

India Automotive Smart Antenna Market By Frequency (High Frequency, Very High Frequency, Ultra-High Frequency), By Component (Transceivers, Electronic Control Unit, Wiring Harness, Others), By Vehicle Type (ICE Vehicle, Electric Vehicle), By Region, Competition Forecast & Opportunities, 2019-2029

<https://marketpublishers.com/r/I5FE2308E114EN.html>

Date: October 2023

Pages: 82

Price: US\$ 3,500.00 (Single User License)

ID: I5FE2308E114EN

Abstracts

An advanced antenna system used in cars to improve communication and wireless connectivity is called an automotive smart antenna. For a variety of wireless applications used in the automotive industry, it is intended to enhance reception, transmission, and overall performance. Modern vehicles come equipped with a number of innovative electronic systems. These systems encourage safe and secure driving, offer seamless connectivity, and offer a range of entertainment options for the driver and passengers. These systems can perform detection, identification, classification, and wireless data communication thanks to a variety of automotive antennas and sensors that operate at different frequencies. It can be challenging to create an antenna with high gain, excellent directivity, good radiation efficiency, and a low profile for automotive applications. Similar to that, designing is a very complicated process that requires the use of sophisticated simulation software and skilled RF antenna designers. To overcome problems like signal interference, multipath fading, and constrained bandwidth, smart antennas make use of cutting-edge technologies. Smart antennas are incorporated into the general design of the vehicle, frequently working in tandem with other vehicle systems. They could be linked to the telematics unit, navigation system, infotainment system, cellular modems, or other communication modules inside the car. The integration enables effective resource sharing and data exchange, giving the passengers of the vehicle a connected and seamless experience. Smart antennas for automobiles have several benefits over conventional antennas. They offer enhanced

data throughput, greater coverage area, better signal reception quality, and less interference. Overall wireless communication reliability is increased by the ability to track signal sources and direct the antenna beam in specific directions. Smart antennas can be incorporated into sleeker, more aerodynamic designs, which adds to the aesthetic appeal of contemporary vehicles. Multiple-Input Smart antenna systems frequently incorporate multiple-output (MIMO) technology. It makes use of multiple antenna components to send and receive different data streams simultaneously. By utilizing spatial diversity and multipath propagation, MIMO increases data throughput and reliability. It can be used for cellular networks, Wi-Fi, Bluetooth, vehicle-to-vehicle (V2V) and vehicle-to-infrastructure (V2I) communication, among other wireless applications.

Developing Services for Automotive Connectivity

In recent years, there have been a significant increase in the number of vehicle radio services for navigation, infotainment, ADAS, and other features. This trend is predicted to continue. The integrated antenna will be the solution to these new requirements as surface space in conventional antennas becomes a problem. Future mobility will be influenced by the automotive industry's transformation. Connectivity and automation have emerged as key drivers of the industry's evolution towards a greener, safer, and more efficient transportation as people become more conscious of their role in contributing to global pollution and efforts are made to reduce the still-high number of traffic accidents. Dealing with connectivity-related issues, such as ensuring a specific level of quality of service (QoS) based on dependable and quick wireless links, is made more challenging by the trend towards connected and automated mobility (CAM). Vehicles already come with a variety of sensors that help the driver make decisions... Similar to how some maneuvers are frequently taken over by so-called advanced driver assistance systems (ADAS). But from a safety perspective, automobiles only employ ADAS to lessen impending traffic hazards. Vehicles use back-end data in terms of connectivity to obtain helpful information while driving. Vehicle-to-everything (V2X) technologies are used in intelligent transportation to manage communications between the vehicle and the network, roadside infrastructure, pedestrians, and other vehicles.

Increasing Use of Wireless Technology

Future self-driving cars are anticipated to make significant use of wireless communication technologies. More and more vehicle sensors will need to communicate with one another as the world gets closer to total autonomy. Intelligent decisions are made in a dynamic environment (V2X) using vehicle-to-vehicle (V2V), vehicle-to-cloud

(V2C), vehicle-to-infrastructure (V2I), and vehicle-to-everything (V2E) communications. This necessitates the use of wireless connectivity as well as the coordination of various protocols such as GNSS, cellular 5G/4G/LTE, WiFi, Bluetooth, and ultra-wideband (UWB). In the upcoming years, it's anticipated that positioning and wireless technology integration in vehicles will become more commonplace. These technologies include Wi-Fi, 3G/4 LTE, Bluetooth, vehicle-to-vehicle (V2V), and vehicle-to-everything (V2X). There is an increasing need for vehicle-to-vehicle or vehicle-to-infrastructure connectivity in today's technologically advanced era in order to keep up with real-time data generation and processing. Due to factors like an expanding automotive vehicle fleet, rising India auto production, and rising demand for luxury vehicles, the India market for automotive integrated antenna systems is anticipated to expand more quickly than other markets during the forecast period.

