CORPORATE PRESENTATION

Nasdaq AKTS

March 2024



FORWARD-LOOKING STATEMENTS

This document includes "forward-looking statements" within the meaning of Section 27A of the Securities Act, and Section 21E of the Securities Exchange Act of 1934, each as amended, that are intended to be covered by the "safe harbor" created by those sections. These forward-looking statements include, but are not limited to, statements about our estimates, expectations, beliefs, intentions, plans or strategies for the future (including our possible future results of operations, profitability, business strategies, competitive position, potential growth opportunities, potential market opportunities and the effects of competition), and the assumptions underlying such statements. Forward-looking statements include all statements that are not historical facts and typically are identified by use of terms such as "may," "might," "would," "will," "should," "could," "project," "expect," "plan," "strategy," "anticipate," "attempt," "develop," "help," "believe," "think," "estimate," "predict," "intend," "forecast," "seek," "potential," "possible," "continue," "future," and similar words (including the negative of any of the foregoing), although some forward-looking statements are expressed differently. Forward-looking statements are neither historical facts nor assurances of future results, performance, events or circumstances. Instead, these forwardlooking statements are based on management's current beliefs, expectations and assumptions, and are subject to risks and uncertainties. Factors that could cause actual results to differ materially from those currently anticipated include, without limitation, risks relating to our limited operating history; our inability to generate revenues or achieve profitability; the failure of our common stock to meet the minimum requirements for continued listing on the Nasdaq Capital Market, the impact of a pandemic or epidemic or natural disaster, including the COVID-19 pandemic, the Russian-Ukrainian and Middle East conflicts and other sources of volatility on our operations, financial condition and the worldwide economy, including our ability to access the capital markets; increases in prices for raw materials, labor, and fuel caused by rising inflation; our inability to obtain adequate financing and sustain our status as a going concern; the results of our research and development activities; our inability to achieve acceptance of our products in the market; general economic conditions, including upturns and downturns in the industry; existing or increased competition; our inability to successfully scale our New York wafer fabrication facility and related operations while maintaining quality control and assurance and avoiding delays in output; contracting with customers and other parties with greater bargaining power and agreeing to terms and conditions that may adversely affect our business; the possibility that the anticipated benefits from business acquisitions will not be realized in full or at all or may take longer to realize than expected; the possibility that costs or difficulties related to the integration of acquired businesses' operations will be greater than expected and the possibility of disruptions to our business during integration efforts and strain on management time and resources; risks related to doing business in foreign countries, including rising tensions between the United States and China; any cybersecurity breaches or other disruptions compromising our proprietary information and exposing us to liability; our limited number of patents; failure to obtain, maintain, and enforce our intellectual property rights; claims of infringement, misappropriation or misuse of third party intellectual property, including the lawsuit filed by Qorvo, Inc. in October 2021, that, regardless of merit, has resulted in significant expense; our inability to attract and retain qualified personnel; the outcome of current and any future litigation; our reliance on third parties to complete certain processes in connection with the manufacture of our products; product quality and defects; our inability to successfully manufacture, market and sell products based on our technologies; our ability to meet the required specifications of customers and achieve qualification of our products for commercial manufacturing in a timely manner; our failure to innovate or adapt to new or emerging technologies, including in relation to our competitors; our failure to comply with regulatory requirements; stock volatility and illiquidity; our failure to implement our business plans or strategies; our failure to maintain effective internal control over financial reporting; our failure to obtain or maintain a Trusted Foundry accreditation or our New York fabrication facility; and shortages in supplies needed to manufacture our products, or needed by our customers to manufacture devices incorporating our products. These and other risks and uncertainties are described in more detail in the Risk Factors and Management's Discussion and Analysis of Financial Condition and Results of Operations sections of the Company's most recent Annual Report on Form 10-K and in subsequently filed Quarterly Reports on Form 10-Q. Considering these risks, uncertainties and assumptions, the forward-looking statements regarding future events and circumstances discussed in this document may not occur, and actual results could differ materially and adversely from those anticipated or implied in the forward-looking statements. You should not rely upon forward-looking statements as predictions of future events. The forward-looking statements included in this document speak only as of the date hereof and, except as required by law, we undertake no obligation to update publicly or privately any forward-looking statements, whether written or oral, for any reason after the date of this document to conform these statements to new information, actual results or to changes in our expectations.

