HANDHELD NULLING ANTENNA

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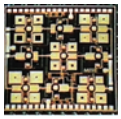

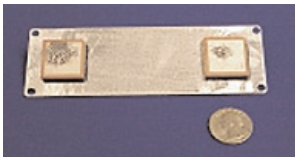

DESCRIPTION

The Handheld Nulling Antenna is a miniature adaptive antenna with an integrated nuller suitable for handheld GPS applications. GPS receiving antennas used in handheld applications currently do not have nulling capability. A nulling antenna could be used as an AJ Accessory (AJA) for the Defense Advanced GPS receiver (DAGR), which has a requirement for enhanced AJ protection against one or more broadband jammers.

An appliqué approach has been developed that uses a power minimization technique to detect and suppress broadband jammers. Several antenna options are under consideration. One is a dual frequency, stacked microstrip patch antenna placed above a trap-loaded quadrifilar helix antenna. Another is a cube-shaped patch array. A third dual patch design is intended for single-sideband M-code applications. A MMIC switched-bit phase shifter and attenuator provides the appropriate weights for nulling. The circuit is ready for final integration and test.

FEATURES

- Appliqué implementation is transparent to receiver system
- Typical null depth: 19 dB
- Noise figure: less than 2.5 dB
- Gain: 3.8 dB @ L_1 and 3.3 dB @ L_2
- Power: 560 mW @ 5 V when nulling a jammer; 350 mW @ 5 V when no jammer is present
- Antenna size: 8" H and 2.5" diam (helix), 2.5" side (cube)
- Electronics housing: 2.5" x 4" x 6.5"
- RF interface to receiver
- M-code compatible

APPLICATIONS

AJ accessory for handheld GPS receivers

FOR FURTHER INFORMATION CONTACT:

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