Nasdaq | AKTS

AKOUSTIS

Investor Presentation

December 2021

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, 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, 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," "estimate," "predict," “intend,” “forecast,” “seek,” "potential," "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 forward-looking 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 ability to obtain adequate financing and sustain our status as a going concern; our limited operating history; the results of our research and development activities, including uncertainties relating to semiconductor process manufacturing; the development of our XBAW® technology and products presently under development and the anticipated timing of such development; our ability to protect our intellectual property rights that are valuable to our business, including patent and other intellectual property rights; our reliance on third parties to complete certain processes in connection with the manufacture of our products; product quality and defects; existing or increased competition; our ability to successfully manufacture, market and sell products based on our technologies; the ability to achieve qualification of our products for commercial manufacturing in a timely manner and the size and growth of the potential markets for any products so qualified; our ability to successfully scale our New York wafer fabrication facility and related operations while maintaining quality control and assurance and avoiding delays in output; the rate and degree of market acceptance of any of our products; our ability to achieve design wins from current and future customers; contracting with customers and other parties with greater bargaining power and agreeing to terms and conditions that may adversely affect our business; risks related to doing business in foreign countries; any security breaches or other disruptions compromising our proprietary information and exposing us to liability; our ability to raise funding to support operations and the continued development and qualification of our products and the technologies underlying them; and the impact of a pandemic or epidemic or a natural disaster, including the COVID-19 pandemic, on our operations, financial condition and the worldwide economy, including its impact on our ability to access the capital markets; our ability to maintain effective internal control over financial reporting; and our ability to obtain and maintain the Trusted Foundry accreditation of our New York wafer fabrication facility. 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.

AKOUSTIS AT A GLANCE

Akoustis Wafer Manufacturing Facility
Canandaigua, NY

Shares Outstanding (9/30/21)	51.4M
Debt – (9/30/21)	$0.0M
Cash and Cash Equivalent (9/30/21)	$75.7M

Ticker: AKTS (NASDAQ)

Corporate HQ: Huntersville, NC

Captive Manufacturing: Canandaigua, NY

Founded: 2014

Employees: 169 (as of 9/30/2021)

COMPANY OVERVIEW

- Akoustis Technologies Inc., a commercial stage company, designs and manufactures **patented XBAW™ radio frequency (RF) filters** for the 4G/5G mobile & network infrastructure, WiFi and defense markets
- Differentiating product features include **power handling, bandwidth, size and speed**
- **First BAW RF manufacturing line** completed; producing RF filters from its qualified and released XBAW™ wafer process
- **NEW: Industry-leading commercial 3-7 GHz BAW RF filter portfolio** includes: (a) 5.2 GHz **5.6 GHz, 5.5 GHz & 6.5 GHz, and 5.6 & 6.6 GHz bands for WiFi**, (b) **3.5, 3.6 and 4.9 GHz for 5G infrastructure, multi-watt 3.6 GHz bands for 5G massive MIMO,** and (c) **5 GHz band for Drones**, and (d) **3.0 to 3.8 GHz bands for Radar**
- **NEW: BAW & SAW resonator and crystal products** aimed at large and growing RF timing control market

HIGHLIGHTS

- **Company transitioning from 7 years of Development to Commercialization**
- **$4.3 billion addressable market in 2019** expected to grow to $6.9B by 2024 – the fastest growing segment of $14.8B RFFE (radio frequency front end)[1].
- **Premium BAW filter market serviced today by duopoly**
- **Escalating demands for mobile data** requiring higher frequency spectrum (5G & WiFi)
- **Expanding XBAW™ wafer capacity** to align with high volume commercial markets.
- **Vertically-integrated design and manufacturing (IDM)** business model
- **Seasoned leadership team** & expertise in RF & microelectromechanical system (MEMS)

[1] Source: Mobile Experts (ME) 2019 RFFE, Updated March 2020, ME 2019 Small Cell & Macro, Akoustis Internal Estimates. ABI 2018.

MOBILE DEVICES REQUIRE RF FILTERS TO CONNECT

Mobile device RF complexity increasing

Multiband

- Today greater than 40 bands
- Next generation up to 100 bands
- More bands drive greater coexistence filtering needs

Multimode

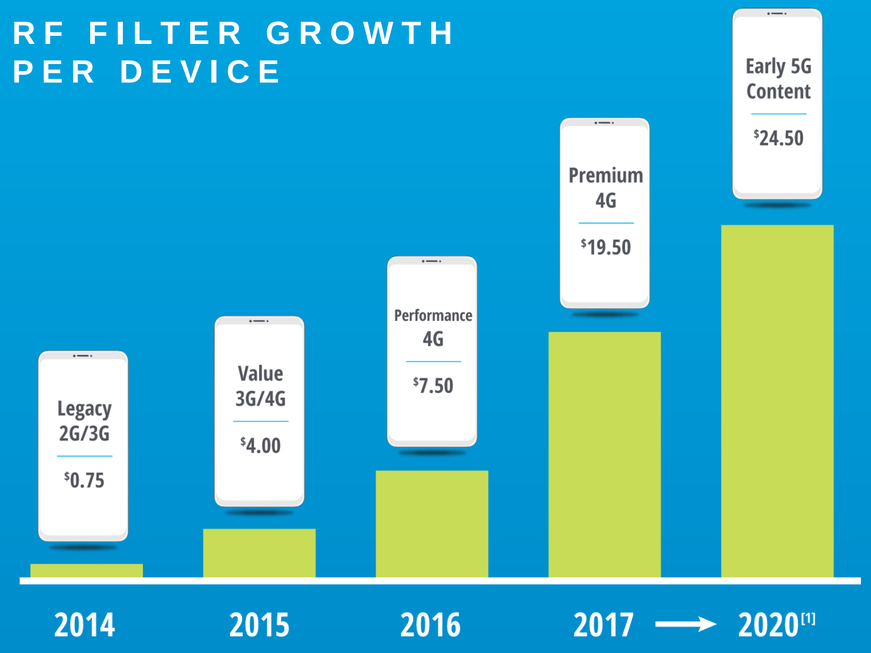
- Next generation 5G devices re-use 2G, 3G, 4G spectrum
- Expanding high band spectrum

