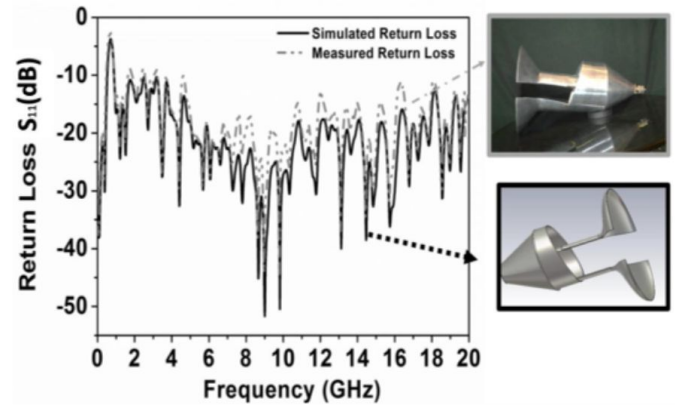


PENDING**(IN202111058597)**

An ultra wideband antenna



NEED

Radar and telecom systems suffer up to 40% signal loss due to narrowband antennas, weak directionality, and impedance mismatches—causing communication gaps and delayed responses in critical missions. What if a single antenna could solve all three challenges at once?

TECHNOLOGY OVERVIEW

This invention is a high-performance ultra-wideband antenna with exponentially flared curved plates and an integrated balun transition waveguide, operating across 2–20 GHz. It ensures high-directional gain (22.3 dB), smooth impedance matching, and peak power handling of 1.53 GW—ideal for high-speed, precision communication and radar operations.

TECHNOLOGY KEY FEATURES

2–20 GHz range, 22.3 dB gain, 1.53 GW power handling, exponential curvature for directivity, $\lambda/2$ plate spacing for optimized signal radiation, balun-waveguide integration for impedance matching. A new antenna design is changing the game—without disrupting existing systems.

[Read more here](#)

MARKET ANALYSIS

The global ultra-wideband market is projected to reach \$3.1B by 2033 with a 15.4% CAGR, driven by radar, automotive sensing, and 5G telecom. India's radar and telecom markets are expanding due to defense and digital infrastructure growth. (Sources: Market Research Future, 2024; IMARC, 2024)

Target Industries

1) Defense and aerospace radar developers building electronic warfare and tracking systems
2) Telecom and IoT integrators for 5G base stations and RF modules
3) Automotive and industrial sensing developers for ADAS radar and predictive monitoring platforms

AT A GLANCE

- SDG 9 (Industry, Innovation & Infrastructure), SDG 11 (Sustainable Cities & Communities), SDG 16 (Peace, Justice & Strong Institutions)

Technology is available for licensing/ co-development.

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