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AKOUSTIS: A LEADER IN ACOUSTIC RF FILTERS

AT A GLANCE

Founded in 2014, Akoustis designs and manufactures radio frequency ("RF") semiconductor products including patented XBAW® RF filters, resonators, SAW filters, and timing solutions

Leading commercial 2 - 8 GHz BAW RF filter portfolio addresses several large end markets:

- **5G Mobile:** RF components and front-end modules
- Advanced Wi-Fi: Wi-Fi 6, Wi-Fi 6E and Wi-Fi 7
- 5G network Infrastructure: Licensed/Unlicensed
- **Automotive:** Cellular Vehicle-to-Everything ("CV2X") and **GNSS Wi-Fi**
- **Defense and Timing Control:** 2 7 GHz bands

The global leader in "XP3F" high-frequency technology extending micro-acoustic BAW filters beyond 20 GHz (ongoing DARPA partnership)

Product value proposition: high power handling, high frequency, ultra-wide bandwidth operation in ultra-small size

Company-owned 125,000 sq. ft. chip fab facility in NY



HQ: Huntersville, NC

82+ MILLION

RF Products Shipped To-Date

TIER-1 ENGAGEMENTS

Engaged Multiple Tier-1 Customers in 5G Mobile & Infrastructure, Wi-Fi AP, Automotive, and Defense

77%

Year-over-Year Revenue Growth in FY2023

INTEGRATED DEVICE MANUFACTURER (IDM)

Design and Manufacturing **Business Model**

250+ CUSTOMERS[1]

50+ BAW Filter Engagements

~\$13 BILLION

Near-Term Target Addressable Market^[2]

180+

Issued & Pending Patents Plus Significant Trade Secrets[3]

300+ YEARS

Combined Leadership Experience







^[2] Source: Mobile Experts 2022 Report, ABI 2021 Report, Akoustis Estimates.

^[3] As of October 1, 2023. Includes Akoustis issued patents and patent licensed from Cornell University (Press release dated September 7, 2016).





COMPANY SITS AT A STRONG INFLECTION POINT

RECENT BUSINESS HIGHLIGHTS (FROM PR DATED FEBRUARY 13, 2024)

- Received **Wi-Fi 7 design win** from Tier-1 US-based carrier with expected production ramp in September quarter of calendar 2024
- Achieved **Wi-Fi 7 design win and volume orders for two new programs** with current Tier-1 Enterprise Wi-Fi solutions provider with expected production ramp in second half calendar year 2024
- Engaged with a **fifth mobile partner** offering our XBAW[®] foundry process and shipped multiple die for a future multiplexer application in the Mobile market
- Completed redesign of 5G band 41 and 5G US 3.8 GHz Network Infrastructure filter solutions
- Secured a wBMS design win with Tier-1 Automotive product supplier from an Integrated Circuit (IC) reference design expected to ramp in March quarter of calendar year 2025
- Received a Wi-Fi 7 design win and prototype orders from Tier-1 Enterprise Wi-Fi access point ("AP") provider to enable production ramp in second half of calendar year 2024
- Secured a high-volume XBAW° filter order for Wi-Fi 6E design win from Tier-1 consumer AP customer
- Successfully completed Phase 1 of DARPA contract to scale XBAW® technology to 18 GHz; Signed new multi-year, multimillion-dollar contract for Phase 2 of the DARPA COFFEE program
- Secured a **development order from a leading commercial SATCOM company** and brought our **active foundry customer** count to four
- Received Wi-Fi NOW Award with HPE Aruba Networking for Best Enterprise Wi-Fi Solution
- Received a purchase order from Tier-2 5G Mobile and Wi-Fi AP RF front-end module customer for design iterations of three previously shipped designs





AKOUSTIS MANUFACTURING OPERATIONS OVERVIEW



Leverages CHIPS act for ITC (\$3-5M expected in CY2024) and supports new Defense contract business

AKOUSTIS CHIP FAB FACILITY

- **Location:** Canandaigua, NY (Finger Lakes Region)
- Company-owned 125,000 sq. ft. XBAW® filter fab facility with 57-acre campus
- **6-inch** silicon wafer XBAW® process
- **Completed tool capacity expansion** to ~500M filters annually
- **ISO 9001:2015** registered quality management system
- **XBAW® filter process** established in 2018; **WLP** process completed in 2022

Captive manufacturing enables an efficient, predictable, and reliable RF BAW filter supply chain for customers



WIRELESS DEVICES REQUIRE RF FILTERS TO CONNECT



MOBILE DEVICE RF COMPLEXITY INCREASING

Multiband

- **Mobile:** today greater than 40 bands next-generation potentially growing to 100 bands or more
- Wi-Fi: 6 GHz spectrum added to unlicensed bands with Wi-Fi 6E and emerging Wi-Fi 7
- More bands driving greater coexistence filtering needs
- Carrier aggregation and MU-MIMO driving greater selectivity performance

Multimode

- Next-generation 5G devices re-use 2G, 3G, 4G spectrum
- · Expanding high-band spectrum

Multi-Connectivity

- Data speeds driving architecture
- Utilizing unlicensed 5 GHz & 6 GHz spectrum





XBAW® MEETS DEMANDING RF REQUIREMENTS

THERMAL PERFORMANCE

- Improved power handling
- Increased heat removal

HIGH PURITY PIEZOELECTRIC

- High-frequency performance
- Flexible doping
- Periodically-poled nanomaterial

PACKAGING TECHNOLOGY

- Compact solutions for consumer mobile devices
- Standard surface mount process
- Wafer level packaging



