



Corporate Presentation

May 2022



FORWARD-LOOKING STATEMENTS

This document includes “forward-looking statements” within the meaning of Section 27A of the Securities Act, and Section 22E 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 the 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.

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AKOUSTIS AT A GLANCE



Shares Outstanding (12/31/22)	55.2M
Debt – (3/31/22)	\$0.0M
Cash and Cash Equivalent (3/31/22)	\$55.9M

Ticker: AKTS (NASDAQ)

Corporate HQ: Huntersville, NC

Captive Manufacturing: Canandaigua, NY

Founded: 2014

Employees: 181 (as of 3/31/2022)

COMPANY OVERVIEW

- Akoustis Technologies Inc., a commercial RF semiconductor product company, designs and manufactures **patented XBAW™ radio frequency (RF) resonators and filters** for the 4G/5G mobile & network infrastructure, Wi-Fi, timing control, and defense markets
- Differentiating product features include **power handling, bandwidth, size and speed**
- **Expanded BAW RF manufacturing line by 5X in 2021** ; ramping RF filters from qualified 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 Wi-Fi, (b) 3.5, 3.6 and 4.9 GHz for 5G infrastructure, multi-watt 3.6 GHz bands for 5G massive MIMO, (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

- Premium BAW filter market serviced today by a few captive RF module makers: **multiple RF module companies lack access to high performance BAW**
- **\$4.3 billion addressable market in 2019** expected to grow to \$6.9B by 2024 – the fastest growing segment of \$18.3B RFFE¹
- **Escalating demands for mobile data** requiring higher frequency spectrum (5G & Wi-Fi)
- **Vertically-integrated design and manufacturing (IDM)** business model
- **Seasoned leadership team** & expertise in RF & microelectromechanical system (MEMS)

MOBILE 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 drive greater coexistence filtering needs
- Carrier aggregation and MU-MIMO driving greater selectivity performance

Multimode

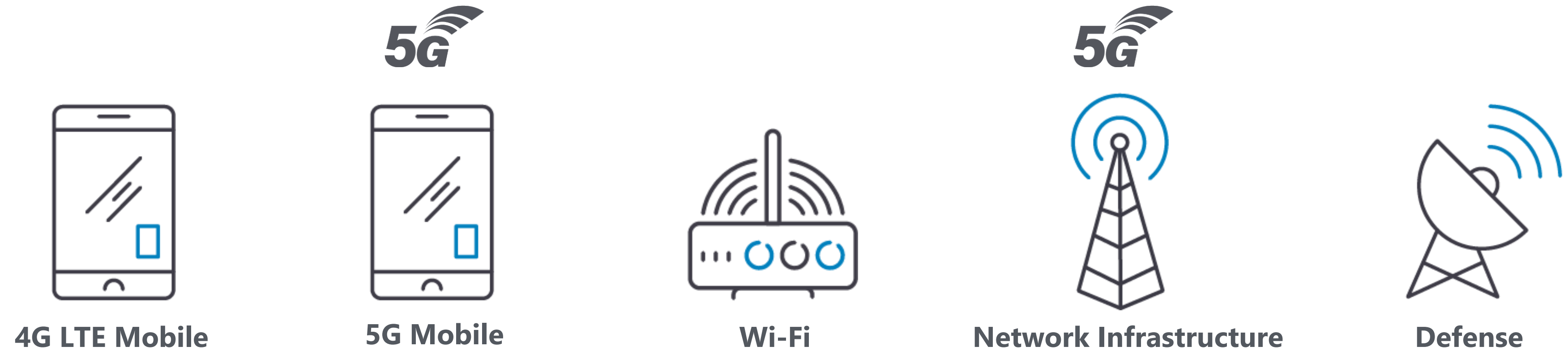
- Next generation 5G devices re-use 2G, 3G, 4G spectrum
- Expanding high band spectrum