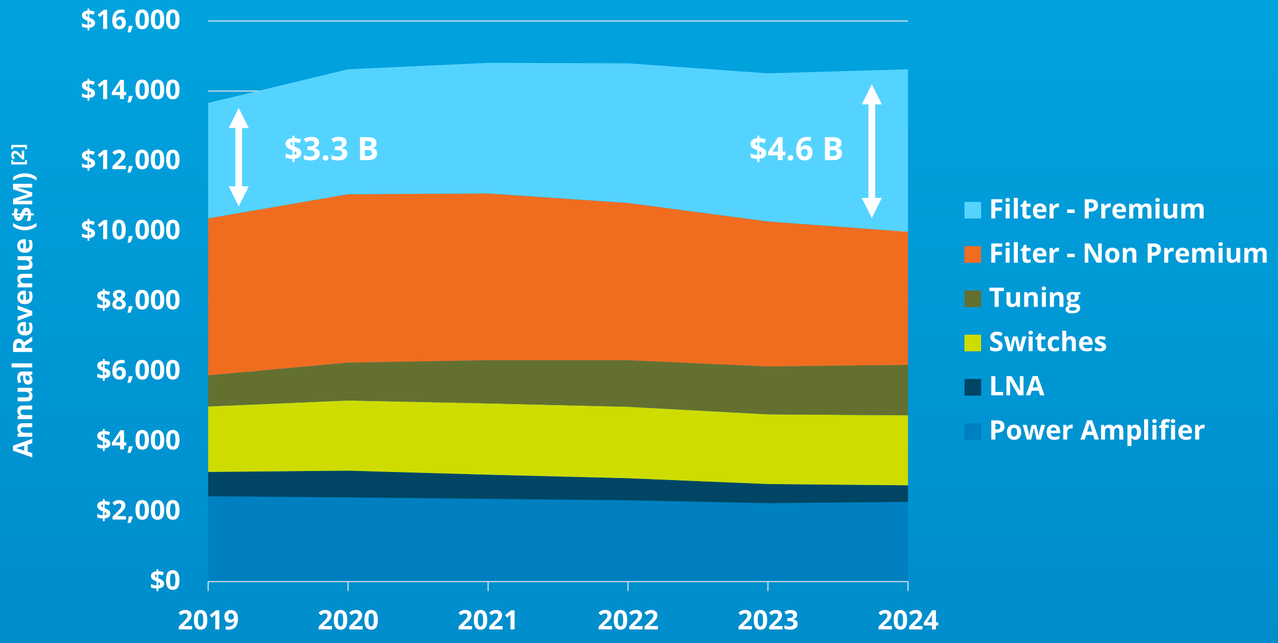
Multi-Connectivity

- Data speeds driving architecture
- Utilizing unlicensed 5GHz spectrum

Akoustis' patented RF filter technology supports Ultra High Band spectrum in smartphones, enabling faster internet speeds

RF MARKET DYNAMICS





RF Filter – FASTEST growing segment in the RF Front End (RFFE)

RFFE market values signal 'selectivity' filters that enable high speed data

[1] Source: Barclays, Semiconductor Market Perspectives, 2017, Akoustis Estimates. [2] Source: Mobile Experts 2020 Report and Akoustis Internal Estimates.

TARGET END MARKETS

4G LTE Mobile

5G Mobile

WiFi

Network Infrastructure

Defense

Application	Smartphones, Tablets, Pucks		Tri-Band Routers, Set-Top Boxes, CPE	FD-MIMO, Small Cells	Radar, Comms
Akoustis Solutions	1.8-3 GHz BAW Discrete/Multiplex Filter	3-6 GHz BAW Discrete/Multiplex Filter	2.4/5.2/5.6GHz BAW Discrete Filter	1.8-6 GHz BAW Discrete/Multiplex Filter	1-10 GHz Discrete, Multiplexer, Integrated Switch Filters
Value Proposition	Improve battery life, reduce dropped calls	Size reduction, improve battery life, reduce dropped calls	Size reduction, support 5 GHz, multiband simultaneous operation	Size reduction, support higher power, improve receiver sensitivity	Size reduction, support higher power
2024 Filter Market Size	**$8.4 Billion[1]** *High Volume Market*			**$2.2 Billion[2]** *Niche Market*	

[1] Source: Mobile Experts 2020 Report, Akoustis Estimates [2] Source: Mobile Experts 2020 Report, ABI 2017 Report, Akoustis Estimates.

WHY XBAW® FOR RF FILTERS?

THERMAL PERFORMANCE

Improved power handling
Increased heat removal

HIGH PURITY PIEZOELECTRIC

High-frequency performance
Turntable stress
Flexible doping

HIGH k^2_t COUPLING

Ultra-wide bandwidth

PACKAGING TECHNOLOGY

Compact solution size
Standard SMT process
Wafer level packaging

MEMS BASED PROCESS FLOW

Enable integration
Unique & flexible
Low cost platform

MOBILE BENEFITS

- Improved power handling
- High performance > 3GHz coexist
- Wideband

WIFI BENEFITS

- Improved power handling
- High performance 5GHz coexist
- Wideband
- Compact footprint

MASSIVE MIMO & SMALL CELL BENEFITS

- uFilter with high power handling
- High performance > 3GHz coexist
- SMT manufacturability

AKOUSTIS

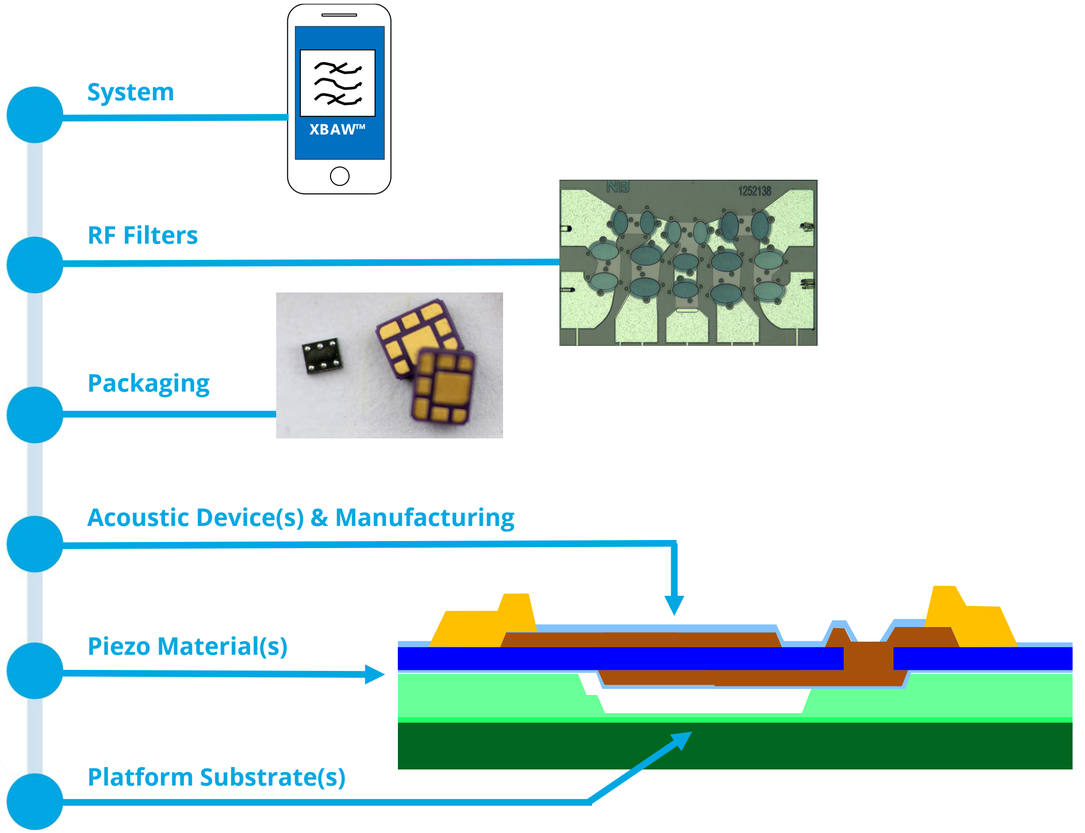
INTELLECTUAL PROPERTY (IP) PORTFOLIO BREAKDOWN

AKOUSTIS IP PORTFOLIO

52 patents, 82 patent filings pending, plus numerous trade secrets [1]

