<Market Research Report>

Market Report on High-Speed/High-Frequency Printed Circuit Boards (PCBs) and Their Materials for 5G Millimeter Wave Base Stations

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Focal points of survey

1. Overview of 5G mmWave base stations, product trends, frequency usage by country/region, and forecast and analysis of global market trends (RU/RRH market forecast, manufacturer share)

2. For high-speed/high-frequency PCBs for millimeter wave base stations, forecasting and analyzing market trends (market breakdown in 2023 and forecasts from 2023 to 2033), along with business trends of manufacturers, technological trends, and supply relations.

-Market breakdown and market forecast

by application(RU, DU/CU, etc.), PCB structure/adoption material type, and by manufacturer (in 2023)

3. For high-speed/high-frequency PCB materials for millimeter wave base stations, forecasting and analyzing market trends (market breakdown in 2023 and forecasts from 2023 to 2033), along with business trends of manufacturers, technological trends, and supply relations.

- Market breakdown and market forecast.

by application(RU, DU/CU, etc.), material type(Resin type for RU, Df class for DU/CU), and by manufacturer(in 2023)

4. High-speed/high-frequency PCB Material Manufacturers' Case Studies (9 Companies)

Surveyed Products/Classification & Surveyed Manufacturers

1. Surveyed Products / Classification

1) High-speed / high-frequency PCB material: PCB material for 5G mmWave base station (Df<0.006)

-(For RU) Material type : PTFE, Hydrocarbon, PPE/PPO/others

-(For DU/CU) Df class : Ultra low loss (Df≤0.003@10GHz), Low loss (0.003<Df<0.006@10GHz)

-Application/Frequency rage: 5G mmWave (24/28/37GHz band) vs. 4G/5G sub6 (less than 6GHz), RU vs DU/CU

2) High-speed / high-frequency PCB: PCB that adopts high-speed / high-frequency PCB material for 5G mmWave base stations.

-Structure: High-frequency hybrid multi-layer PCB, All layer high-frequency multi-layer PCB

-(For RU) Material types of PCB materials for adoption : PTFE, Hydrocarbon, PPE/PPO/others

-(For DU/CU) Df class of PCB materials for adoption: Ultra low loss (Df≤0.003), Low loss (0.003<Df<0.006)

3) Base station (4G/5G sub6/mmWave)

-5G mmWave vs. 4G/5G sub6, RU vs. DU/CU

2. Surveyed Manufacturers

Surveyed products	Manufacturers
Base station & rerated device (Antenna, RU, DU/CU)	Advanced Micro Devices (AMD), Airspan, Anokiwave, DKK, Ericsson, Fujitsu, Hisilicon, Huawei, NEC, Nokia, Qualcomm, Renesas Electronics, Samsung, TMY Technology, ZTE, Others
High-speed / high-frequency PCBs for base stations	AT&S, Daeduck Electronics, FICT, Founder PCB, Gold Circuit Electronics, IsuPetasys, Kingboard Group, Kinwong, Kyocera, OKI Circuit Technology, Shennan Circuits, Somacis, Suntak Technology, Suzhou Dongshan Precision Manufacturing, Terranix, TTM Technologies, WUS Printed Circuit, ZDT, Others
High-speed / high-frequency PCB materials for base stations	AGC Group, Chukoh Chemical Industries, CZZYST, Doosan Electro-Materials, Elite Material, Isola Group, ITEQ, Mitsubishi Gas Chemical, NanYa Plastics, Panasonic Industry, Pillar Corporation, Resonac, Risho Kogyo, Rogers Corporation, Shengyi Technology, TUC, WAZAM, Others

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2. Publication Date: July 11, 2024

3. Format: A4 Size 253 Pages

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*Account Number: 105-1653912,
*Account Name: Japan Marketing Survey Co., Ltd.

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