HIGH MECHANICAL COUPLING

- Ultra-wide bandwidth
- Novel nanomaterials (PVD & CVD)

MEMS-BASED PROCESS FLOW

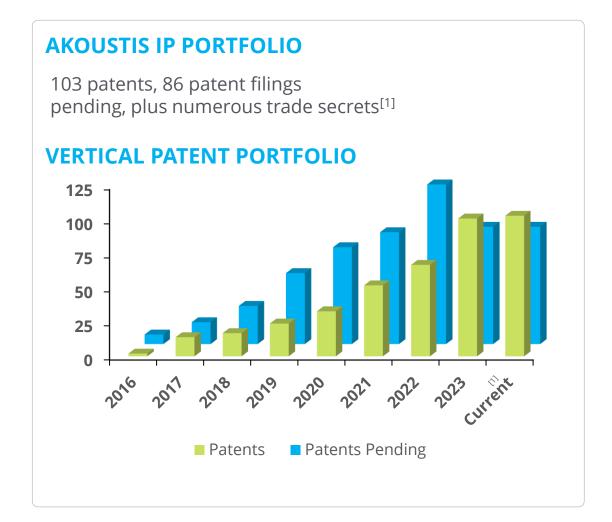
- Enable integration
- Low cost, unique process

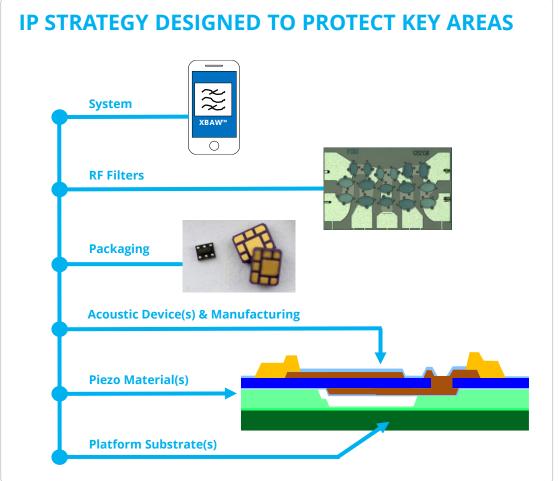
XBAW® is optimized for the most stringent frequency selectivity requirements with superior resonator characteristics, ideal for today's leading-edge Wi-Fi and 5G mobile designs





VERTICAL INTELLECTUAL PROPERTY STRATEGY









TARGET END MARKETS AND AKOUSTIS SOLUTIONS











5G MOBILE

WI-FI

5G INFRASTRUCTURE

AUTOMOTIVE

DEFENSE

	Smartphones, Tablets, Pucks	Routers, Set-Top Boxes, CPE	Base Station, Small Cells	GNSS, SDARS, CV2X, RKE, Bluetooth/ Wi-Fi	Radar, Comms
Akoustis Solutions	1.8-7 GHz BAW Discrete/Multiplexer Filters	2.4/5/6 GHz Wi-Fi 6, 6E & 7 Discrete Filters	1.8-8 GHz Discrete/Multiplexer Filter	Discrete BAW & SAW	2-20 GHz Discrete, Multiplexer, Integrated Switch Filters
Initial Market Penetration	2023	2019	2021	2021	2017
Value Proposition	Size reduction, improve battery life, reduce dropped calls	Size reduction, support 5 & 6 GHz, multiband simultaneous operation	Size reduction, support higher power, improve receiver sensitivity	Improved receive sensitivity and coexistence	Size reduction, support higher power

>\$3 Billion^[2] Low/Medium Volume Market

\$9.9 Billion^[1]

High Volume Market

 ⁽¹⁾ Source: Mobile Experts 2022 Report, Akoustis Estimates.
 (2) Source: Mobile Experts 2022 Report, ABI 2021 Report, Akoustis Estimates.