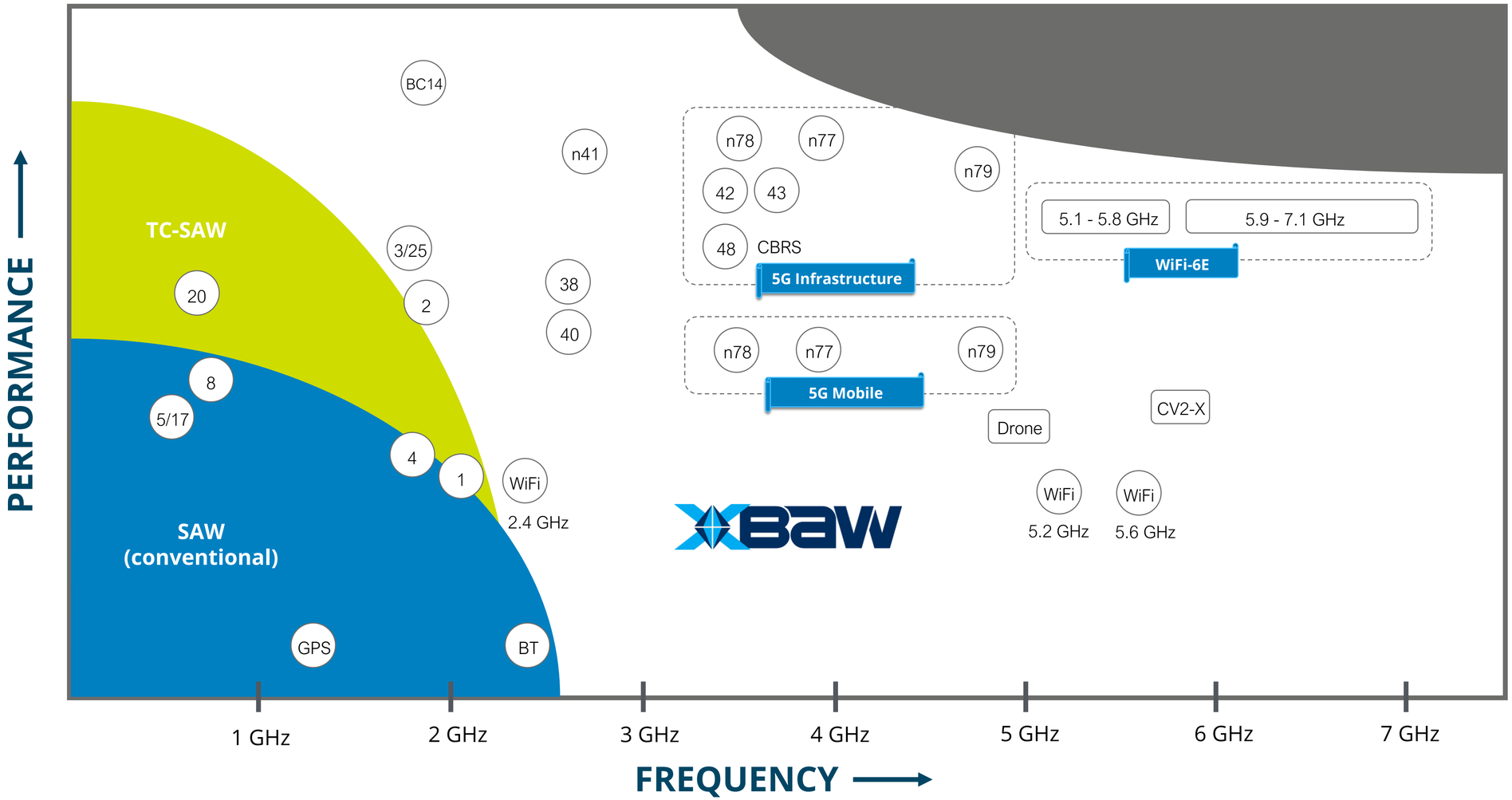
https://www.akoustis.com/patents

VERTICAL IP PORTFOLIO



[1] As of June 30, 2021, Includes Akoustis issued patents and patent licensed from Cornell University (Press release dated 9-7-16).

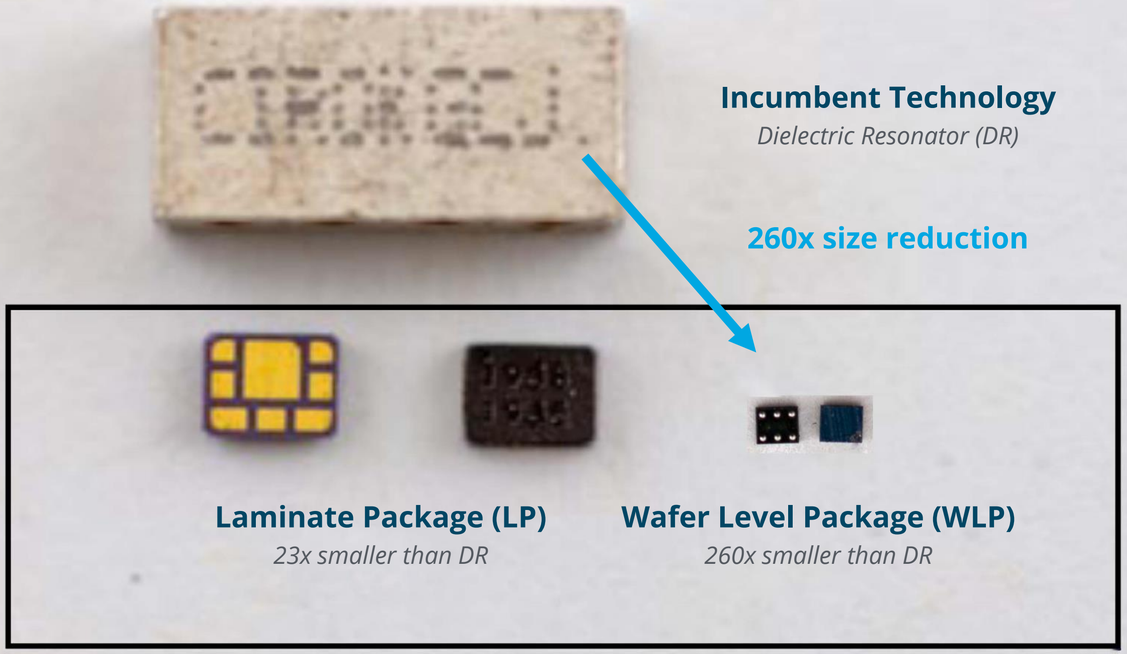
AKOUSTIS TECHNOLOGY OPTIMIZED FOR 5G & WiFi 6E



Source: Charter Equity June 2020 Report, Akoustis

SMALLER FILTERS FOR HIGH GROWTH WIFI CPE

Akoustis enables 260x size reduction for 5 GHz WiFi



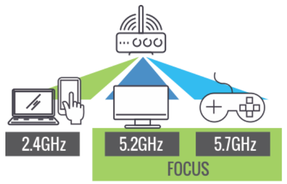
RF filter market for WiFi customer premise equipment (CPE) is expected to grow from $347M (2018) to **$540M** (2021) [1]

GROWTH DRIVERS

1. Tri-Band Architecture

Dual-Band: 2 radios with 2 filters
- *2.4 GHz and 5.6 GHz only*
- *No Coexistence at 5 GHz*

Tri-Band: 3 radios with 3 filters
- *2.4 GHz, 5.2 GHz and 5.6 GHz*
- *Coexistence challenges at 5GHz*



