

RF Acoustic Wave Filters

Patent Landscape Analysis - March 2026

The global IP battlefield is heating up: who are the key players, and which technologies are driving the evolution of RF acoustic wave filters?



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- Type: Patent Landscape Analysis
- Publication: March 2026
- Reference: KM26003

Deliverables

- Database (>15,400 patent families)
- Report (>180 slides)
- Interactive dashboard (optional)

Pricing

- €4,990 - Report+Database
- €7,990 - Report+Database+Dashboard

KEY FEATURES

- **Global patenting trends**, including time evolution of patent publications, countries of patent filings, etc.
- **Main patent assignees and IP newcomers** grouped by geographical area.
- Key players' **IP position** and the relative **strength** of their patent portfolio.
- **IP leadership evolution** of patent assignees 2023 vs 2026.
- Patents categorized by **technological segments** (*SAW, BAW, FBAR, XBAR temperature compensated, TFSAW, composite substrates, piezoelectric layers, etc.*). For each segment: patent portfolio overview, main patent assignees, recent innovations and notable patents.
- **IP profile of 20 key players** (patent portfolio overview, technical coverage, geographical coverage, recent notable innovations, etc.).
- **Excel database** containing all patents analyzed in the report, including **patent segmentations** and hyperlinks to an **updated online database**.
- **Interactive dashboard** enabling free and dynamic exploration of the patent landscape, allowing users to instantly drill down into key insights and tailor the analysis to their specific needs.

RELATED REPORTS

- [RF Acoustic Wave Filters 2024](#)

Evolving Competitive Landscape of RF Acoustic Wave Technologies

RF acoustic wave filters sit at the heart of modern RF front-ends, where growing band counts, carrier aggregation and stringent coexistence constraints are pushing filter requirements well beyond classical "single-resonator performance." As 5G architectures mature and RF front-end modules become more integrated, the competitive focus is shifting from isolated device improvements toward platform-level acoustic engineering, combining materials, acoustic stacks, temperature stabilization, parasitic control and RF packaging into optimized system solutions. This report captures that transition by mapping the RF acoustic wave patent landscape across the entire innovation chain, from piezoelectric materials and resonator technologies to RF filter circuits, multiplexers and RF front-end module architectures.

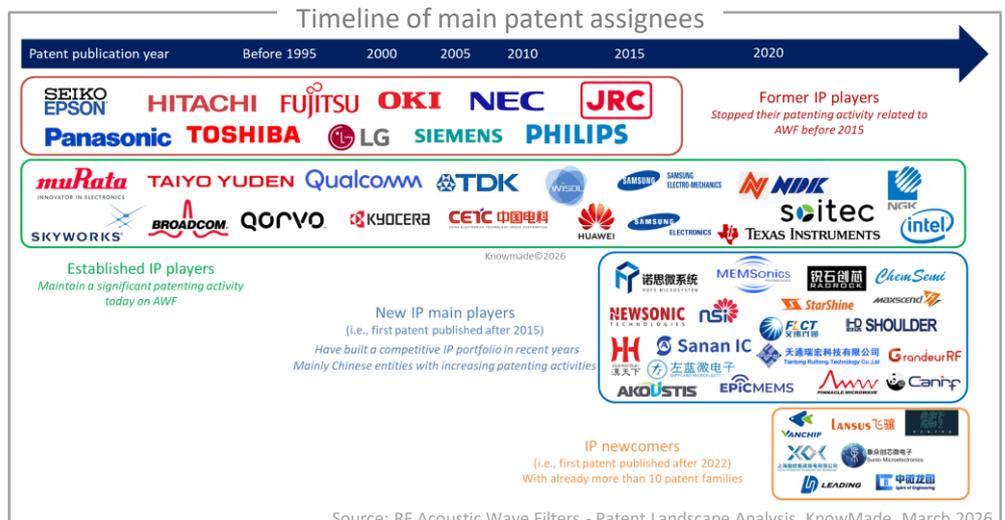
The study analyzes more than **15,400 patent families** (over **34,800 patent publications**). Innovation momentum is strongly post-5G driven, with nearly half of all patent families filed since 2020, confirming a structural acceleration linked to rising RF front-end complexity and new high-frequency platform requirements.

