

Global LCP Millimeter-Wave Antenna Module Supply, Demand and Key Producers, 2026-2032

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Abstracts

The global LCP Millimeter-Wave Antenna Module market size is expected to reach \$ 1528 million by 2032, rising at a market growth of 6.2% CAGR during the forecast period (2026-2032).

LCP millimeter-wave antenna modules (LCP antennas) use liquid crystal polymer (LCP) thin films/copper-clad laminates as the dielectric and carrier to integrate millimeter-wave array antennas, feed lines, and RF interconnects onto a flexible or semi-flexible structure. They are then integrated with phased array/transceiver chip packages (such as AiP), offering advantages such as low dielectric loss, low moisture absorption, and dimensional stability. They are suitable for 5G/6G millimeter-wave terminals and small base stations.

In 2025, the global unit price of LCP millimeter-wave antenna modules was \$15 per unit, with sales of 65.1 million units and a global annual production capacity of approximately 68 million units. The industry profit margin was 20-25%.

Global Market Regional Landscape

North America: Driven by the communication chip ecosystem, operator pilots, and high-end terminals, emphasis is placed on array performance, beam consistency, and regulatory certification efficiency.

Europe: Prominent in automotive millimeter-wave radar, industrial interconnection, and high-reliability scenarios, with a focus on temperature resistance, lifespan, and supply stability. **Asia Pacific:** Fastest growth, with China, Japan, and South Korea forming a dense industrial chain in materials, FCCL, module manufacturing, and terminal

assembly; the focus of competition is 'performance and yield at controllable costs.' Emerging Markets: Millimeter-wave deployment is more cautious, but CPE/fixed wireless and private industry networks are driving structural opportunities.

Upstream and Downstream Industrial Chain

Key upstream elements include: LCP resin and film, copper foil and LCP-FCCL, low-loss adhesives/cover films, precision etching and electroplating chemicals, micro-hole/laser processing and testing fixtures, and RoHS/REACH and high-frequency material compliance verification systems. Typical downstream customers include: mobile phone and XR terminal brands, CPE/router and small cell manufacturers, automotive millimeter-wave radar and smart cockpit supply chains, industrial gateway and private network equipment manufacturers; as well as antenna module manufacturers, RF front-end and system integrators.

Real Procurement Logic

In the procurement process, the most common customer questions are not 'Can it be done?', but rather: array performance is not up to par; temperature and humidity drift occurs; assembly tolerances lead to poor consistency; batch yield fluctuates, rework costs are high; short windows for new models and slow prototyping iterations. Therefore, the evaluation focus shifts to: material batch stability, process windows (lamination/drilling/copper plating/solder resist), closed-loop capabilities from simulation to prototype to mass production, and cross-team collaboration (antenna/structure/thermal/packaging/certification). Suppliers who can provide integrated services of 'design rules + process package + rapid prototyping + mass production ramp-up' are more likely to be included in the long-term procurement list.

Technology Trends and Innovations

Lower Loss and Thinner Stacking: Materials and structures continue to be lightweight, targeting higher frequency bands and more compact spaces; Array and Packaging Synergy: Moving from 'antenna manufacturing followed by assembly' to integrated design with AiP/packaging/heat dissipation; Automation and Testability: Online testing, calibration, and conformance management become key to scaling, with manufacturing evolving from 'process experience' to 'data-driven.'

Policy and Compliance

Millimeter-wave terminals and base stations involve spectrum licensing and radio regulations (such as FCC/CE), 3GPP conformance, and EMC/RF exposure assessments; materials and manufacturing must meet RoHS/REACH, reliability, and traceability requirements. In more mature markets, 'compliance and certification efficiency' are increasingly considered a supplier's core strength.

Future Outlook

As the vision of 6G, AI terminals, and automotive intelligence push connectivity towards higher frequencies, lower latency, and higher reliability, LCP millimeter-wave antenna modules will move from a supporting role to the forefront: they are not only a determining factor in performance limits but also a new tool for differentiation in complete systems, and the most challenging aspect of supply chain competition in terms of system capabilities. Whoever can integrate materials, design, manufacturing, testing, and compliance is more likely to gain definite incremental growth in the next wave of high-frequency trends.

This report studies the global LCP Millimeter-Wave Antenna Module production, demand, key manufacturers, and key regions.

This report is a detailed and comprehensive analysis of the world market for LCP Millimeter-Wave Antenna Module 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 LCP Millimeter-Wave Antenna Module that contribute to its increasing demand across many markets.

Highlights and key features of the study

Global LCP Millimeter-Wave Antenna Module total production and demand, 2021-2032, (K Units)

Global LCP Millimeter-Wave Antenna Module total production value, 2021-2032, (USD Million)

Global LCP Millimeter-Wave Antenna Module production by region & country, production, value, CAGR, 2021-2032, (USD Million) & (K Units), (based on production site)

Global LCP Millimeter-Wave Antenna Module consumption by region & country, CAGR,

2021-2032 & (K Units)

U.S. VS China: LCP Millimeter-Wave Antenna Module domestic production, consumption, key domestic manufacturers and share

Global LCP Millimeter-Wave Antenna Module production by manufacturer, production, price, value and market share 2021-2026, (USD Million) & (K Units)

Global LCP Millimeter-Wave Antenna Module production by Type, production, value, CAGR, 2021-2032, (USD Million) & (K Units)

Global LCP Millimeter-Wave Antenna Module production by Application, production, value, CAGR, 2021-2032, (USD Million) & (K Units)

This report profiles key players in the global LCP Millimeter-Wave Antenna Module 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 Murata, Sunway, Luxshare Precision, Qualcomm, Fujikura, WNC?Wistron NeWeb?, Auden Techno, USI?Universal Scientific Industrial?, Amkor Technology, ASE Technology, etc.

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 LCP Millimeter-Wave Antenna Module 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 Type, 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 LCP Millimeter-Wave Antenna Module Market, By Region:

United States

China

Europe

Japan

South Korea

ASEAN

India

Rest of World

Global LCP Millimeter-Wave Antenna Module Market, Segmentation by Type:

Passive Array

Phase Array

Global LCP Millimeter-Wave Antenna Module Market, Segmentation by Antenna Array:

1?N

2?N

4?N

Global LCP Millimeter-Wave Antenna Module Market, Segmentation by Frequency Bands:

24–29 GHz

37–43 GHz

57–71 GHz

Global LCP Millimeter-Wave Antenna Module Market, Segmentation by Application:

Smartphones

Cars

Others

Companies Profiled:

Murata

Sunway

Luxshare Precision

Qualcomm

Fujikura

WNC?Wistron NeWeb?

Auden Techno

USI?Universal Scientific Industrial?

Amkor Technology

ASE Technology

TSMC

Panasonic

Taiflex

Zhen Ding Tech. Group

Avary

Key Questions Answered:

1. How big is the global LCP Millimeter-Wave Antenna Module market?
2. What is the demand of the global LCP Millimeter-Wave Antenna Module market?
3. What is the year over year growth of the global LCP Millimeter-Wave Antenna Module market?
4. What is the production and production value of the global LCP Millimeter-Wave Antenna Module market?
5. Who are the key producers in the global LCP Millimeter-Wave Antenna Module market?
6. What are the growth factors driving the market demand?

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