2. Multi-User MIMO Radios [2]

2x2 MIMO: 6 radios with 6 filters
- *4 filters required above 5 GHz*

8x8 MIMO: 24 radios with 24 filters
- *16 filters required above 5 GHz*

3. Mesh Network (Nodes) [3]

2 Nodes: 12 radios with 12 filters
- *8 filters required above 5 GHz*

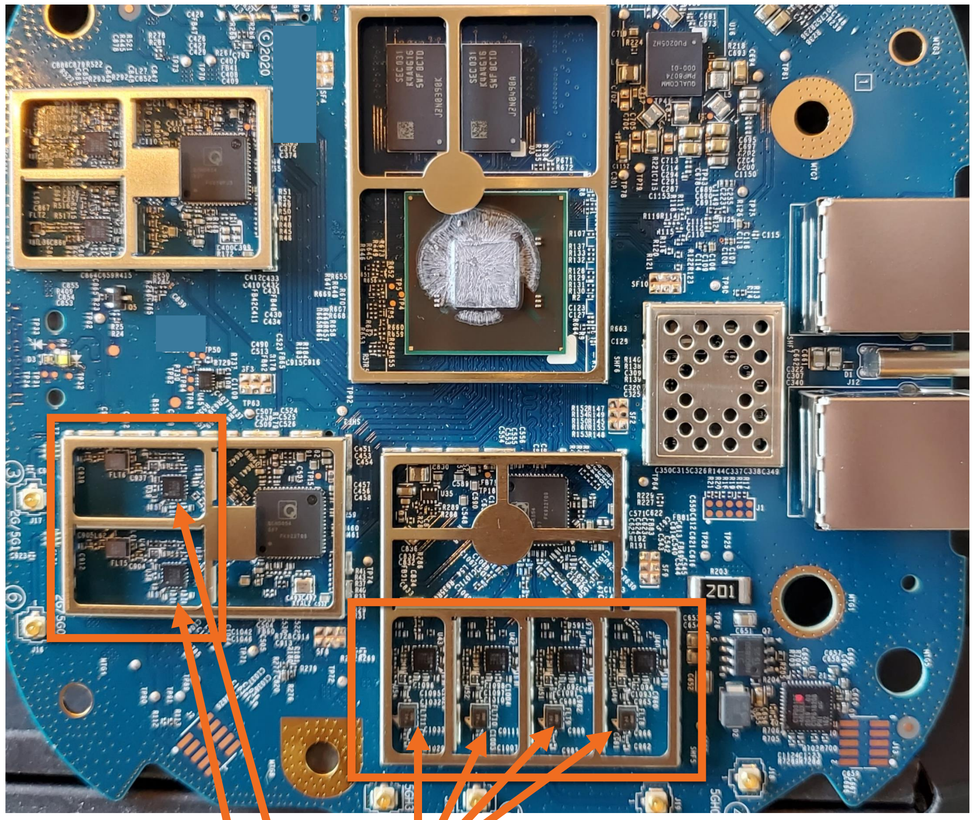
3 Nodes: 18 radios with 18 filters
- *12 filters required above 5 GHz*

[1] Source: Mobile Experts, Akoustis internal estimates [2] Source: Link-Sys AC2200 MU-MIMO Tri-Band Router [3] Source: Link-Sys Velop AC6600 MU-MIMO Tri-Band Router