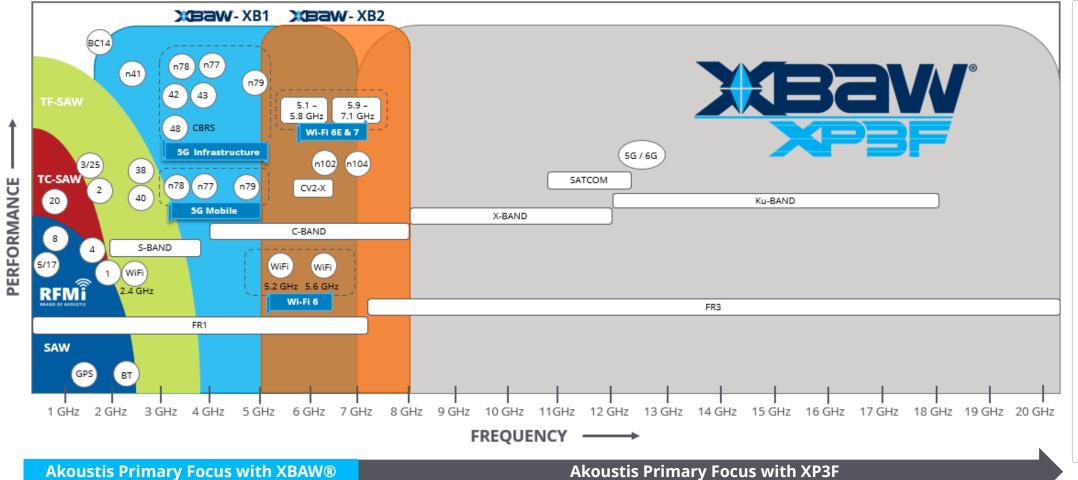


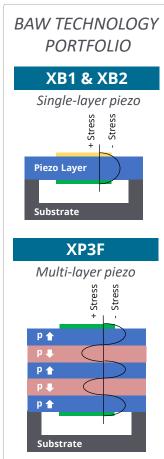
2025 Filter

Market Size



AKOUSTIS TECHNOLOGY SPANNING MHz TO 20 GHz

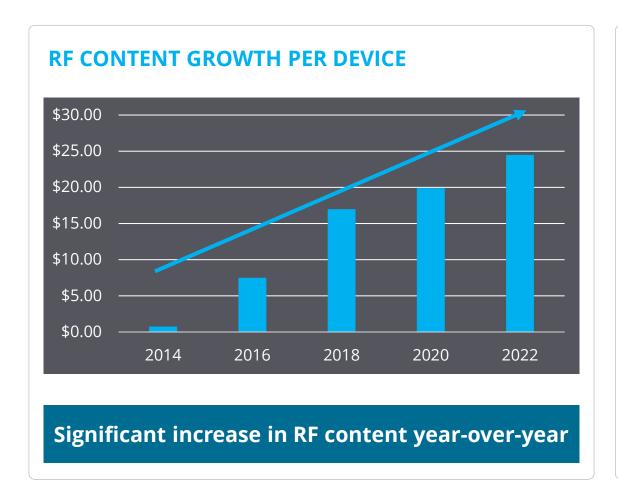


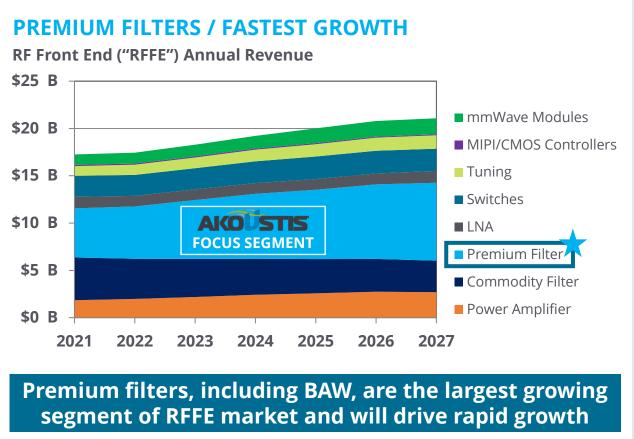






MOBILE RF MARKET DYNAMICS





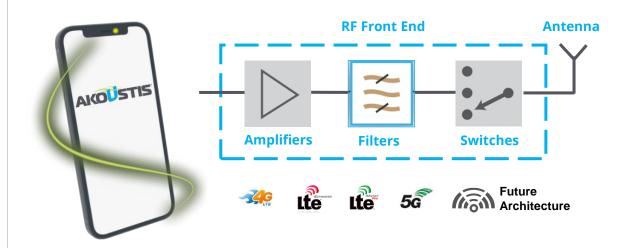




CUSTOMER ACTIVITY: 5G MOBILE & Wi-Fi MOBILE

PROVIDING ACCESS TO PREMIUM FILTER TECHNOLOGY TO TARGET CUSTOMERS

- Announced 1st customer design win (Tier-1)
- **7 customer engagements** including 3 Tier-1 companies
- Qualified internally developed CSP and WLP in Q4 CY2022
- MU-MIMO architectures growing; driving radio and filter content
- Value proposition: power, bandwidth, size (WLP)
- Only US-based pure-play acoustic filter supplier