At the same time, the competitive landscape has undergone a clear generational shift, as illustrated by the timeline of main patent assignees. Early pioneers including Hitachi, NEC, and Philips were highly active in the early phases of acoustic filter development but largely stopped filing AWF-related patents before 2015. In contrast, established industry leaders such as **Murata, Qualcomm, Qorvo, Skyworks** and **Samsung** continue to maintain strong patenting activity and form the technological backbone of today's RF filter ecosystem.

Since around 2015, a new wave of emerging players, many of them Chinese entities, has built increasingly competitive portfolios in resonator platforms, materials engineering and RF integration technologies. More recently, a new layer of IP newcomers has appeared after 2022, further increasing competitive density in emerging high-frequency domains such as TFSAW, XBAR and advanced acoustic stacks. The progressive arrival of new actors indicates that the RF acoustic wave landscape is entering a phase of intensified competition, where leadership will increasingly depend not only on portfolio size but also on technological positioning and the ability to scale innovation across the RF front-end value chain.

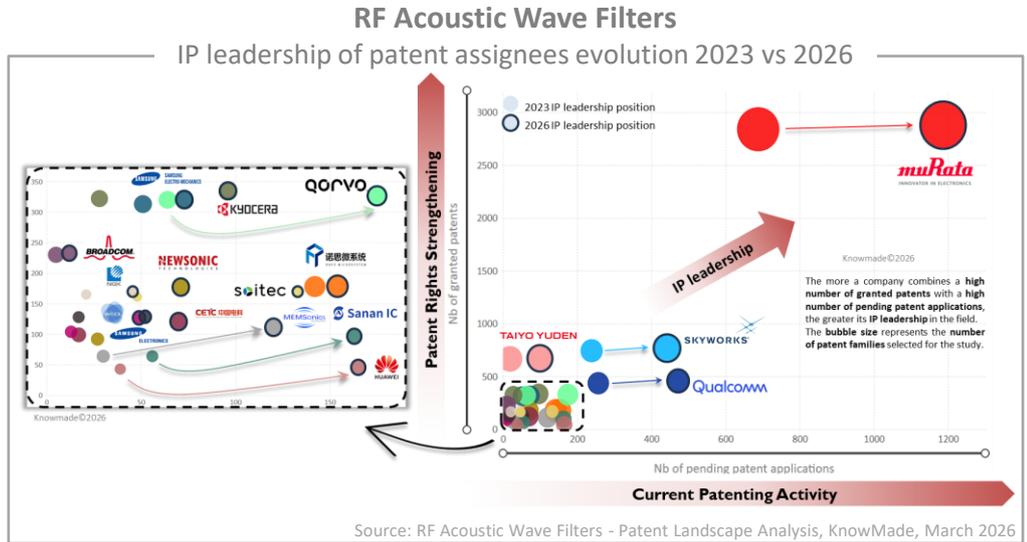
To support both strategic decision-making and competitive benchmarking, the report combines a detailed patent landscape analysis (>180 slides) with a structured Excel patent database covering all selected patent families. It also provides in-depth **IP profiles of 20 strategically important companies**, analyzing their portfolio evolution, technology focus, geographic strategy, granted versus pending balance and notable patents, enabling readers to identify which players are consolidating leadership and which emerging actors are accelerating most rapidly.