AKOUSTIS 5.2/5.6 GHz XBAW® vs. CERAMIC DR FILTERS

Akoustis 5.2 & 5.6 GHz Filters

Tri-Band WiFi 6 Architecture

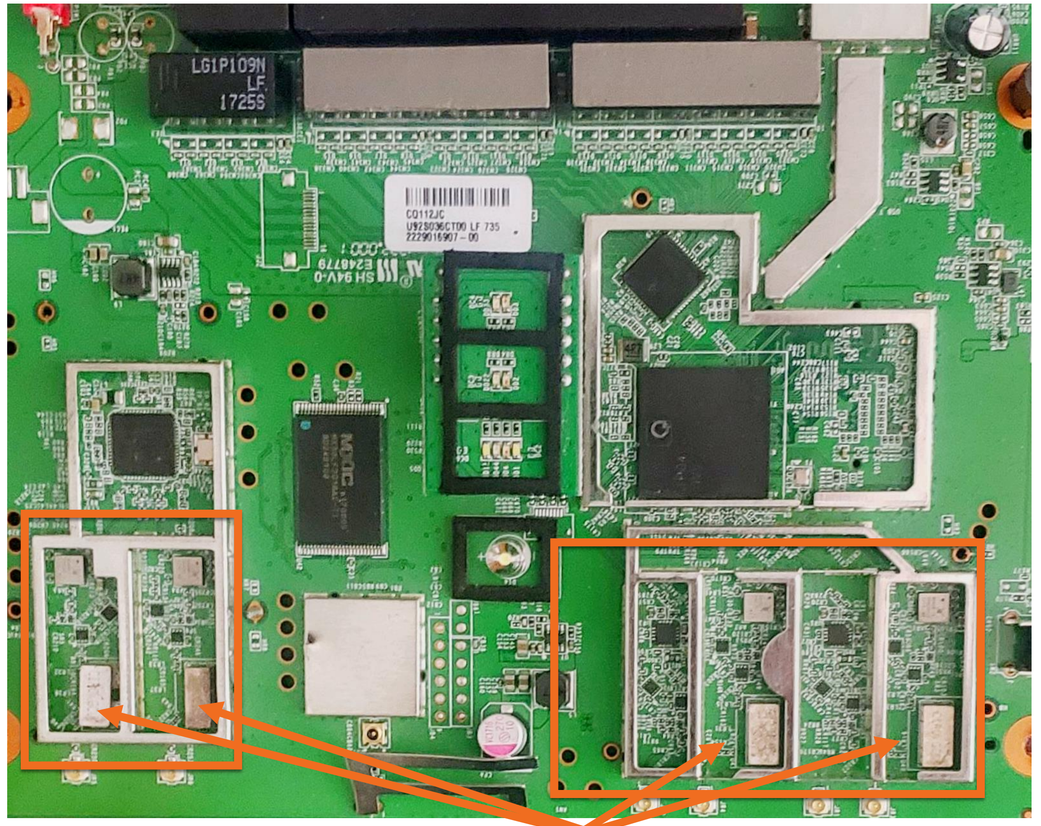


AKTS Filters

23X Size Advantage

Dielectric Resonator Filters & 2.4 GHz BAW

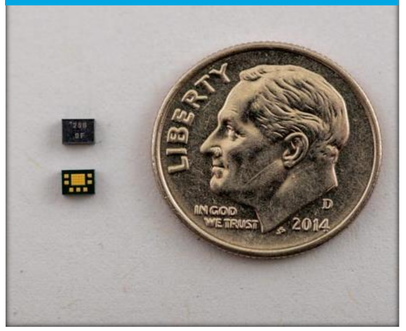
Tri-Band WiFi 6 Architecture



DR Filters

FIRST TANDEM 5.2 GHz/5.6 GHz WIFI BAW FILTER SOLUTION

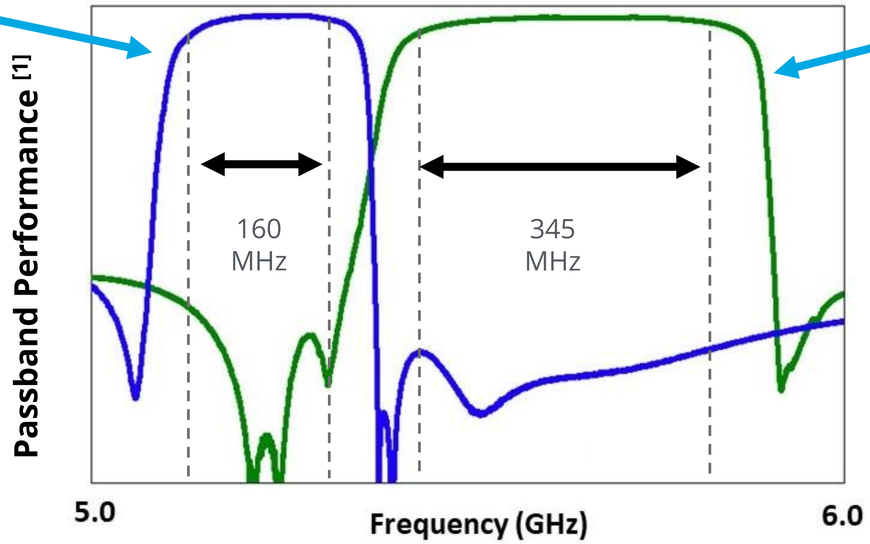
AKF-1252



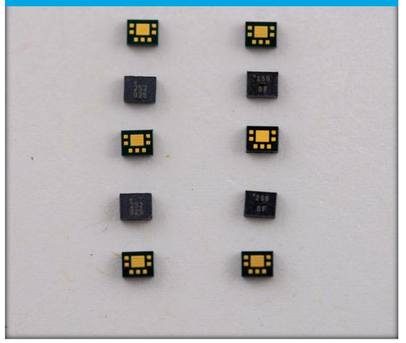
2.5mm x 2mm x 0.9mm

First Design Win Announced
(See 5/04/20 PR)

Akoustis Tandem 5.2GHz/5.6GHz Coexistence Filters



AKF-1256



2.5mm x 2mm x 0.9mm

First Design Win Announced
(See 5/04/20 PR)

TARGET CUSTOMERS

ARRIS · aruba NETWORKS · cisco · intel · NETGEAR · ON Semiconductor · NXP · Qualcomm

Source: Measured Akoustis data of AKF-1252 and AKF-1256 filters.

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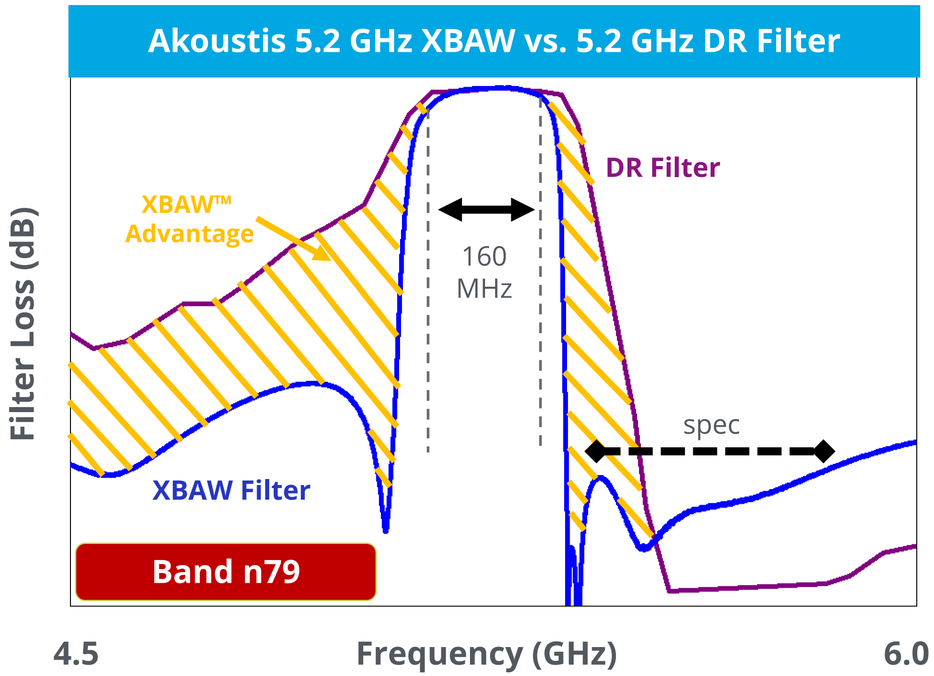
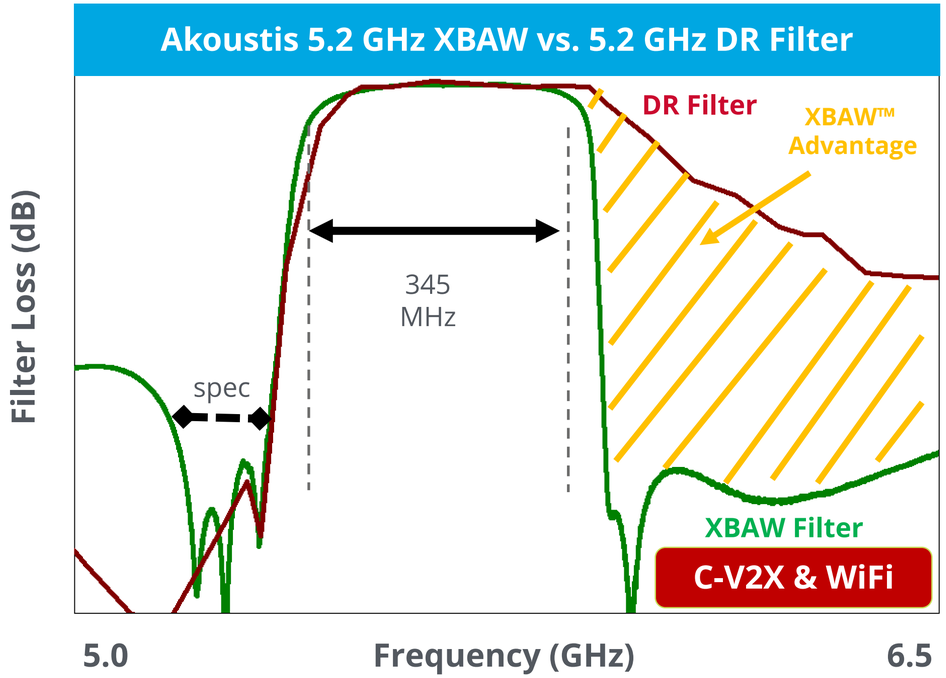
XBAW® ADVANTAGES OVER INCUMBENT DR FILTERS





TARGET CUSTOMERS

ARRIS · aruba NETWORKS · CISCO · intel · NETGEAR · ON Semiconductor · NXP · Qualcomm

