

WHAT IS CLAIMED IS:

1. An RF coupler comprising:

a pair of dielectrically separated strip conductors, the pair of dielectrically separated strip conductors having a coupling section, the coupling section comprising: a plurality serially connected, vertically stacked, coupling sections, each one of the coupling sections comprising a portion of the pair of strip conductors separated by a dielectric gap, the gap forming an electromagnetic coupling region between the portion of the pair of strip conductors;

a plurality of electrically conductive layers, each one of the electrically conductive layers being disposed between a pair of the vertically stacked coupling sections.

2. The RF coupler recited in claim 1 wherein the pair of strip conductors in each one of the coupling sections are disposed in a side-by-side relationship in a horizontal plane.

3. The RF coupler recited in claim 1 wherein the pair of strip conductors in each one of the coupling sections are disposed in an overlaying, vertical relationship.

4. An RF coupler, comprising:

a pair of input ports;

a pair of output ports;

a coupling region for coupling: a portion of an input signal at a first one of the input ports to first of the pair of output ports and another portion of the input signal fed to the first one of the input ports a second one of the output ports; and one portion of an input signal fed to a second one of the input ports to the second of the pair of output ports and another portion of the input signals fed to the second one of the input ports to the second one of the output ports;

wherein the coupling region comprises a plurality of serially connected, vertically stacked, coupling sections; and

a plurality of connected electrically conductive layers, each one of the plurality of connected electrically conductive layers being disposed between a pair of the plurality of serially connected, vertically stacked, coupling sections.

5. An RF coupler, comprising:

a pair of input ports;

a pair of output ports;

5 a coupling region for coupling: a portion of an input signal at a first one of the input ports to first of the pair of output ports and another portion of the input signal fed to the first one of the input ports a second one of the output ports; and one portion of an input signal fed to a second one of the input ports to the second of the pair of output ports and another portion of the input signals fed to the second
10 one of the input ports to the second one of the output ports; and

wherein the coupling region comprises a plurality of serially connected, vertically stacked, coupling sections, each one of the coupling sections comprising a pair of strip conductors disposed in an overlaying, vertical relationship.

15 6. The RF coupler recited in claim 5 including a plurality of electrically conductive layers, each one of the electrically conductive layers being disposed between a corresponding pair of the coupling sections.

20 7. The RF coupler recited in claim 6 including an additional electrically conductive layer disposed over an upper most one of the serially connected, vertically stacked, coupling sections.

8. The RF coupler recited in claim 7 wherein the electrically conductive layers are on sides of the vertically stacked, coupling sections.

25 9. The RF coupler recited in claim 4 including a plurality of connected electrically conductive layers disposed between a corresponding pair of the dielectric layers, the electrically conductive layers being disposed over an upper most one of the serially connected, vertically stacked, coupling section, and the sides of the electrically conductive
30 layers being disposed on side of the vertically stacked, coupling sections.

10. An RF coupler, comprising:

a pair of dielectrically separated strip conductors, the pair of dielectrically separated strip conductors having a coupling section, the coupling section

comprising: a plurality serially connected, vertically stacked, coupling sections,
each one of the coupling sections comprising a portion of the pair of strip
conductors separated by a dielectric gap, the gap forming an electromagnetic
coupling region between the portion of the pair of strip conductors; and

5 wherein the pair of strip conductors in each one of the coupling sections are
disposed in an overlaying, vertical relationship.