CLAIMS

What is claimed is:

1. An antenna comprising:

a substrate;

a first antenna structure operating over a predetermined frequency range formed upon the substrate, comprising a first pattern upon a first surface of the substrate and a first ground plane formed upon a second surface of the substrate opposite the first surface of the substrate;

a second antenna structure operating over the predetermined frequency range formed upon the substrate, comprising a second pattern upon the first surface of the substrate and a second ground plane formed upon the second surface of the substrate;

a first feed structure electrically coupled to the first antenna structure and a first input feed; and

a second feed structure electrically coupled to the second antenna structure and a second input feed, wherein

the first antenna structure and the second antenna structure are disposed at 90° relative to each other relative to an axis of the substrate; and

the first input feed and the second input feed are aligned and are disposed parallel to either side of an axis of the substrate;

each of the first antenna structure and the second antenna structure comprises:

a loop structure; and

a loop feed structure comprising a differential feed comprising a pair of ports coupled to either end of the loop; and

at least one of:

a stub-line filter formed as a notched region within a parasitic element;

a first slot-line filter formed within an edge portion of the first ground plane beneath the differential feed of the first antenna element; and

a second slot-line filter formed within an edge portion of the second ground plane beneath the differential feed of the second antenna element.