



Ultrawide Band, Low-Profile 'Stacked' Antenna System

[View U.S. Patent No. 9,337,540 in PDF format.](#)

WARF: P140308US01

Inventors: Nader Behdad, Kasra Ghaemi

The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing an antenna system that is less conspicuous and has a much larger bandwidth compared to conventional monopole whip designs.

Overview

High frequency (HF), very high frequency (VHF) and ultrahigh frequency (UHF) bands have long been used for many different communication systems, particularly in military applications. Standard monopole 'whip' antennas tend to be the primary option for systems operating at these frequency bands.

But whip antennas suffer two main drawbacks: (1) conspicuousness (e.g., sticking out of military vehicles) and (2) narrow bandwidths. There is a clear need for lower profile HF/VHF/UHF antennas capable of covering extremely broad bandwidths.

The Invention

UW-Madison researchers have developed a compact, ultrawide band antenna system with monopole-like radiation characteristics and a bandwidth of 10:1. The system is designed with two antennas wherein one is a scaled-down version of the other. The two antennas can 'stack' or 'nest' to be less conspicuous. A feed network feeds the appropriate antenna based on the frequency of the input signal. This enables the design to work as a single, ultrawide band system.

Applications

- Replacement for monopole whip antennas
- Military communication and airborne and marine communication systems
- Signal intelligence, direction finding, electronic warfare, monitoring systems and first-responder radio systems
- Automobile communications such as car-car, car-road sensors, etc.

Key Benefits

- Eliminates security issues associated with large antennas on military vehicles
- Extremely low profile of the antenna allows it to be made completely concealed.
- Improves bandwidth
- Could cut manufacturing costs

Additional Information

We use cookies on this site to enhance your experience and improve our marketing efforts. By continuing to browse without changing your browser settings to block or delete

- [WARF reference number P140308US01 describes the small, low-profile antenna system for ultrawide band applications like military vehicles and wireless communications.](#)

OK



WARF
Wisconsin Alumni Research Foundation

| info@warf.org | 608.960.9850

- [WARF reference number P100168US01 describes a compact, ultrawide band design that uses a differential mode antenna and operates in a more narrow frequency band.](#)

Tech Fields

- [Information Technology : Hardware](#)
- [Information Technology : Networking & telecommunications](#)

For current licensing status, please contact Michael Carey at mcarey@warf.org or 608-960-9867

We use cookies on this site to enhance your experience and improve our marketing efforts. By continuing to browse without changing your browser settings to block or delete cookies, you agree to the storing of cookies and related technologies on your device. [See our privacy policy.](#)

OK



WARF
Wisconsin Alumni Research Foundation

| info@warf.org | 608.960.9850