Multi-Connectivity

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

Akoustis' patented RF filter technology supports Ultra High Band spectrum in smartphones, Wi-Fi and other wireless devices, enabling faster internet speeds

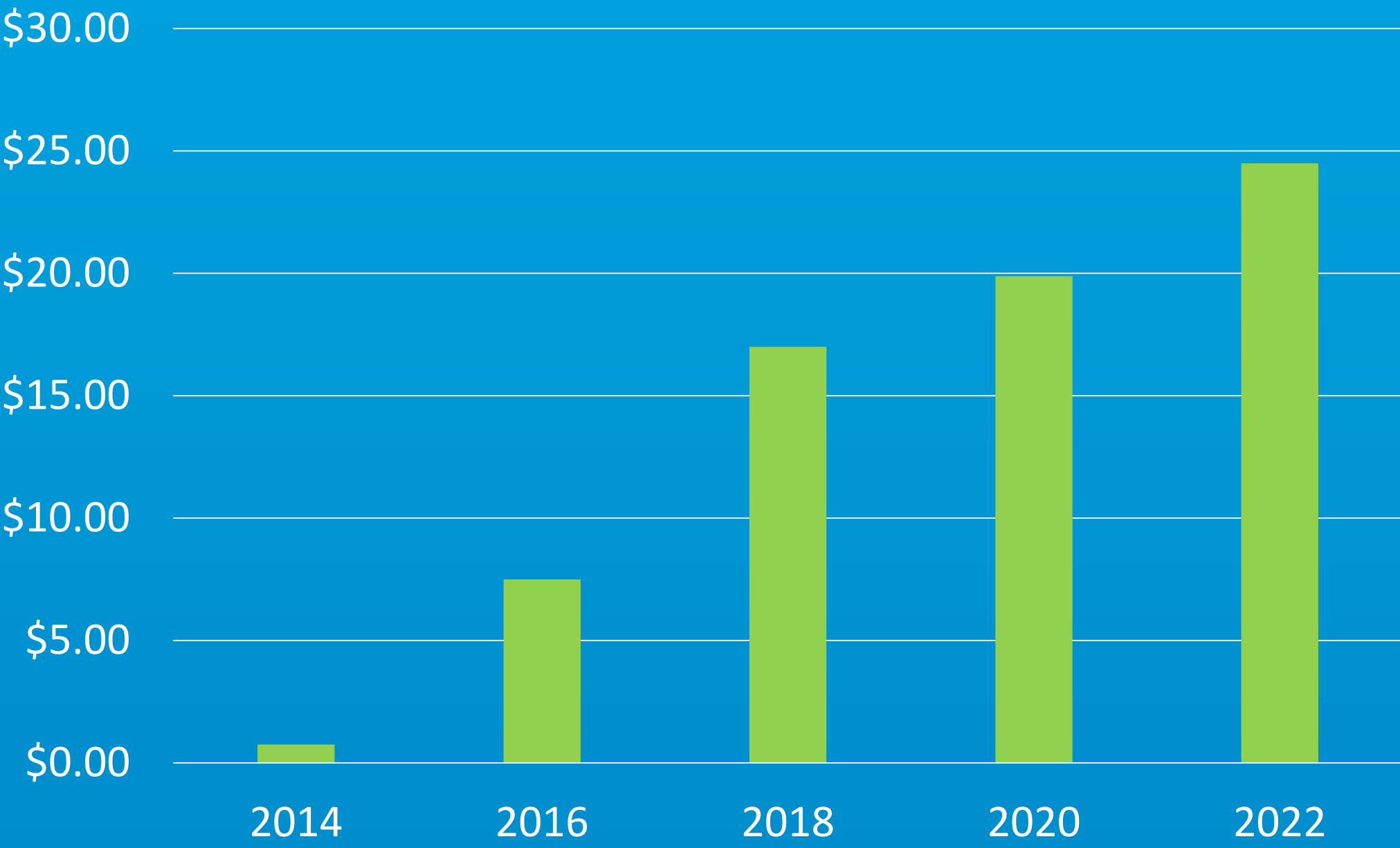
TARGET END MARKETS



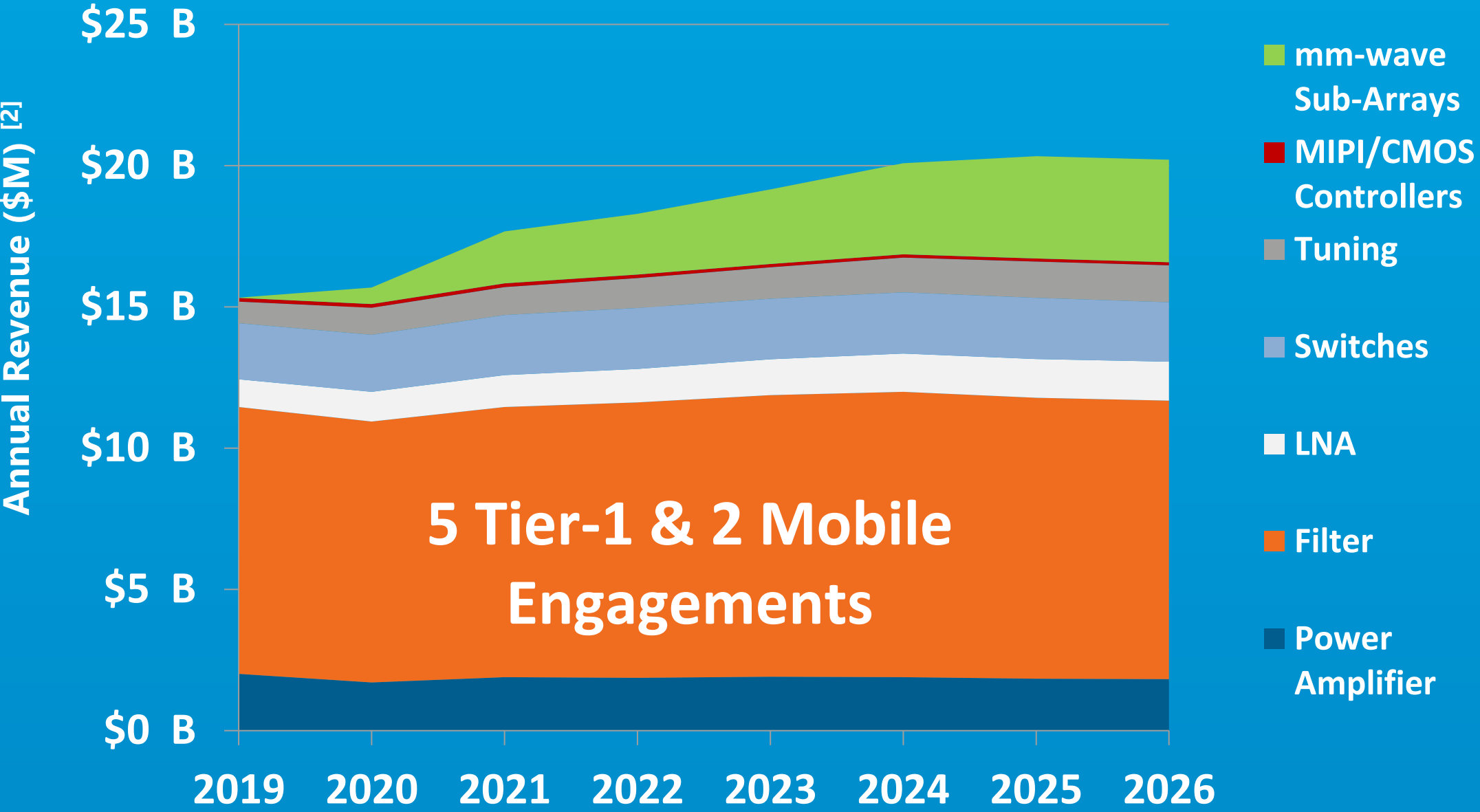
Application	Smartphones, Tablets, Pucks		Tri-Band Routers, Set-Top Boxes, CPE	FD-MIMO, Small Cells	Radar, Comms
Akoustis Solutions	1.8-3 GHz BAW Discrete/Multiplex Filter	3-6 GHz BAW Discrete/Multiplex Filter	2.4/5.2/5.6GHz BAW Discrete Filter	1.8-6 GHz BAW Discrete/Multiplex Filter	1-10 GHz Discrete, 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
2025 Filter Market Size	\$9.9 Billion^[1] High Volume Market			\$2.2 Billion^[2] Niche Market	