Increasing Focus on Vehicle Safety

The market for automotive smart antenna is seeing an increase in demand for ADAS features like adaptive cruise control, collision avoidance systems, 360-degree cameras, and autopilots. In passenger vehicles, the use of radio and satellite communications, vehicle tracking, and remote vehicle diagnostics is growing. The market for artificial intelligence is also seeing an increase in the integration of Level 3 and Level 4 automation. Since the vehicular communication channel exhibits time-frequency selective fading, multi-antenna techniques can enhance link conditions through diversity processing. The goal of these developments is to increase vehicle safety. Additionally, the market for automotive smart antenna is anticipated to see growth due to growing concerns over vehicle safety. Due to the auto industry's declining production rate, the growth of automotive smart antenna market has restricted. Additionally, some fleet operators are apprehensive about installing the automotive smart antenna system for fear of data breaches, which would be a setback for the market. The price of automotive antennas is increasing due to growing consumer concern over vehicle safety.

Vehicle Management

Future autonomous connected cars will enable new inside-and-outside-the-vehicle applications. Vehicles need state-of-the-art sensors and high-performance communication modules to be successful. Real-time data transmission, in-car streaming, quick over-the-air (OTA) software updates, and vehicle-to-everything (V2X) communication are all made possible by dependable and safe 5G technology. Connected cars need GNSS/GPS antennas' precise positioning and geolocation capabilities to operate autonomously. To satisfy the connectivity needs of each OEM,

Mitsumi can incorporate 5G and GNSS/GPS technology into customized combination antennas. Companies can identify the ideal solution for each vehicle with the aid of local engineering support.

Lack of Standardization

The most challenging task still involves striking a balance between the requirements for larger antenna bandwidth and smaller device sizes. One efficient strategy to handle this escalating conflict is to design an active antenna system. The demand for compact and affordable components is being fueled by the widespread use of handheld communication devices and the rising demand for radar sensors. Including all required parts on a monolithic microwave integrated circuit (MMIC) is one way to create smaller and less expensive devices. Because of advancements in semiconductor technology, active components that can operate at millimeter (mm)-wave frequencies are now feasible. Passive components can be integrated onto chips at frequencies above 100 GHz. High data rates for communication devices or high resolution for remote sensing applications are made possible by the several gigahertz of bandwidth that is available at mm-wave frequencies. By integrating the RF parts and antennas, it is possible to prevent lossy off-chip transitions and cut down on the number of connections needed for baseband signals and the power supply. Furthermore, the antenna can be implemented on a chip by being reduced in size to less than a millimeter at mm-wave frequencies.

Market Segmentation

India automotive smart antenna market is segmented based on vehicle type, product type, frequency, application, region, and competitive landscape. In terms of vehicle type, the market is segmented into passenger cars and commercial vehicles. Based on product type, the market is segmented into Rod, Shark Fin, and Glass. Based on frequency, the market is segmented into high, very high, ultra-high. In terms of application, the market is segmented into AM/FM, Navigation System, Safety System, Wi-Fi and Bluetooth, Others. Regarding region, the market is segmented into the North Region, South Region, West Region and East Region.

Company Profiles

The presence of multiple regional players has led to a highly fragmented market for automotive smart antennas in India. However, some of the top competitors, including Hella GmbH & Co. KGaA, Robert Bosch GmbH, Continental AG, TE Connectivity, Huf

Huelsbeck & Fuerst GmbH & Co. KG, MD ELEKTRONIK GmbH, Ericsson Antenna Technology Germany GmbH, Ficosa Group, Harman International have seized sizeable market shares.

Report Scope:

In this report, India automotive smart antenna market has been segmented into following categories, in addition to the industry trends which have also been detailed below:

India Automotive Smart Antenna Market, By Vehicle Type:

Passenger Vehicle

Commercial Vehicle

India Automotive Smart Antenna Market, By Product Type:

Rod

Shark Fin

Glass

India Automotive Smart Antenna Market, By Frequency:

High

Very High

Ultra High

India Automotive Smart Antenna Market, By Application:

AM/FM

Navigation System

Safety System

Wi-Fi and Bluetooth

Others

India Automotive smart antenna Market, By Region:

North

South

East

West

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in India automotive smart antenna market.