TARGET CUSTOMERS

OEM / Transceiver

Qualcomm MEDIATEK









SAMSUNG

oppo



RFFE Module / RF Component

muRata

Qualcomm

intel



Meta





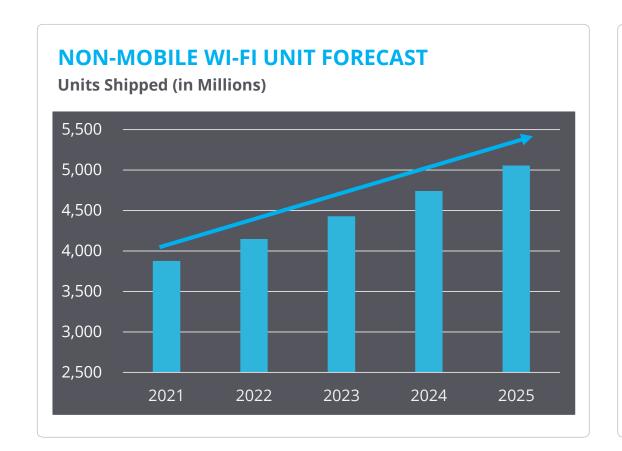
TAIYO YUDEN







NON-MOBILE WI-FI RF MARKET DYNAMICS



MU-MIMO DRIVING WI-FI CONTENT GAINS Units Shipped (in Millions) CAGR 2023 2024 2025 2021 2022 **'21-'25** 1X1 1,241 1,231 1,257 1,329 4% 1,468 2X2 2,497 2,760 2,999 3,228 3,397 8% 3X3 7% 38 41 44 46 49 4X4 91 103 113 120 123 8% 16 8X8 12 14 17 17 9% 3,878 4,148 4,428 4,740 5,055 7% **Total**

Multi-User Multiple-In-multiple-Out ("MU-MIMO") configurations driving massive projected unit growth





CUSTOMER ACTIVITY: Wi-Fi AP

WINNING WITH BROAD, HIGH-PERFORMANCE PRODUCT PORTFOLIO

- 20 Wi-Fi customers in production programs
- Broadest portfolio of BAW filters, more than 12 commercialized and 12 more XBAW® Wi-Fi filters in development
- 35 design wins announced
- Strong position in Enterprise & Carrier, building upon Consumer
- Focus on Wi-Fi 6E & 7 tri-band to penta-band architectures with discrete and diplexer XBAW® filter solutions



TARGET CUSTOMERS

Transceiver¹

MEDIATEK





































OEM / RFFE Module¹







CUSTOMER ACTIVITY: 5G INFRASTRUCTURE

INFRASTRUCTURE ACCELERATING

5G SMALL CELL

- Small cell deployments in 5G expected to outpace earlier generations
- Three 5G small cell infrastructure customers with production ramp which began December 2022; 4 total design wins
- Engaged with 5+ additional OEMs, including multiple Tier-1 customers



Source: Nokia

CITIZENS BROADBAND RADIO SERVICE ("CBRS")

- CBRS to provide last-mile connectivity in the US market
- 3 customers with 4 production orders and
 4 total design wins and ramp began June 2022
- Engaged with 2 additional OEMs



XP3F TARGETING MASSIVE MIMO

- Massive MIMO Base Station ("BTS") market size is significant
- 5G will deploy with 32, 64, or 128 radios per BTS
- Significant power handling advantage with XBAW^{®[1]}
- More demanding environment, longer end-product life cycle

5G NETWORK ARCHITECTURE



TARGET CUSTOMERS







NOKIA

SAMSUNG

MAVENIR











CUSTOMER ACTIVITY: DEFENSE & AUTOMOTIVE

DEFENSE: ELECTRONIC WARFARE

- Focus on S-band, C-band, X-band, and Ku-band
- Discrete, multiplexer & switch filter module (primarily custom designs)
- More demanding environment, longer end-product life cycle
- XP3F addresses critical selectivity & size requirement for Array Architectures







AUTOMOTIVE

- Leverage RFMi position and highlight AEC-Q & PPAP quality
- Promote and expand SAW, XTAL & introduce XBAW solutions
- Addressing discrete, multiplexer & module opportunities in GNSS, SDARS, CV2X, Wi-Fi and 5G/LTE



TARGET CUSTOMERS¹

















































SUSTAINABLE GROWTH ENGINE IN THE EARLY INNINGS



Note: Fiscal Year Ending June 30th.

^{1.} Acquired RFMi majority ownership in Oct. 2021 (Q2-22) and the remaining 49% ownership in Apr. 2022 (FY2022). In addition, acquired GDSI in January 2023 (FY2023).





