic components.

13. The system of claim 12, wherein the electronic components comprise at least one of capacitors, baluns or switches.

14. The system of claim 11, wherein the electronic components comprise active electronic components.

15. The system of claim 1, wherein each of the electrical elements comprises part of a radio frequency (RF) probe card.

16. The system of claim 1, wherein the electrical elements comprise electrical cables that terminate on the circuit board.

17. The system of claim 1, wherein the contacts are arranged in parallel rows on the wafer; and

wherein the system further comprises:

a tester to make electrical contact between the interconnect and a subset of the contacts.

18. The system of claim 1, wherein the additively-manufactured electrical conduits are configured to have matching electrical path lengths, impedances, and signal attenuation.

19. The system of claim 1, wherein at least some of the additively-manufactured electrical conduits are configured to have substantially matching electrical path lengths, impedances, and signal attenuation.

20. The system of claim 1, wherein the additively-manufactured electrical conduits comprise curved or serpentine portions configured to achieve substantially

matching electrical path lengths and time-of-flight, impedances, and signal attenuation between different additively-manufactured electrical conduits.

21. The system of claim 1, wherein the additively-manufacture electrical conduits comprised three-dimensionally (3D) printed electrical conduits.

22. The system of claim 1, wherein the second pitch maintains a single dimension of the first pitch.

23. A system comprising:

a circuit board comprising electrical elements arranged at a first pitch;

a wafer comprising contacts arranged at a second pitch, the second pitch being less than the first pitch; and

an interconnect comprising subtractively-manufactured electrical conduits that are part of an electrical pathway between the electrical elements and the contacts, the subtractively-manufactured electrical conduits comprising electrically-conductive material.

24. The system of claim 23, wherein the subtractively-manufactured electrical conduits have a stripline configuration, a microstrip configuration, or a co-planar waveguide configuration.

What is claimed is:

1. A system comprising:

a circuit board comprising electrical elements arranged at a first pitch;

a wafer comprising contacts arranged at a second pitch, the second pitch being less than the first pitch; and

an interconnect comprising electrical conduits comprised of layers of material, the electrical conduits being part of an electrical pathway between the electrical elements and the contacts, the electrical conduits comprising electrically-conductive material;

wherein the electrical conduits have matching electrical impedances, the electrical conduits comprising coaxial structures, the coaxial structures having different physical configurations that produce the matching electrical impedances.

2. The system of claim 1, wherein the coaxial structures comprise at least one dielectric material.

3. The system of claim 2, wherein the at least one dielectric comprises air.

4. The system of claim 2, wherein the at least one dielectric material comprises air, plastic and/or ceramic.

5. The system of claim 1, further comprising:

an interposer between the interconnect and the circuit board, the interposer comprising a part of the electrical pathway between the electrical elements and the contacts.

6. The system of claim 1, further comprising:

electrically-conductive pins between electrical conduits in the interconnect and corresponding contacts on the wafer.

7. The system of claim 5, further comprising:

contacts on the interposer that are electrically-conductive and mechanically-compliant, the contacts to provide a mechanically-compliant electrical connection between the interposer and the corresponding contacts on the wafer.

8. The system of claim 7, wherein the contacts on the wafer form an electrical circuit.

9. The system of claim 1, wherein the coaxial structures comprise multiple dielectrics.

10. The system of claim 1, wherein the circuit board further comprises:

electronics associated with each of the electrical elements, wherein electronics associated with a corresponding electrical element are for supporting operation of the corresponding electrical element.

11. The system of claim 1, further comprising:

pins between the interconnect and the wafer, the pins for providing at least part of an electrical pathway between the contacts and the interconnect; and

an interface board between the pins and the interconnect, the interface board being at least part of the electrical pathway between the contacts and the interconnect, the interface board comprising electronic components in the electrical pathway.

12. The system of claim 11, wherein the electronic components are passive electronic components.

13. The system of claim 12, wherein the electronic components comprise at least one of capacitors, baluns or switches.

14. The system of claim 11, wherein the electronic components comprise active electronic components.

15. The system of claim 1, wherein each of the electrical elements comprises part of a radio frequency (RF) probe card.

16. The system of claim 1, wherein the electrical elements comprise electrical cables that terminate on the circuit board.

17. The system of claim 1, wherein the contacts are arranged in parallel rows on the wafer; and

wherein the system further comprises:

a tester to make electrical contact between the interconnect and a subset of the contacts.

18. The system of claim 1, wherein the electrical conduits are configured to have matching electrical path lengths, impedances, and signal attenuation.

19. The system of claim 1, wherein at least some of the electrical conduits are configured to have substantially matching electrical path lengths, impedances, and signal attenuation.

20. The system of claim 1, wherein the electrical conduits comprise curved or serpentine portions that produce substantially matching electrical path lengths and time-of-flight, impedances, and signal attenuation between different electrical conduits.

21. The system of claim 1, wherein the electrical conduits comprised three-dimensionally (3D) printed electrical conduits.

22. The system of claim 1, wherein the second pitch maintains a single dimension of the first pitch.

23. A system comprising:

a circuit board comprising electrical elements arranged at a first pitch;

a wafer comprising contacts arranged at a second pitch, the second pitch being less than the first pitch; and

an interconnect comprising electrical conduits comprised of layers of material, at least one of the layers missing at least some material, the electrical conduits being part of an electrical pathway between the electrical elements and the contacts, the electrical conduits comprising electrically-conductive material;

wherein the electrical conduits have matching electrical impedances, the electrical conduits comprising coaxial structures, the coaxial structures having different physical configurations to achieve the matching electrical impedances.

24. The system of claim 23, wherein the electrical conduits have a stripline configuration, a microstrip configuration, or a co-planar waveguide configuration.