

Antenna Technologies For IoT Applications

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Abstracts

Recent advances in wireless communication and the rapid spread of IoT devices is fueling the adoption of smart antenna technologies and transforming deployment of intelligent systems across connected ecosystems. Innovative beamforming techniques, selection of frequency bands for antenna operations, and the underlining design requirements are forming the basis for choosing suitable antennas for various IoT use cases.

This report is a global study on the state of antenna technologies, seen from the perspective of the innovators and disruptors – companies that are redefining the IoT ecosystem.

The Startup Ecosystem

We cover the challenges faced by traditional antenna technologies, drivers of innovative solutions, need for antenna advancements, and the impact of these innovations on IoT applications. The report further describes how the startups are improvising on antenna performance for finding suitable solutions for the current challenges.

The ambit of the report covers more than 35 companies globally – firms that are deeply involved in developing disrupting techniques and strategies for antennas. Over 10 prominent companies such as Kymeta, Pivotal, and Energous have been profiled in-detail based on their technologies, offerings, patenting activities, and outlook. We have ranked these companies on a scale of three, based on a metric that included parameters such as company maturity, product commercialization stage, patent filings, investors, awards, and funding received. Apart from the core antenna technology categories, startups driving innovations and trends in the MEMS-based antenna space and those offering design and testing services for antennas have also been covered here.

Companies mentioned in this Report

1. Kymeta Corporation
2. Pivotal Commware
3. Notch Technologies
4. ALCAN Systems
5. Arralis
6. Adant Technologies
7. SatixFy
8. Fractus Antennas
9. Movandi
10. RF DSP
11. C&T RF Antennas Inc
12. TMYTEK
13. Tubis Technology
14. Analog Photonics
15. Isotropic Systems
16. Quanergy
17. Cellwize
18. Metawave Corporation
19. Energous Corporation
20. uBeam
21. Lunewave, Inc.
22. Optisys
23. Blickfeld
24. ZhiSensor
25. RoboSense
26. LeiShen Intelligent System Co.
27. Innoviz Technologies
28. AEye
29. Field Theory
30. BluFlux
31. BWant
32. MilliLabs
33. Radientum
34. Kumu Networks
35. Parallel Wireless
36. GenXComm

- 37. Uhnder
- 38. Resonant

Key Insights

The antenna startup ecosystem has adopted unique techniques to comply with the existing and upcoming standards in the space.

Startups are honing their knowledge of miniaturization, efficient functioning, MIMO, and different beamforming techniques to create software-defined antennas based on chips, metamaterials, mmWave technology, and photonics.

A majority of the companies are focusing on innovating antenna structures based out of metamaterials.

The companies are working to build antennas supporting 5G network infrastructure with smaller form factors by leveraging AI techniques, MEMS solutions, optical technology, and 3D printing to optimise the overall development of next generation antenna.

Companies entering the antenna market space are adhering to the requirements of upcoming communication infrastructure.

On the move communication applications are driving the need to reduce the size, enhance performance, and decrease the cost of antenna solutions.

Key Questions Addressed in this Report

What are the challenges faced by the traditional antenna technologies in the IoT domain?

What are the advantages of the innovative antenna technologies over the traditional antenna systems?

What are the key trends related to the adoption of different antenna techniques?

How are the emergent antenna technologies driving the development of IoT and upcoming 5G ecosystem?

What are the different antenna technologies that have gained traction in the market?

What are the target industries and application areas for the new companies operating in the antenna technology space?

What are the technology segregations, product descriptions, and roadmaps of the startups taking part in the growth of the antenna landscape?

How are the companies changing their business models to strengthen their position in the wireless communications domain?

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