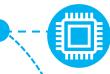
NEW MILESTONES FOR FISCAL Q3 2024 (MARCH QUARTER)

Wi-Fi	Q3 FY24: Ramp XBAW® filter production for Two Programs at Wi-Fi 7 Tier-1 enterprise class OEM Q3 FY24: Ramp XBAW® filter production for Wi-Fi 7 with Tier-1 enterprise class OEM Q3 FY24: Secure design win for Wi-Fi 7 solution with Tier-1 enterprise class OEM		
5G Mobile	Q3 FY24: Deliver the second of three revised Wi-Fi filters to our Tier-2 5G mobile RF front-end module making customer		
5G Network Infrastructure	Q3 FY24: Secure foundry order for development of up to four 5G/4G LTE XBAW® WLP die with Tier-1 SATCOM provider Q3 FY24: Gain approved supplier status in one Tier-1 Infrastructure design win Q3 FY24: Complete NRE development and deliver n104 samples to Tier-1 Network Infrastructure Customer		
Defense, Automotive & Other	Q3 FY24: Deliver new XBAW® PDK to two customers for ongoing foundry engagements Q3 FY24: Complete design and sample new 2.4 GHz Wi-Fi CPE/Automotive XBAW® filters to multiple customers		





SUMMARY HIGHLIGHTS



Leading, High-Performance Portfolio of RF Products

- Comprehensive 2 8 GHz BAW RF filter portfolio and advanced XP3F technology for filters beyond 20 GHz
- Superior technology for high-band and ultra-high band applications
- Performance differentiators versus the incumbents include size reduction, improved battery life, simultaneous multiband operation capacity, lower latency and compatibility with ultra-wide bandwidth



Robust Pipeline / Demand

- Robust customer activity in, Wi-Fi CPE, 5G mobile, 5G infrastructure, automotive, timing control and semiconductor back-end services
- 17 XBAW filter products in production, with 19 new XBAW® filter products in development; 400+ SAW based filter products
- Expect high-volume 5G mobile business ramp



\$13+ Billion Target Addressable Market

- RFFE must meet growing data demands while reducing cost and improving battery life
- Premium filters are the largest growing piece of RFFE market
- RF content per device has grown exponentially from ~\$7.50 in 2016 to ~\$25.00 in 2022⁽¹⁾



Positioned to Continue to Scale

- Company-owned manufacturing facility (tool capability for 500M filters/year)
- Premium back-end semiconductor supply chain services
- Capable of supporting multiple Tier-1 customer ramps
- Recent successful fab and OSAT audit with Tier-1 smartphone/tablet OEM



Significant IP Portfolio and Trade Secrets

- 180+ issued and pending patents plus material trade secrets
- High purity piezoelectric materials are a key differentiator when compared to the incumbent amorphous thin-film technologies
- Strong protection around key aspects of systems, RF filters, packaging, acoustic devices & manufacturing, piezo materials and platform substrates



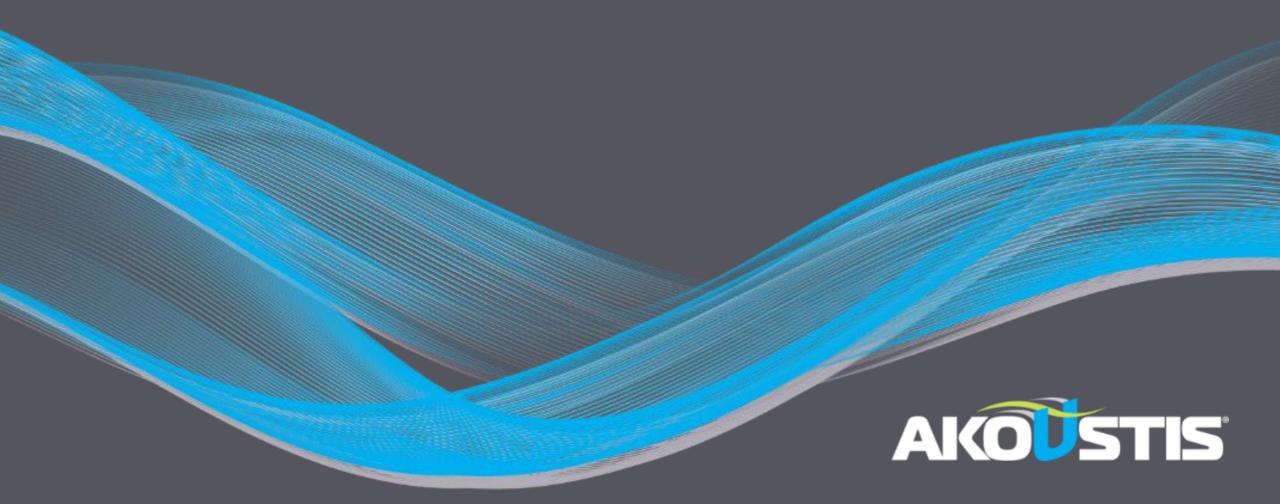
World Class Leadership and Engineering Team

- 40+ RF analog semiconductor design, device, process and manufacturing engineers
- Deep expertise in RF & MEMS; patented & proprietary XBAW RF filter technology
- R&D activities focused on high purity piezoelectric materials and resonator development, materials advancement, RF filter design, high-yield wafer manufacturing and filter packaging