Available Customizations:

With the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

Detailed analysis and profiling of additional market players (up to five).

Contents

1. Introduction
 - 1.1. Market Overview
 - 1.2. Key Highlights of the Report
 - 1.3. Market Coverage
 - 1.4. Market Segments Covered
 - 1.5. Research Tenure Considered

2. RESEARCH METHODOLOGY

- 2.1. Objective of the Study
- 2.2. Baseline Methodology
- 2.3. Key Industry Partners
- 2.4. Major Association and Secondary Sources
- 2.5. Forecasting Methodology
- 2.6. Data Triangulation & Validation
- 2.7. Assumptions and Limitations

3. EXECUTIVE SUMMARY

- 3.1. Market Overview
- 3.2. Market Forecast
- 3.3. Key Regions
- 3.4. Key Segments

4. IMPACT OF COVID-19 ON INDIA AUTOMOTIVE SMART ANTENNA MARKET

- 4.1.1. Key Segments Impacted
- 4.1.2. Key Regions Impacted
- 4.1.3. Key Countries Impacted

5. VOICE OF CUSTOMERS ANALYSIS

- 5.1. Brand Awareness
- 5.2. Factors Influencing Purchase Decision
- 5.3. Brand Satisfaction Level

6. INDIA AUTOMOTIVE SMART ANTENNA MARKET OUTLOOK

India Automotive Smart Antenna Market By Frequency (High Frequency, Very High Frequency, Ultra-High Frequency)...

6.1. Market Size & Forecast

6.1.1. By Value & Volume

6.2. Market Share & Forecast

6.2.1. By Vehicle Type Market Share Analysis (Passenger Vehicle and Commercial Vehicle)

6.2.2. By Product Type Market Share Analysis (Rod, Shark Fin, and Glass)

6.2.3. By Frequency Market Share Analysis (High, Very High and Ultra-High)

6.2.4. By Application Market Share Analysis (AM/FM, Navigation System, Safety System, Wi-Fi and Bluetooth, Others)

6.2.5. By Regional Market Share Analysis

6.2.5.1. North Region Market Share Analysis

6.2.5.2. South Region Market Share Analysis

6.2.5.3. West Region Market Share Analysis

6.2.5.4. East Region Market Share Analysis

6.2.6. By Company Market Share Analysis (Top 5 Companies, Other - By Value, 2023)

6.3. India Automotive Smart Antenna Market Mapping & Opportunity Assessment

6.3.1. By Vehicle Type Market Mapping & Opportunity Assessment

6.3.2. By Product Type Market Mapping & Opportunity Assessment

6.3.3. By Frequency Market Mapping & Opportunity Assessment

6.3.4. By Application Market Mapping & Opportunity Assessment

6.3.5. By Regional Market Mapping & Opportunity Assessment

7. INDIA PASSENGER VEHICLE SMART ANTENNA MARKET OUTLOOK

7.1. Market Size & Forecast

7.1.1. By Value & Volume

7.2. Market Share & Forecast

7.2.1. By Vehicle Type Market Share Analysis (SUV, Sedan, Hatchback)

7.2.2. By Product Type Market Share Analysis

7.2.3. By Frequency Market Share Analysis

7.2.4. By Application Market Share Analysis

8. INDIA COMMERCIAL VEHICLE SMART ANTENNA MARKET OUTLOOK

8.1. Market Size & Forecast

8.1.1. By Value & Volume

8.2. Market Share & Forecast

8.2.1. By Vehicle Type Market Share Analysis (Light Commercial Vehicle (LCV),

Medium Commercial Vehicle (MCV), Heavy Commercial Vehicle (HCV))

