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Global Automotive Millimeter-Wave Radar Cover Heater Supply, Demand and Key Producers, 2026-2032

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Abstracts

The global Automotive Millimeter-Wave Radar Cover Heater market size is expected to reach $ 330 million by 2032, rising at a market growth of 13.3% CAGR during the forecast period (2026-2032).

Automotive millimeter wave radar cover heaters are electric heating components installed on or integrated into the external protective covers of automotive millimeter wave radars, radar emblems, radar-transparent grilles, and localized smart front-end structures. They mainly increase the surface temperature of the radar cover through controlled resistance heating to melt accumulated snow and ice, remove frost and condensation, and reduce the impact of severe weather on millimeter wave radar signal transmission, echo reception, and target recognition stability. This product focuses on external heating structures used for millimeter wave radars in automotive advanced driver assistance systems and autonomous driving perception systems. It is usually composed of flexible heating films, printed conductive circuits, etched metal foils, embedded resistance wires, insulating substrates, adhesive layers, lead terminals, temperature sensing elements, and control interfaces. It can also be integrated with radar covers, emblems, or front-end decorative parts through lamination, hot pressing, insert injection molding, and overmolding processes to form complete assemblies.

The main product forms include standalone flexible heating pads, printed radar heating films, transparent conductive heating films, embedded-wire heating films, radar heating modules with temperature control functions, heated millimeter wave radar emblems, and integrated heated radar covers. Common technical routes include silver paste or copper paste screen printing, copper foil or alloy foil etching, metal resistance wire embedding, polyimide or polyester film lamination, self-regulating heating based on positive temperature coefficient materials, and carbon nanotube transparent conductive

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film heating. Product design needs to balance heating uniformity, power density, heating speed, energy consumption, surface temperature difference, thermal cycling life, and automotive electrical safety, while controlling the absorption, reflection, and scattering of heating circuits on 76 to 81 GHz millimeter wave radar signals.

Key specifications usually include 12 V, 24 V, or 48 V operating voltage, an operating temperature range of approximately minus 40 degrees Celsius to 85 degrees Celsius or higher, temperature uniformity within the specified area, target heating time, rated power, resistance tolerance, radar transmission loss, waterproof and dustproof rating, salt spray resistance, vibration resistance, and high and low temperature cycling reliability. The products are mainly used in front millimeter wave radars, hidden emblem radars, smart front-end radars, certain corner radars, and passenger and commercial vehicles that need to maintain perception capability under snow, low temperature, high humidity, and freezing rain conditions. In 2025, the global automotive millimeter wave radar cover heater industry had an average ex-factory price of approximately USD 18 to 22 per set, with an industry average gross margin of approximately 32% to 40%.

Automotive millimeter wave radar cover heaters are evolving from a specialized application of flexible heating technology into an important component of all weather vehicle perception systems. The upstream segment includes polyimide and polyester films, copper foil, resistance alloys, conductive silver and copper pastes, transparent conductive materials, engineering plastics, adhesives, connectors, and temperature sensing components. The midstream segment covers circuit design, printing, metal foil etching, wire embedding, lamination, insert molding, overmolding, electrical connection, power matching, and automotive reliability validation. The downstream segment consists of radar system suppliers, exterior component manufacturers, automotive tier suppliers, and vehicle manufacturers. Product value is increasingly associated with preserving radar availability and reducing perception degradation rather than simply generating heat. This change is raising technical requirements for signal transmission, temperature control, material compatibility, durability, and integration with exterior vehicle structures.

The global supply structure combines advanced material development and system engineering in Europe, Japan, and North America with expanding manufacturing capacity across China, South Korea, and Southeast Asia. European suppliers have developed strong capabilities in printed heating circuits, self regulating resistance technologies, and integration with intelligent front panels. Japanese suppliers are particularly competitive in radar emblems, flexible circuits, decorative films, precision molding, and integrated exterior components. North American participants have

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emphasized transparent conductive films, carbon based heating materials, and customized flexible heater design. Asian manufacturing locations are increasingly responsible for film processing, injection molding, assembly, and localized delivery to vehicle programs. The supply chain is gradually moving beyond simple contract production toward joint product development, local engineering support, and regionalized automotive qualification. Joint ventures, licensing arrangements, and manufacturing partnerships remain practical routes for combining heating technology with established exterior component platforms.

Forward radar covers, heated radar emblems, and concealed radar areas within intelligent front panels currently account for the main commercial applications. Heating of corner radar locations remains more selective because installation position, local snow exposure, packaging constraints, and vehicle cost targets vary substantially. Product development is shifting from conventional etched foil and printed silver paste heaters toward lower radar attenuation, improved optical transparency, lighter weight, reduced power consumption, and self regulating temperature behavior. The level of integration between the heater, decorative layer, radio wave transparent substrate, and molded exterior component is increasing. As a result, complete heated radar covers and functional radar emblems generally capture more value than independent heating films. New generations are also incorporating faster warm up, zoned heating, closed loop temperature control, fault detection, and coordinated operation with vehicle thermal and electronic control systems.