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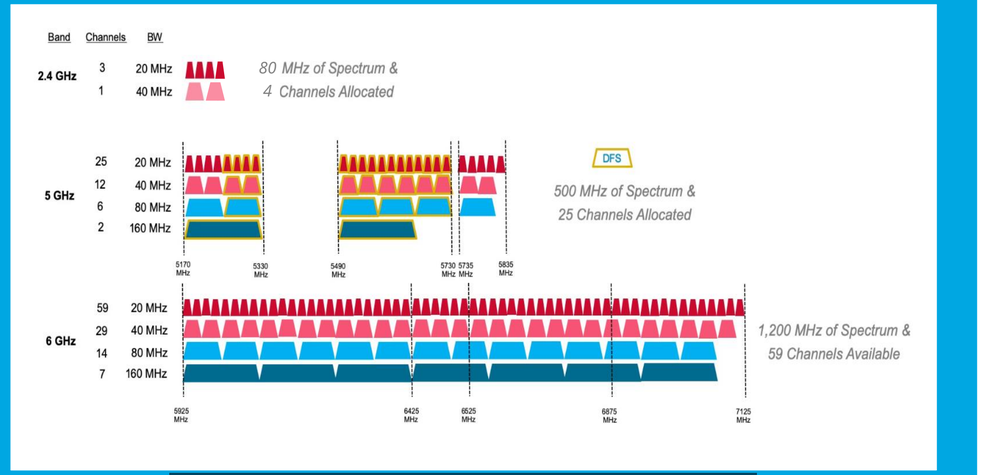
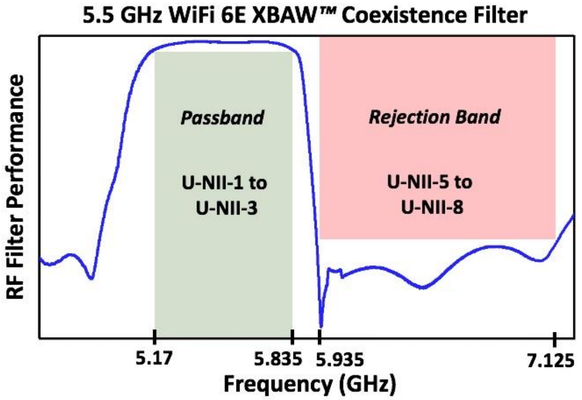
AKOUSTIS LEADING DEVELOPMENT OF WIFI 6E FILTERS

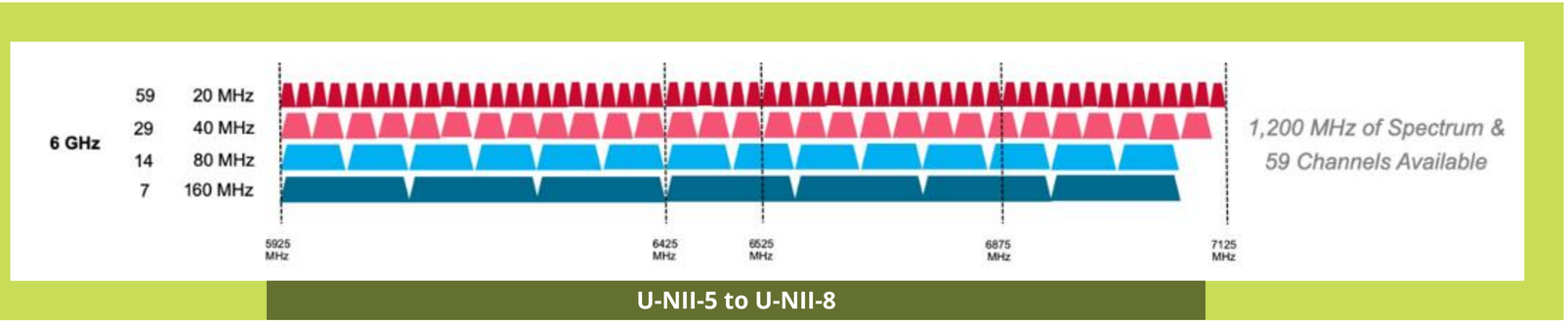


U-NII-1 to U-NII-3

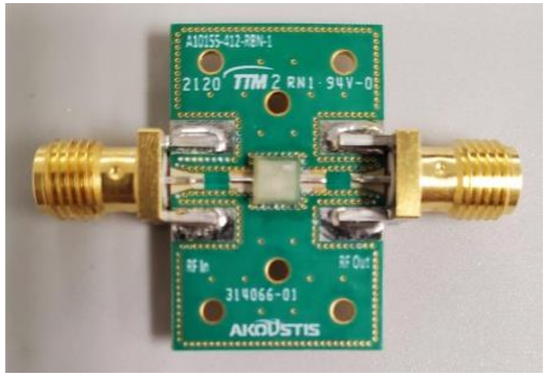


WiFi 6E VS. WiFi 6

- Up to **seven** 160 MHz Channels versus **2**
- 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**



U-NII-5 to U-NII-8



Source: Broadcom

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XBAW® ADDRESSING KEY 5G SMALL CELL BANDS

SMALL CELLS FILL 5G NETWORK GAPS

Small cells will be deployed by carriers, enterprises and consumers

Source: Nokia

5G network gaps driven by higher frequency

Source: Swisscom/Ericsson

PRODUCT FOCUS/MARKET DYNAMICS

- Small cell deployments in 5G expected to outpace earlier generations
- Small cells will deploy with single and multiple frequencies
- Significant power handling advantage with XBAW (1)
- **Received first three design wins with initial 5G small cell infrastructure customer** with product launch anticipated in CY2022
- Received first design win with second 5G small cell customer with product launch expected in CY2022
- **Engaged with 2 additional OEMs** including one tier-1
- More demanding environment, longer product life cycle

TARGET CUSTOMERS

SAMSUNG HUAWEI NEC

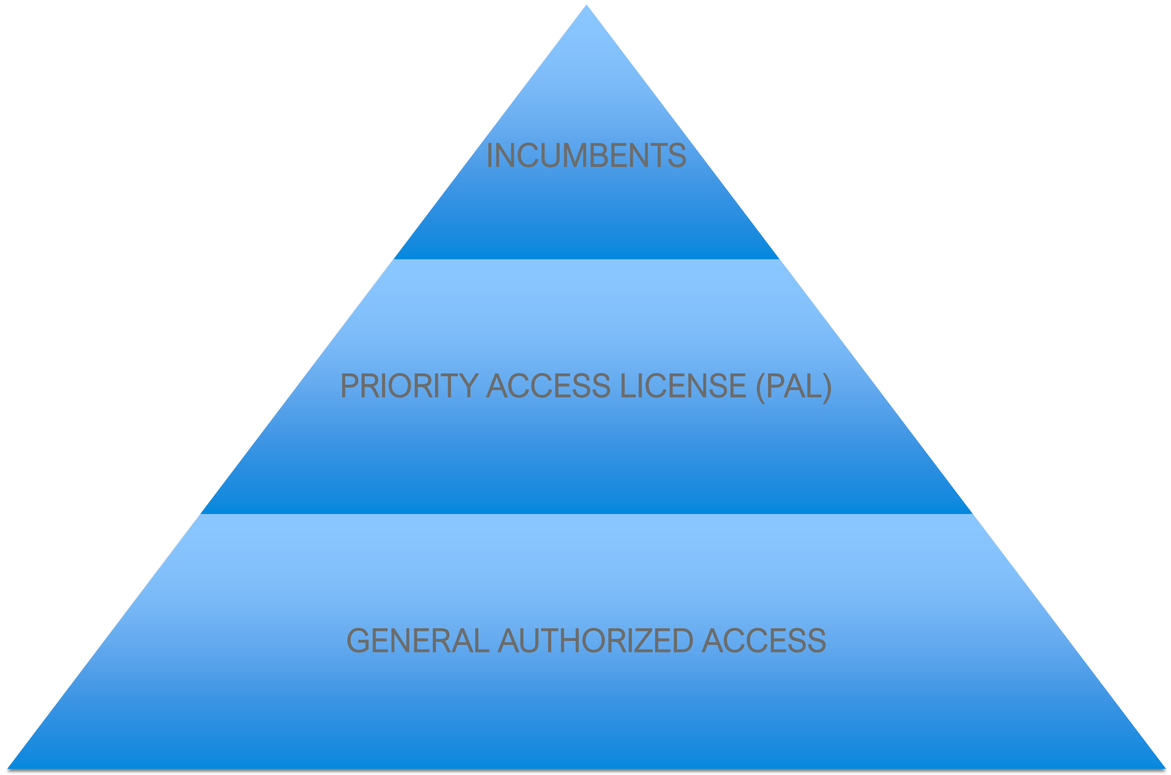
ERICSSON NOKIA ZTE CORNING

Value Proposition | High performance, small form factor filter with high power capability

Source: See Akoustis 2018 IEEE International Ultrasonics Symposium (IUS) Paper for single crystal BAW power performance versus poly crystal BAW.

