

# Thermal Management for 5G Market to Reach \$18.27 Billion by 2029, Growing at 8.7% CAGR | The Business Research Company

*The Business Research Company's Thermal Management for 5G Global Market Report 2025 - Market Size, Trends, And Global Forecast 2025-2034*

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What Is The Forecast For The Thermal Management For Fifth Generation (5G) Market From 2024 To 2029?

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[The market size for thermal management in the fifth generation \(5G\)](#) has seen a robust growth in the past. It is

set for expansion from \$11.99 billion in 2024 to \$13.08 billion in 2025, indicating a compound annual growth rate (CAGR) of 9.1%. This growth in the historical phase is due to multiple factors such as the growing setup of 5G infrastructure, heightened interest in smart devices, rise in network data traffic, increased heat output from high-frequency devices, and a rising demand for compact and efficient cooling solutions.

In the coming years, the thermal management for the fifth

generation (5G) market is anticipated to witness significant expansion. The market is projected to reach \$18.27 billion by 2029, representing a compound annual growth rate (CAGR) of 8.7%.

Factors contributing to this growth during the forecast period include an increased use of smart devices, rising implementation of small cell networks, the growth in the usage of liquid cooling systems, the surge in demand for passive cooling materials, and the enhanced attention towards energy-efficient thermal solutions. Among notable trends expected during the forecast period are the creation of microchannel coolers, the incorporation of graphene-based materials, the

progression of semiconductors, advances in cooling methods, and the emergence of environmentally sound cooling technologies.

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What Are The Core Growth Drivers Shaping The Future Of The Thermal Management For Fifth Generation (5G) Market?

The escalating need for swift data transfer is anticipated to stimulate [the expansion of the thermal management for 5G market](#) in the future. Swift data transfer relates to the quick movement of substantial data volumes across communication networks - a necessity for functions such as streaming, gaming, and cloud computing. Due to the widespread uptake of applications and services reliant on large amounts of data, which necessitate more swift and dependable network links to operate effectively, the demand for high-speed data transfer is expanding. Thermal management for 5G guarantees optimal heat dispersal and temperature regulation of 5G network equipment, staving off overheating, ensuring consistent performance, and providing dependable high-speed data transfer for applications that rely heavily on data and continuous connectivity across densely populated networks. For example, The Office of Communications (Ofcom), a UK-based governmental department, reported in December 2022 that Northern Ireland's average broadband download speed had increased by 40%, surging to 115 Mbit/s from 82 Mbit/s in 2021, showcasing the growing accessibility and use of quicker internet services. Thus, the escalating need for high-speed data transfer is catalyzing [the expansion of the thermal management for 5G market](#).

Which Companies Are Currently Leading In The Thermal Management For Fifth Generation (5G) Market?

Major players in the Thermal Management For Fifth Generation (5G) Global Market Report 2025 include:

- The Dow Chemical Company
- Honeywell International Inc.
- 3M Company
- Henkel AG & Co. KGaA
- Parker-Hannifin Corporation
- TDK Corporation
- Kyocera Corporation
- Delta Electronics Inc.
- Vertiv Holdings Co.
- H.B. Fuller Company.

What Are The Major Trends That Will Shape The Thermal Management For Fifth Generation (5G) Market In The Future?

Leading businesses involved in thermal management for the 5G marketplace are concentrating on devising innovative products like materials with high thermal conductivity. These materials

are designed to effectively dissipate heat and accommodate 5G equipment's high-speed functionality. High thermal conductivity materials enable fast and efficient heat transfer, thereby aiding in managing surplus heat from electronic elements, ensuring their consistent performance and extended device longevity. For example, U-MAP Co., Ltd., a Japan-based technology company specializing in the creation of high-efficiency materials, introduced Thermalnite in June 2025. This high thermal conductivity fibrous ceramic material is designed to greatly enhance heat dissipation, boost mechanical strength, and fulfill the thermal management needs met by sophisticated electronics, including 5G equipment. It assists manufacturers in maintaining premium device performance whilst avoiding overheating, even within densely-packed and high-powered 5G modules. Incorporating slight quantities of Thermalnite into composite materials can result in a tenfold increase in thermal conductivity, whilst preserving flexibility and minimizing additional weight. This technological progress presents new opportunities in structural design, injection molding, and other manufacturing processes, making it a key solution for future telecommunications infrastructure.

### Comparative Analysis Of Leading Thermal Management For Fifth Generation (5G) Market Segments

The thermal management for fifth generation (5G) market covered in this report is segmented

- 1) By Solution Type: Materials, Hardware Systems, Services
- 2) By Cooling Method: Passive, Active (Air), Hybrid
- 3) By Application: Fifth Generation (5G) Infrastructure, Fifth Generation (5G) Devices, Power And Supporting Systems

#### Subsegments:

- 1) By Materials: Thermal Interface Materials, Adhesives, Graphite, Graphene, Ceramics, Die Attach
- 2) By Hardware Systems: Heat Sinks, Vapor Chambers, Heat Pipes, Fans, Liquid Cooling, Immersion Cooling
- 3) By Services: Thermal Monitoring, Thermal Control, Thermal Design, Thermal Integration

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<https://www.thebusinessresearchcompany.com/report/thermal-management-for-fifth-generation-5g-global-market-report>

### Which Regions Are Dominating The Thermal Management For Fifth Generation (5G) Market Landscape?

In 2024, the Asia-Pacific region dominated the thermal management for fifth generation (5G) market. It is anticipated that North America will experience the fastest growth in the forecasted period. The report encompasses regions including Asia-Pacific, Western Europe, Eastern Europe, North America, South America, the Middle East, and Africa.

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