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Evolution of players' IP Leadership (2023-2026)

The RF acoustic wave patent landscape is undergoing a gradual shift in IP leadership. While long-established players such as **Murata, Skyworks, Qualcomm** and **Taiyo Yuden** continue to anchor the landscape with strong granted portfolios and long-standing expertise in acoustic filtering technologies, other companies are increasing their patenting activity and expanding their technological coverage across multiple acoustic platforms. In particular, the most dynamic momentum is visible within the **Chinese ecosystem**, where several players have significantly accelerated their filings in recent years. This evolution reflects a progressively more competitive and geographically diversified innovation landscape in RF acoustic wave technologies.

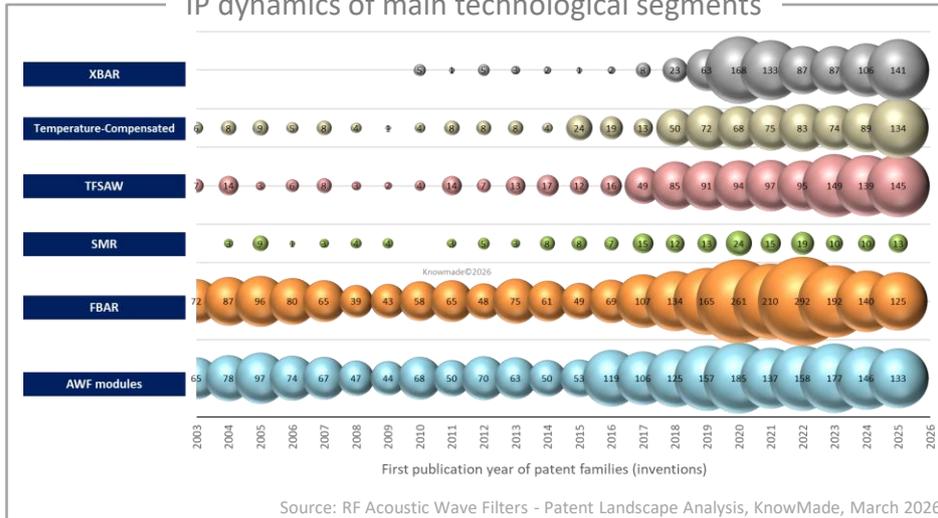


Technology Segmentation and Recent Innovation Trends

The report provides a structured view of innovation across the RF acoustic wave ecosystem through a detailed technology segmentation. Building on the framework introduced in the **2024 edition of the report**, this updated analysis places a particular focus on patents published **since June 2023**, allowing the identification of the most recent innovation directions and emerging technological trends. Innovation activity is organized into **14 technology segments** covering the full acoustic filter value chain. These include key **device platforms** such as SAW, BAW, AWF modules, temperature-compensated AWF, FBAR, XBAR, TFSAW and SMR. The analysis has also addressed enabling technologies including **composite substrate materials** (quartz, sapphire, SiC and diamond) and **piezoelectric layer materials** with dedicated focuses on LN and LT approaches.

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IP dynamics of main technological segments



For each segment, the report provides portfolio analysis, identifies the main patent assignees and highlights **recent innovations and selected notable patents**. This segmentation enables a clear comparison of innovation dynamics across technologies and helps identify which platforms and material strategies are shaping the next generation of RF acoustic wave filter solutions.

In-Depth IP Profiles of Key Players

This report provides detailed IP profiles of **20 strategically important companies**, including **11 global IP leaders and major contributors** as well as **9 companies with strong momentum within the Chinese ecosystem**. For each company, the analysis examines the evolution and positioning of its patent portfolio, including portfolio size, technology segmentation, geographic coverage and the balance between granted and pending patents. The report also highlights **recent innovation directions and selected notable patents**, providing concrete insights into how leading players are advancing RF acoustic wave technologies and shaping the next phase of competition in this field.