XBAW® ADDRESSING NEW CBRS NETWORKS

CBRS AUCTIONS BEGAN IN SUMMER OF 2020



PRODUCT FOCUS/MARKET DYNAMICS

- CBRS deployments using 5G expected to accelerate now that the initial auctions have been completed
- AKF-1336 3.6 GHz XBAW® filter completed on early 2020
- **Received first two orders from initial CBRS customer** with product launch anticipated in second half of CY2021
- Received first design win with **second** 5G CBRS infrastructure customer with product launch expected in the first half of CY2022
- **Engaged with 10+ additional OEMs** including tier-1

TARGET CUSTOMERS

SAMSUNG HUAWEI NEC

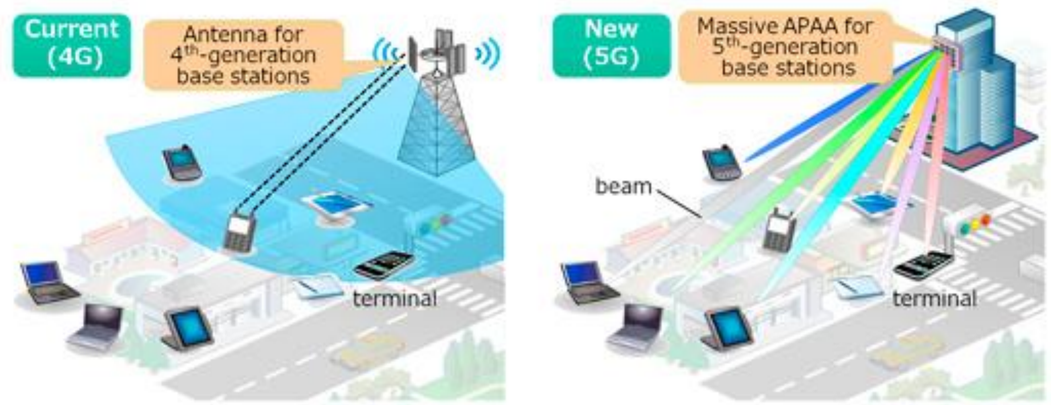
ERICSSON NOKIA ZTE CORNING

Value Proposition | High performance, small form factor filter with high power capability

AKOUSTIS

FILTER POWER IS KEY FOR MASSIVE MIMO BTS

4G VS. 5G NETWORK ARCHITECTURE

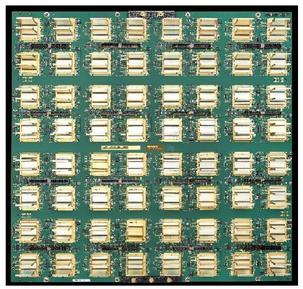


Source: Mitsubishi Electric

Source: Ericsson

64 Element 8x8 Massive MIMO 5G Antenna Array

Each radio requires a separate filter



Source: MACOM

PRODUCT FOCUS/MARKET DYNAMICS

- 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)
- Engaged with first 5G infrastructure customer
- More demanding environment, longer end product life cycle

TARGET CUSTOMERS

SAMSUNG · HUAWEI · NEC · ERICSSON · NOKIA · ZTE · CORNING

Value Proposition | High performance, small form factor filter with high power capability

Source: See Akoustis 2018 IEEE International Ultrasonics Symposium (IUS) Paper for single crystal BAW power performance versus poly crystal BAW.

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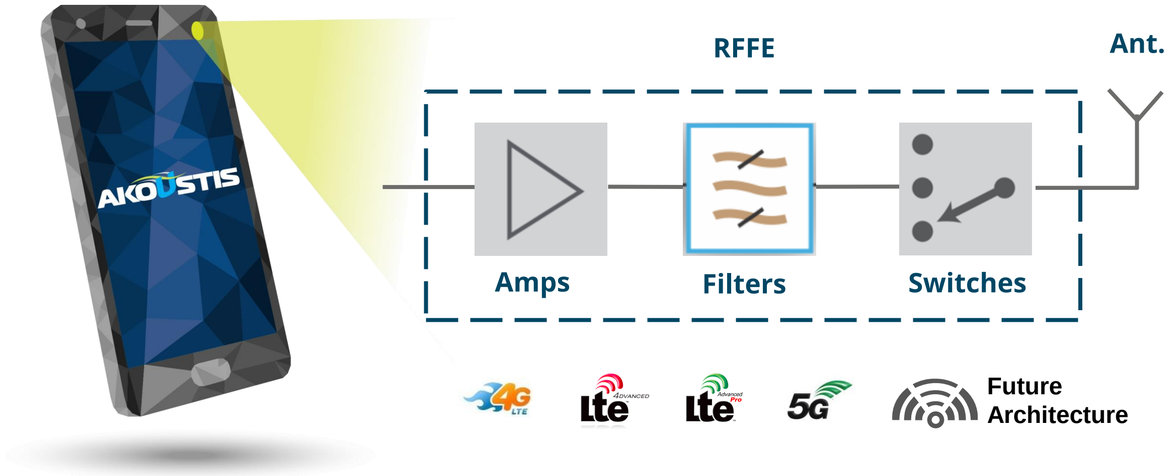
MOBILE WIRELESS / SMARTPHONE



PRODUCT FOCUS/MARKET DYNAMICS

- Booked and shipped 1st ultra-high band (UHB) 5G filter in the quarter ended June 2019
- **Announced customer engagement** and signed a foundry agreement with expected production ramp in late CY2022
- **Announced 2nd customer** development order with expected ramp in CY2022
- **Announced 3rd customer** development order with expected ramp in late CY2022
- **Target qualification of internally developed WLP** (wafer-level-packaging) by the end of Q1CY22
- 5G coexistence filter designs ongoing
- WiFi shift from dual-band to tri-band in mobile
- MIMO/MU-MIMO architectures growing; driving radio and filter content
- Value proposition: power, bandwidth, size (WLP)