MOBILE RF MARKET DYNAMICS

RF CONTENT GROWTH PER DEVICE¹



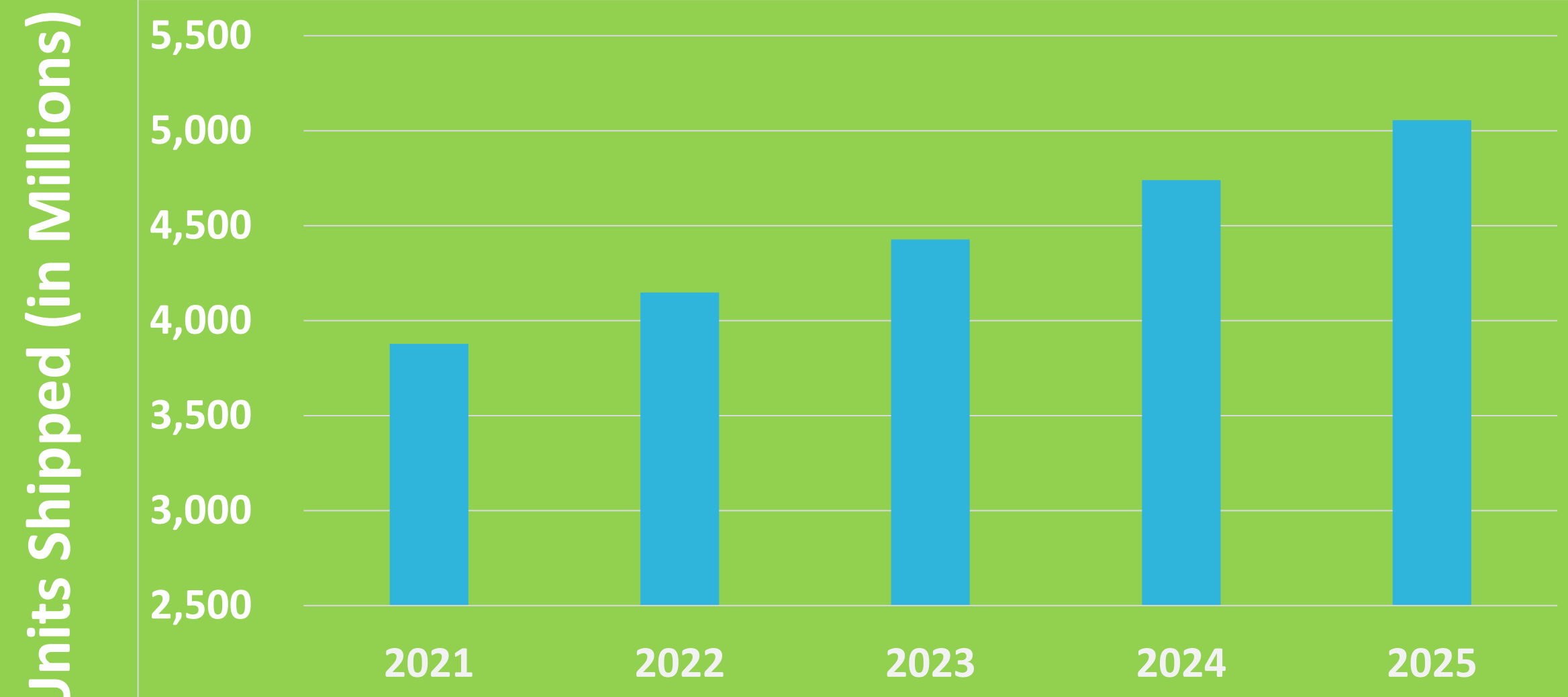
RF Filter – FASTEST growing segment in the RF Front End (RFFE)