APPENDIX



GDSI—Premium Backend Semiconductor Foundry Services

TRANSACTION OVERVIEW

- 1/4/2023: Akoustis announced acquisition of Grinding and Dicing Services, Inc. ("GDSI") for \$14M in cash and \$2M in stock, with an additional \$4M secured promissory note payable over 3 years
- **Immediately accretive** and adds **high-margin** premium services business supporting over 200 customers
- GDSI delivers in-house back-end processing supply chain to support rapid prototyping of Akoustis XBAW® RF filter chips
- Active "Trusted Supplier" accreditation with the US Department of Defense supports Akoustis' DARPA contract R&D business and national security

COMPANY OVERVIEW

Founded in 1992, Grinding and Dicing Services, Inc. is a US-based provider of premium backend semiconductor supply chain services

- Premier die prep partner utilized by fabless, IDM and pureplay foundry partners
- Provider of guick turn prototype services that optimize yield and cost
- High value / high mix business model



HQ: San Jose, California





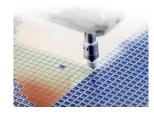


VALUE-ADDED SERVICES



Wafer Dicing

Customized saw dicing program / application of stealth laser dicing process



Wafer Pick & Place

Safe chip extraction for multiproduct wafer layouts with full trace requirements with test maps or simple blind builds



Back Grinding and Polishing

Fully automated 300mm Disco machinery designed for precision and repeatability

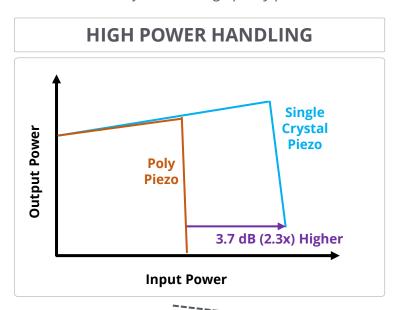


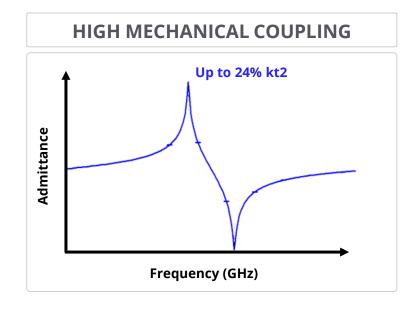


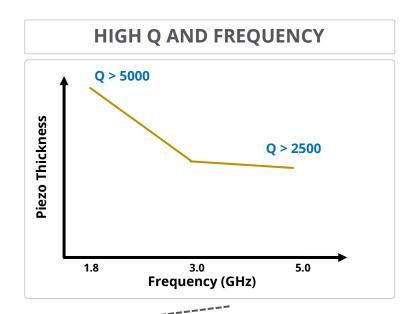
HIGH PURITY PIEZOELECTRIC MATERIAL CAPABILITIES

XBAW® Technology Encompasses Cutting-Edge Polycrystalline, Single-Crystal, and Other High Purity Piezoelectric Materials

Characteristics of Akoustis' high purity piezoelectric materials used to fabricate XBAW® RF filters:





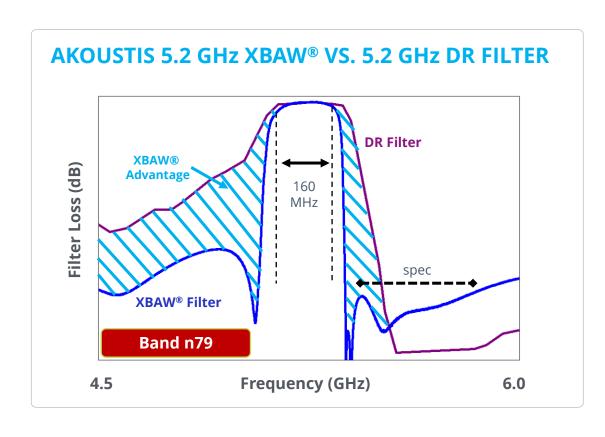


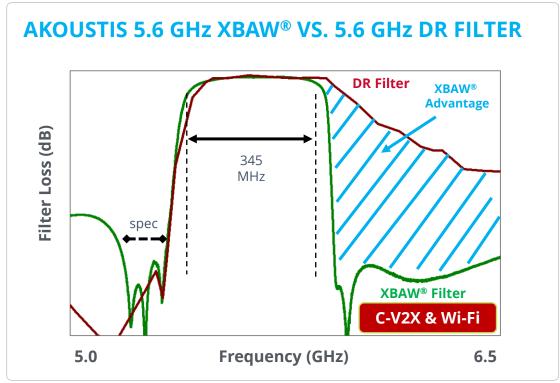
HIGH POWER, WIDE BANDWIDTH RF FILTERS OPERATING HIGH FREQUENCY





XBAW® ADVANTAGES OVER INCUMBENT DR FILTERS

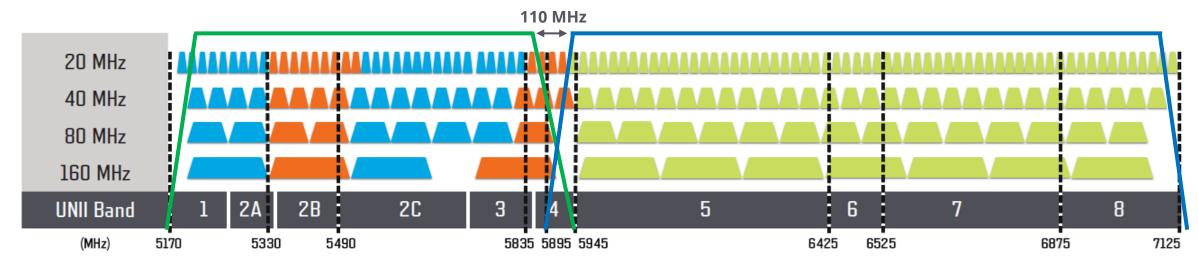




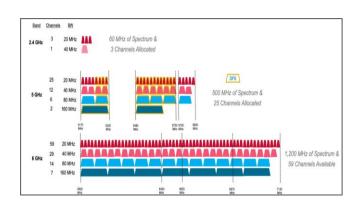




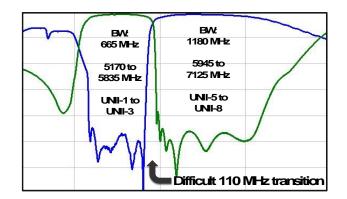
AKOUSTIS LEADING DEVELOPMENT OF WI-FI 6E & 7 FILTERS



U-NII-1 TO U-NII-3



Micro-Acoustic wideband filters cover 5 GHz UNII-1 to 3 and 6GHz UNII-5 to 8



WI-FI 6E/7 VS. WI-FI 6

- Up to **seven** 160 MHz Channels versus **two**
- 2.4 Gbps Vs 400 Mbps
- 2X lower latency
- Ultra-wide bandwidth
- Multiple configurations including tri-band and quad-band
- Future tri-band/quad-band handset designs with MU-MIMO





EXECUTIVE LEADERSHIP



JEFFREY SHEALY
Director, Founder & CEO

Former VP & GM at RFMD (now Qorvo), Co-founded RF Nitro (sold to RFMD), 30+ years industry experience, MBA, PhD



KEN BOLLER
Chief Financial Officer

Corporate Controller & Assistant Secretary at AKTS Controller & Director of Accounting at Ecolab, 30+ years experience, CPA (PA)



KAMRAN CHEEMA Chief Product Officer

Former VP of Engineering at Qualcomm RF360 25+ years of Micro Acoustics experience



DAVE AICHELE
Executive VP Business
Development

Former Director RFMD (Qorvo) & Exec VP Private Company, 30+ years industry experience, BSEE & MBA



MARY WINTERS
Executive VP Fab &

Corporate Operations

Former Director MEMS ITC

Social Engineer Factman

& Senior Engineer Eastman Kodak, 20+ years industry experience, BSCE & MS



DREW WRIGHT

Corporate Secretary & General Counsel

Former senior technology lawyer at IBM and Toshiba GCS. Former M&A / securities lawyer at Parker Poe Adams & Bernstein. 25+ years experience

SEASONED BOARD MEMBERS



JERRY NEAL Co-Chairman, Director

Founded RFMD (now Qorvo); 35+ years RF and wireless industry experience RFMD | Qorvo



ART GEISS Co-Chairman, Director

Former VP Operations RFMD (now Qorvo); previous Alpha Industries (now Skyworks)







STEVE DENBAARS Director

Board member of Aeluma, Co-founded Soraa and Soraa Laser: UCSB Professor and Co-Director of the Solid-State Lightning Center; Expert in III-N Materials







JEFFREY SHEALY Founder, Director & CEO

Former VP & GM at RFMD (now Qorvo), Co-founded RF Nitro (sold to RFMD) 25 years industry experience, MBA, PhD RFMD | Qorvo



SUZANNE RUDY Director

Former VP of Tax and Corp. Treasurer at Qorvo, UNC, UCSB degrees; Financial Expertise RFMD | Qorvo



MICHELLE PETOCK Director

CEO of W Greig & Company; COO of Datum 9 Analytics; Tax law at Shearman Sterling; U Penn, JD from George Washington



J. MICHAEL MCGUIRE Director

Former CEO of Grant Thorton; 20 years with Arthur Anderson; 35+ years community boards

Grant Thornton



JEFF MCMAHON Director

Vice President, Charlotte Market Lead at Experient Group, 25+ years of technology and management consulting experience