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Most established IP players in China



Companies mentioned in the report (non-exhaustive)

Murata, Skyworks, MEMSonic, Newsonic, RadRock (Ruishi Chuangxin), Huawei, CETC, StarShine Semiconductor, Sanan IC, Taiyo Yuden, Qorvo, Qualcomm, Chemsemi, Maxscend, Tiantong Ruihong Technology (Enicom), AIFO, Huntersun, Vanchip, Kyocera, Sappland Microelectronics, Shoulder Electronics, NSI Corp, Shanghai Xinou Integrated Microelectronics, GrandeurRF, Soitec, Wisol, BOE, Beijing Xinxin Semiconductor, Shanghai Institute of Microsystem and Information Technology (SIMIT), Lansus, Anhui Anuki Technologies, EPiCMEMS, Bosch, Samsung Electronics, Beijing Aerospace Micro-Electronics Technology, Beijing Metamaterial Info Tech, Honor Device, Nitto Denko, Soundcore Electronics, Hangzhou Shuxin Electronic Technology, Pinnacle Microwave, AAC Technologies, Samsung Electro-Mechanics, Chenchenchen Technology, ROFS Microsystem, Sunto Microelectronics, Shanghai Novel Si Integration Technology, Shanghai University, Wuhan University, Xintou Microelectronics, Suzhou Zhenxin Microelectronics, Texas Instruments, Xiamen University, Zhongxun Sifang, Fujian Sunwise Semiconductor Technology, Microgate Technology, North Latitude 38th Degree Integrated Circuit Manufacturing, Sinovision, Xiamen Sky Semiconductor, Yunji Xinguang Zhuhai Microelectronics, Zhejiang Huayuan Micro Electronic Technology, Oppo Mobile, Ruisi Microsystems, Zhongwei Longtu Electronic Technology and more.

TABLE OF CONTENTS

INTRODUCTION	5	• Main Technological Segments	83
• Definitions		Overview	
• Scope of the report 2026		Time evolution	
• Context of the report 2026: 2024 IP landscape main results		<u>Eight main technological segments:</u>	
EXECUTIVE SUMMARY	22	▪ RF filter circuit and architecture (multiplexers, etc.)	
PATENT LANDSCAPE OVERVIEW	34	▪ Thin-film Bulk Acoustic Resonator (FBAR)	
• Time evolution of patent publications		▪ Bulk Acoustic Wave - Solidly Mounted Resonator (BAW-SMR)	
• Main patent assignees		▪ Temperature-Compensated Acoustic Wave	
• Timeline of IP players		▪ Thin-film Surface Acoustic Wave (TFSAW)	
• IP leadership of patent assignees and evolution 2023 vs 2026		▪ Laterally Excited Bulk Acoustic Wave (XBAR)	
• Geographical coverage of main players' patents		▪ Composite substrate	
• High-impact patent assignees		▪ Piezoelectric Layer	
• Main co-owned IP		<u>For each main technological segment:</u> Patent portfolio overview, main patent assignees, and recent innovations and notable patents	
• Litigations		IP PROFILE OF KEY PLAYERS	138
PATENT SEGMENTATION	62	• IP Leaders: Murata, Skyworks, Qualcomm, Qorvo, Taiyo Yuden	
• SAW filters	63	• Main IP Players: Kyocera, Broadcom, Samsung Electro-Mechanics, Samsung Electronics, Wisol, Soitec	
Time evolution of patent publications		• China Ecosystem:	
Main patent assignees		Most established IP players in China: Huawei, ROFS Microsystem, MEMSonic	
Newcomers		Other Chinese players: Newsonic, Sanan IC, NSI Corp, Sappland Microelectronics, StarShine, Radrock	
Geographical coverage of main players' patents		<u>For each player:</u> Patent portfolio detailed analysis with summary of recent innovations and notable patents	
IP leadership of patent assignees and evolution 2023 vs 2026		ANNEX	180
Summary		• Methodology for patent search, selection and analysis	
• BAW filters	73	• Terminology	
Time evolution of patent publications		KNOWMADE PRESENTATION	185
Main patent assignees			
Newcomers			
Geographical coverage of main players' patents			
IP leadership of patent assignees and evolution 2023 vs 2026			
Summary			

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