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

NON-MOBILE WI-FI RF MARKET DYNAMICS^[1]

NON-MOBILE WI-FI UNIT FORECAST



RF Filter – FASTEST growing segment in the Non-Mobile Wi-Fi RF Front End (RFFE)

MU-MIMO DRIVING Wi-Fi CONTENT GAINS

	2021	2022	2023	2024	2025	CAGR 21-26
1X1	1,241	1,231	1,257	1,329	1,468	2%
2X2	2,497	2,760	2,999	3,228	3,397	10%
3X3	38	41	44	46	49	7%
4X4	91	103	113	120	123	9%
8X8	12	14	16	17	17	13%
Total	3,878	4,148	4,428	4,740	5,055	7%

Units Shipped (in Millions)

Multi-User Multiple-in-multiple-out configurations driving massive unit growth

WHY XBAW™ FOR RF



THERMAL PERFORMANCE

Improved power handling
Increased heat removal

HIGH PURITY PIEZOELECTRIC

High-frequency performance
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

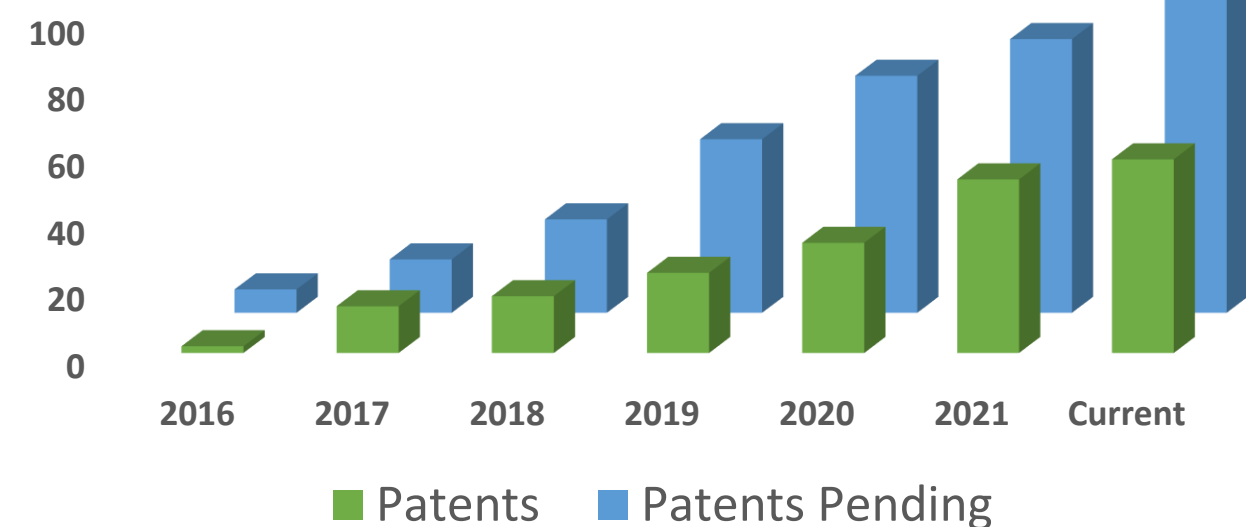
INTELLECTUAL PROPERTY (IP) PORTFOLIO BREAKDOWN

