CLAIMS

1. A circuit board, comprising:

a first substrate having a first surface;

a second substrate having a second surface; the second surface facing the first surface; a hole disposed through the first substrate;

an electrical component disposed adjacent each of the first surface and the second surface, the electrical component being at least partially encapsulated between the first substrate and the second substrate, the electrical component having a portion substantially aligned with the hole; and

an electrical conductor disposed within the hole, the electrical conductor having a first terminal end and a second terminal end, the first terminal end soldered to the portion of the electrical component, wherein the electrical conductor is a solid wire.

2. The circuit board of claim 1 wherein the electrical component is a signal trace line formed of an electrically conductive material, and the portion substantially aligned with the hole forms a terminal covering to the hole.

3. The circuit board of claim 2further comprising a second electrical component having a portion soldered to the second terminal end of the electrical conductor.

4. The circuit board of claim 3 wherein the second electrical component is one of a signal terminal, an electrical connector, a cable, and an electromagnetic radiator.

5. The circuit board of claim 4 wherein the second electrical component is surface mounted to a third surface.

6. The circuit board of claim 3 wherein the second electrical component is substantially encapsulated between two substrates.

7. The circuit board of claim 2 further comprising a ground plane disposed adjacent an opposing surface of the second substrate, the ground plane configured to provide an electromagnetic boundary condition to the signal trace line.

8. A method of manufacturing an electromagnetic circuit, the method comprising:

providing a circuit feature upon a surface of at least one of a first substrate or a second substrate;

forming a hole in at least one of the first substrate or the second substrate, the hole positioned to substantially align with a portion of the circuit feature;

applying solder to at least one of an electrical conductor and the portion of the circuit feature;

bonding the first substrate, directly or indirectly, to the second substrate, a bonded orientation of the first substrate and the second substrate being configured to at least partially encapsulate the circuit feature between the first substrate and the second substrate and to substantially align the hole with the portion of the circuit feature, the hole being positioned to provide access to the portion of the circuit feature;

inserting the electrical conductor in the hole, wherein inserting the electrical conductor in the hole comprises inserting a segment of solid wire into the hole; and

reflowing the solder to form an electrical connection between the electrical conductor and the portion of the circuit feature.

9. The method of claim 8 wherein providing the circuit feature upon a surface comprises milling an electrically conductive material from the surface to form the circuit feature.

10. The method of claim 9 wherein milling an electrically conductive material from the surface to form the circuit feature comprises milling the electrically conductive material to form a signal trace line.

11. The method of claim 8 wherein the circuit feature is a first circuit feature and further comprising providing a second circuit feature having a second portion positioned to substantially align with an opposing opening of the hole, and applying solder to form an electrical connection between the electrical conductor and the second portion.

12. The method of claim 11 wherein providing the second circuit feature comprises milling an electrically conductive material to form an electromagnetic radiator.

13. The method of claim 10 wherein providing the second circuit feature comprises milling an electrically conductive material to form a signal terminal pad configured to be coupled to at least one of an electrical connector or an electrical cable.

14. A circuit board, comprising:

a first dielectric substrate bonded directly or indirectly to a second dielectric substrate; a signal trace line formed of an electrically conductive material disposed adjacent an interior surface, the interior surface being between the first dielectric substrate and the second dielectric substrate;

a hole disposed through the second dielectric substrate, the hole substantially aligned with a portion of the signal trace line;

an electrical conductor disposed within the hole; and

a solder joint formed between a first terminal end of the electrical conductor and the portion of the signal trace line, and wherein the electrical conductor is a segment of solid wire having a loose fit relative to a wall of the hole.

15. The circuit board of claim 14 further comprising an electrical component having a portion soldered to a second terminal end of the electrical conductor, the electrical component being at least one of a signal terminal, an electrical connector, a cable, and an electromagnetic radiator.

16. The circuit board of claim 15 wherein the signal trace line is configured to convey a radio frequency signal to or from the electrical component via the electrical conductor.

17. The circuit board of claim 15 wherein the electrical component is surface mounted to an exterior surface of one of the second dielectric substrate or a further substrate bonded, directly or indirectly, to the second dielectric substrate.