8.2.2. By Product Type Market Share Analysis

8.2.3. By Frequency Market Share Analysis

8.2.4. By Application Market Share Analysis

9. SWOT ANALYSIS

9.1. Strength

9.2. Weakness

9.3. Opportunities

9.4. Threats

10. MARKET DYNAMICS

10.1. Market Drivers

10.2. Market Challenges

11. MARKET TRENDS AND DEVELOPMENTS

12. PESTEL ANALYSIS

12.1. Political

12.2. Economical

12.3. Social

12.4. Technological

12.5. Environmental

12.6. Legal

13. POLICY & REGULATORY LANDSCAPE

14. INDIA ECONOMIC PROFILE

15. COMPETITIVE LANDSCAPE

15.1. Company Profiles (Up to 10 Major Companies)

15.1.1. HELLA India Automotive Pvt. Ltd. Company Details

- 15.1.1.1. Key Product Offered
- 15.1.1.2. Financials (As Per Availability)
- 15.1.1.3. Recent Developments
- 15.1.1.4. Key Management Personnel
- 15.1.2. Robert Bosch Limited
 - 15.1.2.1. Company Details
 - 15.1.2.2. Key Product Offered
 - 15.1.2.3. Financials (As Per Availability)
 - 15.1.2.4. Recent Developments
 - 15.1.2.5. Key Management Personnel
- 15.1.3. Continental India Limited
 - 15.1.3.1. Company Details
 - 15.1.3.2. Key Product Offered
 - 15.1.3.3. Financials (As Per Availability)
 - 15.1.3.4. Recent Developments
 - 15.1.3.5. Key Management Personnel
- 15.1.4. Denso India Pvt Ltd
 - 15.1.4.1. Company Details
 - 15.1.4.2. Key Product Offered
 - 15.1.4.3. Financials (As Per Availability)
 - 15.1.4.4. Recent Developments
 - 15.1.4.5. Key Management Personnel
- 15.1.5. TE Connectivity India Pvt Ltd
 - 15.1.5.1. Company Details
 - 15.1.5.2. Key Product Offered
 - 15.1.5.3. Financials (As Per Availability)
 - 15.1.5.4. Recent Developments
 - 15.1.5.5. Key Management Personnel
- 15.1.6. TE Connectivity India Pvt Ltd
 - 15.1.6.1. Company Details
 - 15.1.6.2. Key Product Offered
 - 15.1.6.3. Financials (As Per Availability)
 - 15.1.6.4. Recent Developments
 - 15.1.6.5. Key Management Personnel
- 15.1.7. Ficosa Group
 - 15.1.7.1. Company Details
 - 15.1.7.2. Key Product Offered
 - 15.1.7.3. Financials (As Per Availability)
 - 15.1.7.4. Recent Developments

- 15.1.7.5. Key Management Personnel
- 15.1.8. Harman International
 - 15.1.8.1. Company Details
 - 15.1.8.2. Key Product Offered
 - 15.1.8.3. Financials (As Per Availability)
 - 15.1.8.4. Recent Developments
 - 15.1.8.5. Key Management Personnel
- 15.1.9. Huf Huelsbeck & Fuerst GmbH & Co. KG
 - 15.1.9.1. Company Details
 - 15.1.9.2. Key Product Offered
 - 15.1.9.3. Financials (As Per Availability)
 - 15.1.9.4. Recent Developments
 - 15.1.9.5. Key Management Personnel
- 15.1.10. MD ELEKTRONIK GmbH
 - 15.1.10.1. Company Details
 - 15.1.10.2. Key Product Offered
 - 15.1.10.3. Financials (As Per Availability)
 - 15.1.10.4. Recent Developments
 - 15.1.10.5. Key Management Personnel

16. STRATEGIC RECOMMENDATIONS

- 16.1. Key Focus Areas
 - 16.1.1. Target Regions
 - 16.1.2. Target Vehicle Type
 - 16.1.3. Target Product Type

17. ABOUT US & DISCLAIMER

I would like to order

Product name: India Automotive Smart Antenna Market By Frequency (High Frequency, Very High Frequency, Ultra-High Frequency), By Component (Transceivers, Electronic Control Unit, Wiring Harness, Others), By Vehicle Type (ICE Vehicle, Electric Vehicle), By Region, Competition Forecast & Opportunities, 2019-2029

Product link: <https://marketpublishers.com/r/I5FE2308E114EN.html>

Price: US\$ 3,500.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:

info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/I5FE2308E114EN.html>

To pay by Wire Transfer, please, fill in your contact details in the form below:

First name:
Last name:
Email:
Company:
Address:
City:
Zip code:
Country:
Tel:
Fax:
Your message:

****All fields are required**

Customer signature _____

Please, note that by ordering from marketpublishers.com you are agreeing to our Terms & Conditions at <https://marketpublishers.com/docs/terms.html>

To place an order via fax simply print this form, fill in the information below
and fax the completed form to +44 20 7900 3970