AKOUSTIS IP PORTFOLIO

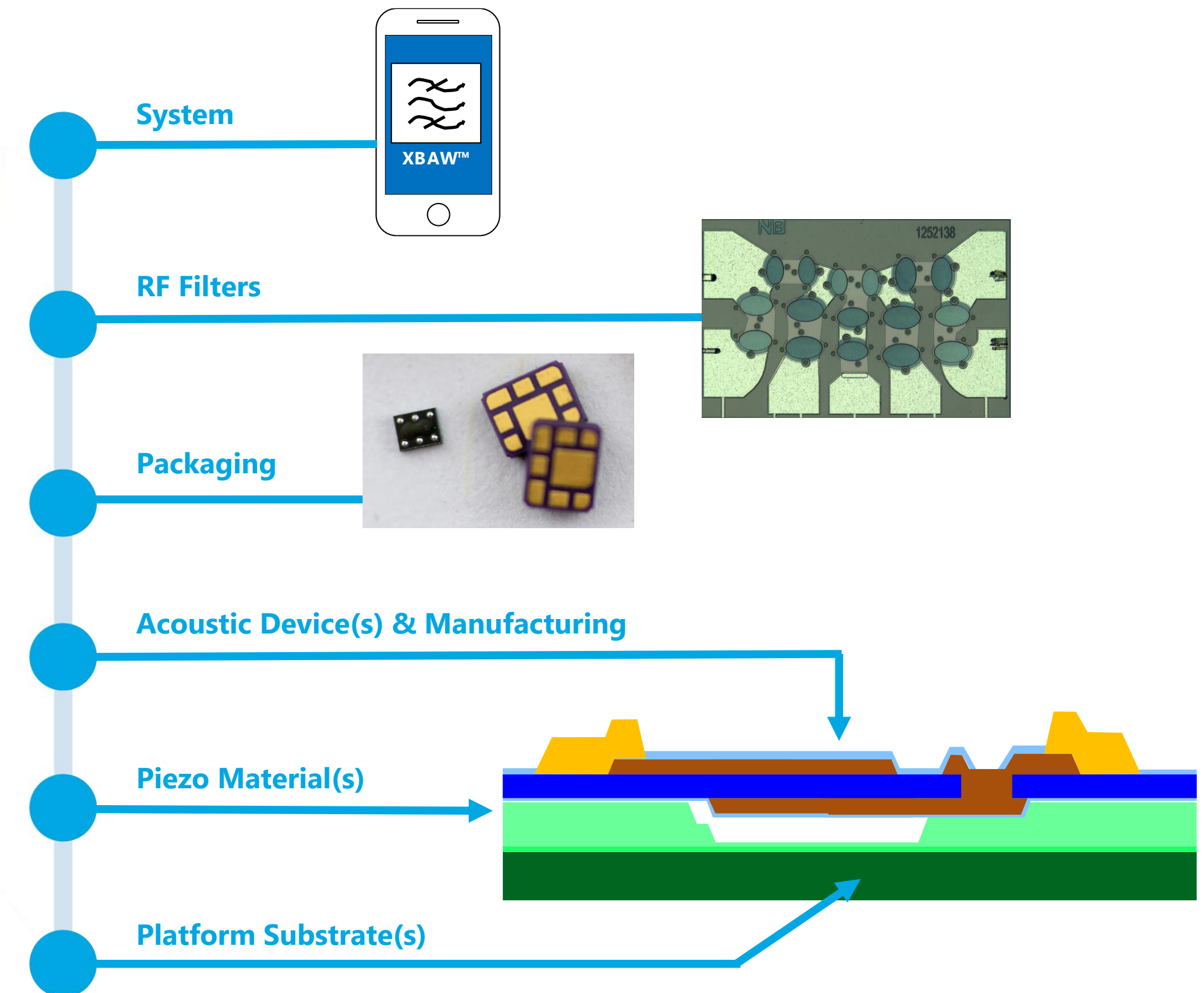
56 patents, 93 patent filings pending, plus numerous trade secrets [1]