TARGET CUSTOMERS

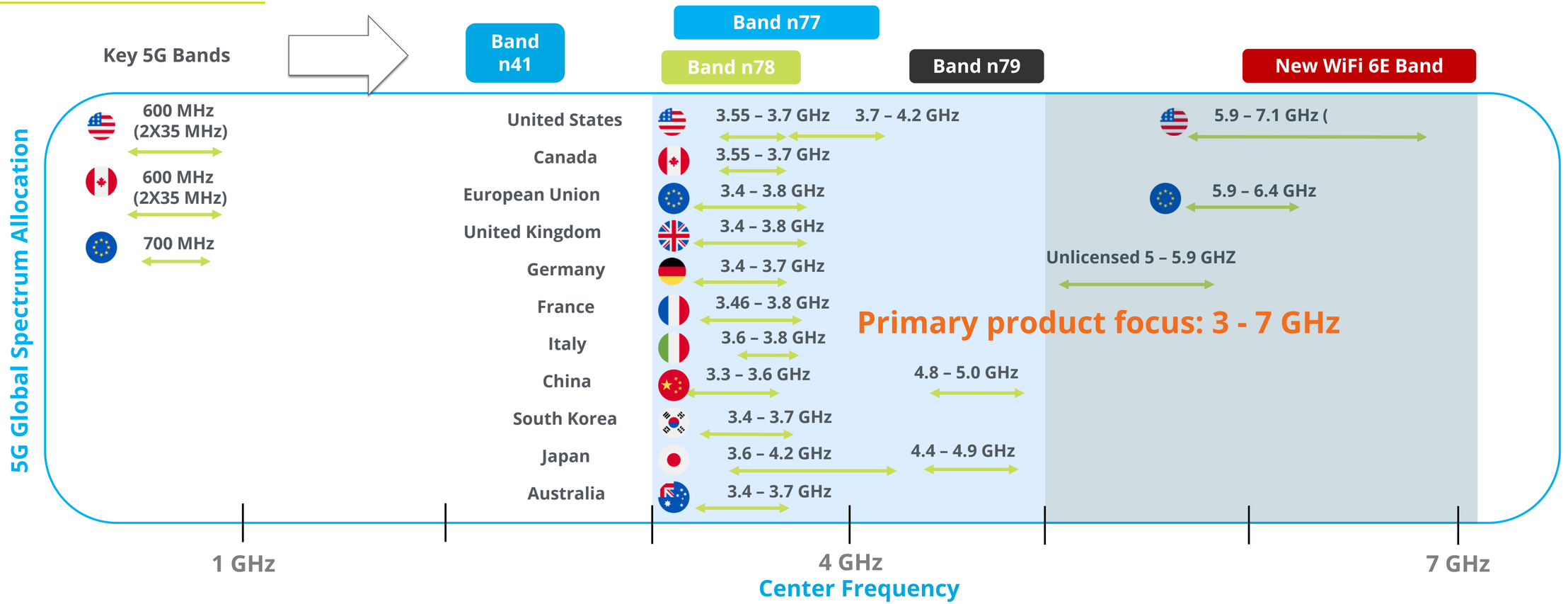
OEM / Transceiver

Google, HUAWEI, oppo, MEDIATEK, vivo, LG, Qualcomm, SAMSUNG

RFFE Module

WISOL, qorvo, SAMSUNG, SKYWORKS, Qualcomm, muRata, VANCHIP, UNISOC

5G & WiFi DEMANDING HIGHER FREQUENCY FILTERS



- 5G brings new spectrum for the expansion of mobile devices and infrastructure
- 5 GHz WiFi offers new market for BAW filters; new 6 GHz spectrum ratified in April 2020
- Akoustis product portfolio focused on 5G and high frequency WiFi bands

Source: Qualcomm, Oct 2017, Huawei, 2017.

New Milestones for Calendar Q4 2021

WiFi	**Q4 CY21:** Exit CY21 with greater than 5 design wins **Q4 CY21:** Receive feedback from PC chipset customer and iterate second diplexer design **Q4 CY21:** Ramp multiple WiFi 6 and WiFi 6E customers
5G Mobile	**Q4 CY21:** Ship 2nd sample to teir-1 RF component customer, deliver two in-spec filter designs **Q4 CY21:** Design-lock and ship pre-production WLP wafer to RF front end module customer **Q4 CY21:** Design-lock internally manufactured WLP products for WiFi 6E & 5G mobile
5G Infrastructure	**Q4 CY21:** Ship volume filter units to both CBRS infrastructure customers for initial ramps **Q4 CY21:** Sample new 5G filter targeting the US 3.7-3.98 GHz spectrum
Other	**Q4 CY21:** Receive order for the development of a new S-Band filter solution for the defense market **Q4 CY21:** Receive order for one advanced multi-chip module for radar application **Q4 CY21:** Continue direct-to-phase-2 DARPA program **Q4 CY21:** Expect $0.5 million to $1.0 million in revenue from RFMi segment

SUMMARY

- Experienced leadership team in RF & MEMS driving commercialization of patented BAW RF filters
- Addressing **premium** segment of $13B RF Front End total market[1] — 5GHz WiFi growing and 5G mobile network accelerating
- IDM business model; Expanding wafer capacity to support growth plan
- Executing on key business milestones:

A. Engaged with three RF component companies for the development of multiple 5G and WiFi XBAW® coexistence filters for mobile devices

B. In production with industry's first tandem 5.2 GHz / 5.6 GHz WiFi filter solution and shipping first 5.5 GHz & 6.5 GHz WiFi 6E modules

C. Shipped four new 5G small cell network infrastructure filters to our tier-1 customer, received three design wins, received order from 2nd small cell network infrastructure customer, announced two CBRS design wins

D. Won new DARPA SBIR contract to further develop XBAW™ technology

Source: Mobility Experts 2019 Report

About Akoustis

Management & Board of Directors, Facilities

EXECUTIVE LEADERSHIP & PARTNERS

Jeffrey Shealy
Director & CEO

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

Ken Boller
Interim CFO

Corporate Controller & Assistant Secretary
at AKTS Controller & Director of Accounting at Ecolab, 25 years experience, CPA (PA)

Rohan Houlden
Chief Product Officer

Former GM at Qorvo & Product Line Manager at Conexant, 29 years industry experience, BSEE, MBA

David Aichele
Executive VP Business Development

Former Director RFMD (Qorvo) & Exec VP Private Company, 23 years industry experience, BSEE & MBA

Mary Winters
VP Wafer Fab

Former Director MEMS ITC & Senior Engineer Eastman Kodak, 18 years industry experience, BSCE & MS

Tom Sepenzis
VP Corporate Development

Former Wall Street Analyst Northland, Oppenheimer, Piper Jaffray
25 years capital markets experience

Rob Dry
VP Operations & Test

Former Director RFMD (Qorvo) & Exec VP Private Company 23 years industry experience, BSEE & MBA

Joel Morgan
VP Quality

Former Head of Quality for United Silicon Carbide & Head of Global Quality at Qorvo, BSEE

Colin Hunt
VP Worldwide Sales

Former VP & Director at RFMD (now Qorvo) and pSemi, a MuRata company. 28 YRS experience. HNC – Avionics (RAF-UK)

SEASONED BOARD MEMBERS

Jerry Neal
Co-Chairman, Director

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

rfmd + qorvo
RFMD + TriQuint = Qorvo

Steve Denbaars
Director

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

SORAA · UCSB · SORAALASER

Suzanne Rudy
Director

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

rfmd + qorvo
RFMD + TriQuint = Qorvo

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
RFMD + TriQuint = Qorvo

Art Geiss
Co-Chairman, Director

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

SKYWORKS · ALPHA INDUSTRIES

Jeff McMahon
Director

Director at North Highland, 17+ years management consulting experience

northhighland. HIGHLAND WORLDWIDE

J. Michael McGuire
Director

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

Grant Thornton · Andersen Consulting, Arthur Andersen & Co., S.C.

AKOUSTIS

QUALIFIED XBAW™ WAFER FAB – CANANDAIGUA, NY

- **120,000 sq. ft.** XBAW Filter Fab Facility
- **150-mm** Si Wafer Process
- **Scalable** to 150,000 6” wafer starts per year
- **ISO 9001:2015** registered quality management system
- **XBAW filter process established July 2018**
- Captive manufacturing enables **Integrated Design and Manufacturer (IDM) business model**