Vehicle safety regulations are steadily increasing the adoption of automatic emergency braking, driver assistance functions, and environmental sensing systems, creating a favorable long term foundation for radar related environmental protection components. Demand growth will be led by vehicles sold in cold climates, premium electric vehicles, more advanced driver assistance platforms, and vehicle designs that conceal sensors behind decorative exterior surfaces. At the same time, camera only perception strategies, hydrophobic coatings, washer systems, vibration based cleaning, and software compensation may reduce heater adoption in certain cost sensitive applications. Investment activity is expected to focus on functional films, transparent conductive materials, integrated exterior components, and regional automotive production capacity. New product launches and localized manufacturing projects should improve availability and reduce cost, although long qualification cycles, concentrated customer relationships, strict reliability requirements, and annual automotive price reductions will continue to shape supplier profitability.

Report Scope

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This report studies the global Automotive Millimeter-Wave Radar Cover Heater production, demand, key manufacturers, and key regions.

This report is a detailed and comprehensive analysis of the world market for Automotive Millimeter-Wave Radar Cover Heater and provides market size (US$ million) and Year-over-Year (YoY) Growth, considering 2025 as the base year. This report explores demand trends and competition, as well as details the characteristics of Automotive Millimeter-Wave Radar Cover Heater that contribute to its increasing demand across many markets.

Highlights and key features of the study

Global Automotive Millimeter-Wave Radar Cover Heater total production and demand, 2021-2032, (K Units)
Global Automotive Millimeter-Wave Radar Cover Heater total production value, 2021-2032, (USD Million)
Global Automotive Millimeter-Wave Radar Cover Heater production by region & country, production, value, CAGR, 2021-2032, (USD Million) & (K Units), (based on production site)
Global Automotive Millimeter-Wave Radar Cover Heater consumption by region & country, CAGR, 2021-2032 & (K Units)
U.S. VS China: Automotive Millimeter-Wave Radar Cover Heater domestic production, consumption, key domestic manufacturers and share
Global Automotive Millimeter-Wave Radar Cover Heater production by manufacturer, production, price, value and market share 2021-2026, (USD Million) & (K Units)
Global Automotive Millimeter-Wave Radar Cover Heater production by Control Method, production, value, CAGR, 2021-2032, (USD Million) & (K Units)
Global Automotive Millimeter-Wave Radar Cover Heater production by Application, production, value, CAGR, 2021-2032, (USD Million) & (K Units)

This report profiles key players in the global Automotive Millimeter-Wave Radar Cover Heater market based on the following parameters - company overview, production, value, price, gross margin, product portfolio, geographical presence, and key developments. Key companies covered as a part of this study include Toyoda Gosei Co., Ltd., FORVIA SE, Minth Group Limited, ATT advanced thermal technologies GmbH, NIBE Industrier AB, NOK Corporation, Suntech Co., Ltd., Nissha Co., Ltd., CHASM Advanced Materials, Inc., etc.

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This report also provides key insights about market drivers, restraints, opportunities, new product launches or approvals.

Stakeholders would have ease in decision-making through various strategy matrices used in analyzing the World Automotive Millimeter-Wave Radar Cover Heater market

Detailed Segmentation:

Each section contains quantitative market data including market by value (US$ Millions), volume (production, consumption) & (K Units) and average price (US$/Unit) by manufacturer, by Control Method, and by Application. Data is given for the years 2021-2032 by year with 2025 as the base year, 2026 as the estimate year, and 2027-2032 as the forecast year.

Global Automotive Millimeter-Wave Radar Cover Heater Market, By Region:

United States

China

Europe

Japan

South Korea

ASEAN

India

Rest of World

Global Automotive Millimeter-Wave Radar Cover Heater Market, Segmentation by Control Method:

Passive Resistive Heater

Self Regulating PTC Heater

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Locally Controlled Heater

Vehicle ECU Controlled Heater

Others

Global Automotive Millimeter-Wave Radar Cover Heater Market, Segmentation by Heating Technology:

Printed Conductive Ink Heater

Etched Metal Foil Heater

Embedded Resistance Wire Heater

Transparent Conductive Film Heater

Others

Global Automotive Millimeter-Wave Radar Cover Heater Market, Segmentation by Application:

Passenger Cars

Light Commercial Vehicles

Heavy Commercial Vehicles

Others

Companies Profiled:

Toyoda Gosei Co., Ltd.

FORVIA SE

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Minth Group Limited

ATT advanced thermal technologies GmbH

NIBE Industrier AB

NOK Corporation

Suntech Co., Ltd.

Nissha Co., Ltd.

CHASM Advanced Materials, Inc.

Key Questions Answered:
1. How big is the global Automotive Millimeter-Wave Radar Cover Heater market?
2. What is the demand of the global Automotive Millimeter-Wave Radar Cover Heater market?
3. What is the year over year growth of the global Automotive Millimeter-Wave Radar Cover Heater market?
4. What is the production and production value of the global Automotive Millimeter-Wave Radar Cover Heater market?
5. Who are the key producers in the global Automotive Millimeter-Wave Radar Cover Heater market?
6. What are the growth factors driving the market demand?

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Contents

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3 WORLD MANUFACTURERS COMPETITIVE ANALYSIS

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9 INDUSTRY CHAIN ANALYSIS

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List Of Tables

LIST OF TABLES

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List Of Figures

LIST OF FIGURES

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