<https://www.akoustis.com/patents>

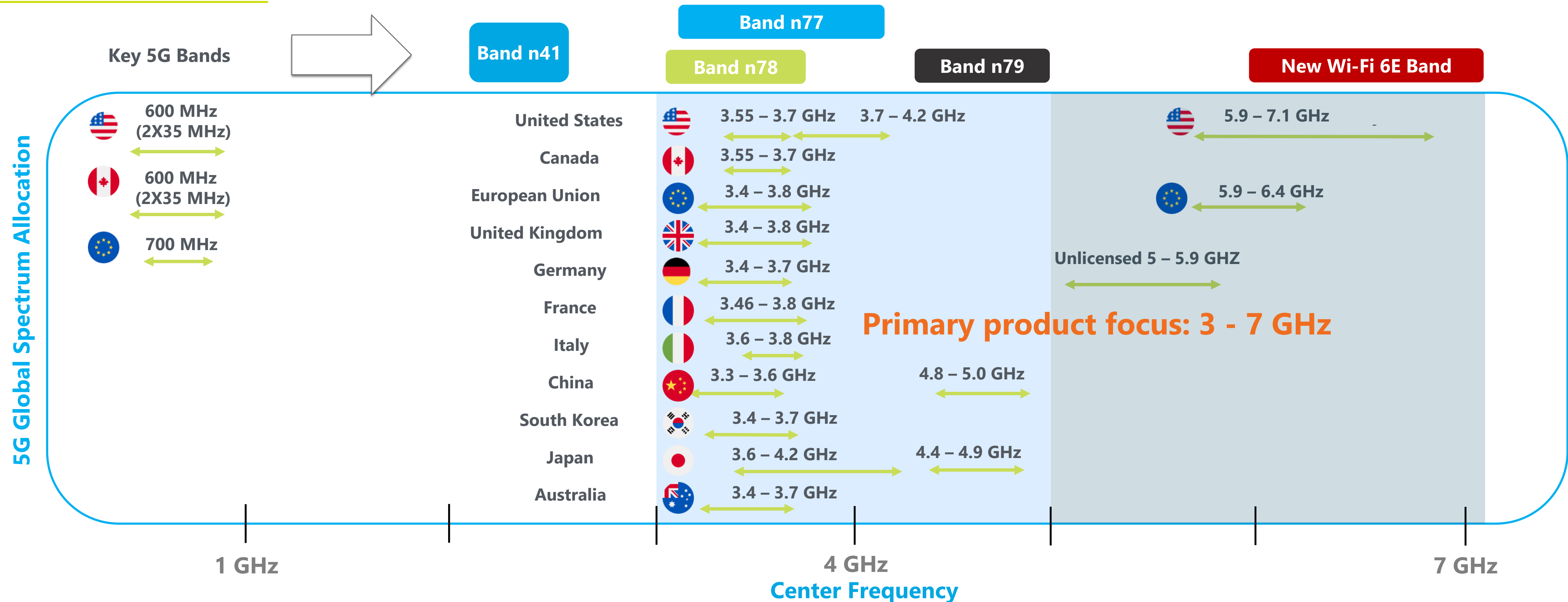
GROWING PATENT PORTFOLIO



VERTICAL IP PORTFOLIO

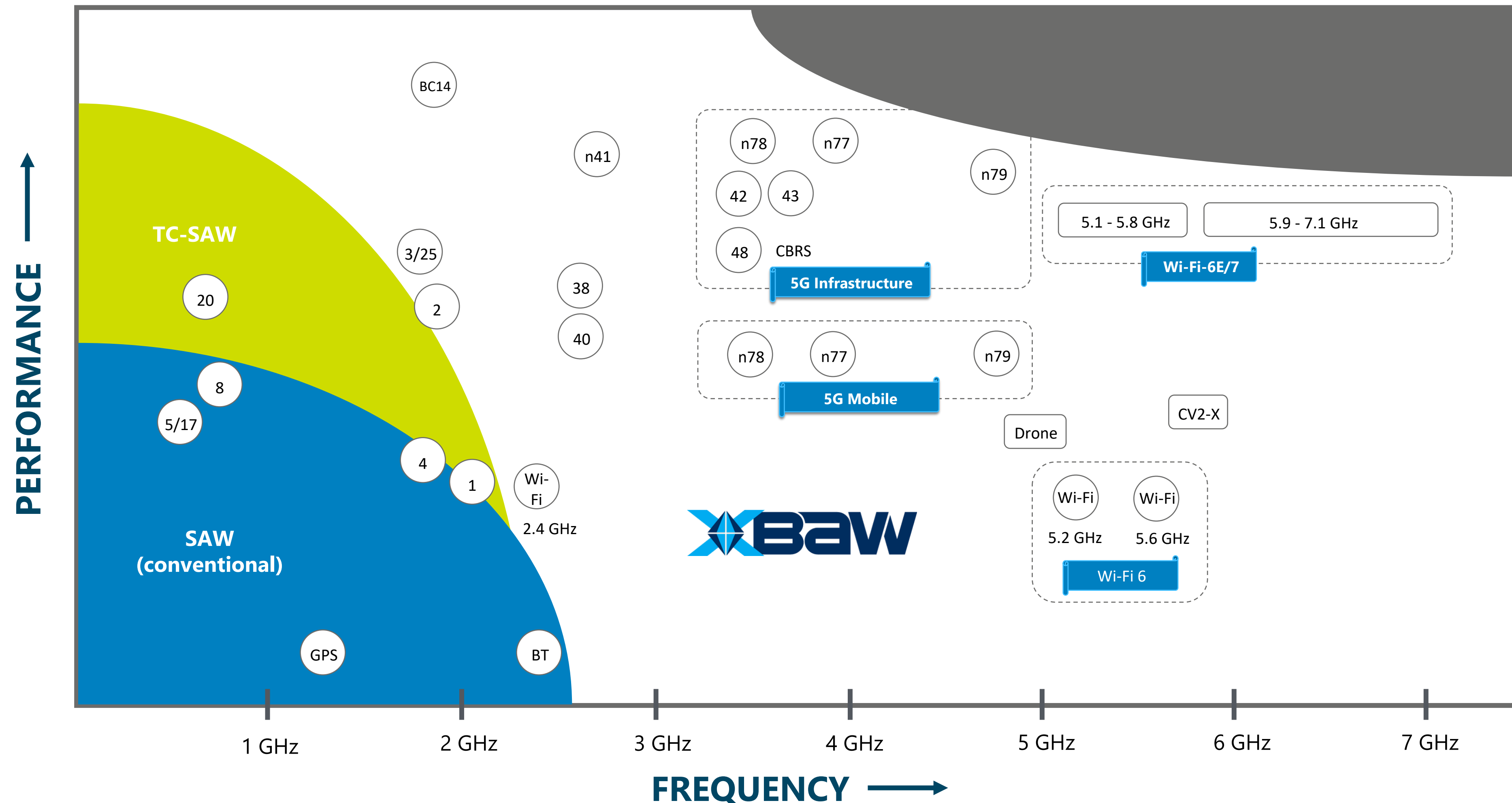


5G & WI-FI DEMANDING HIGHER FREQUENCY FILTERS



- 5G brings new spectrum for the expansion of mobile devices and infrastructure
- 5 GHz & 6 GHz Wi-Fi offers new markets for BAW filters, with expanded 6 GHz spectrum
- Akoustis product portfolio focused on 5G and high frequency Wi-Fi bands

AKOUSTIS TECHNOLOGY OPTIMIZED FOR 5G & WI-FI 6 & 7



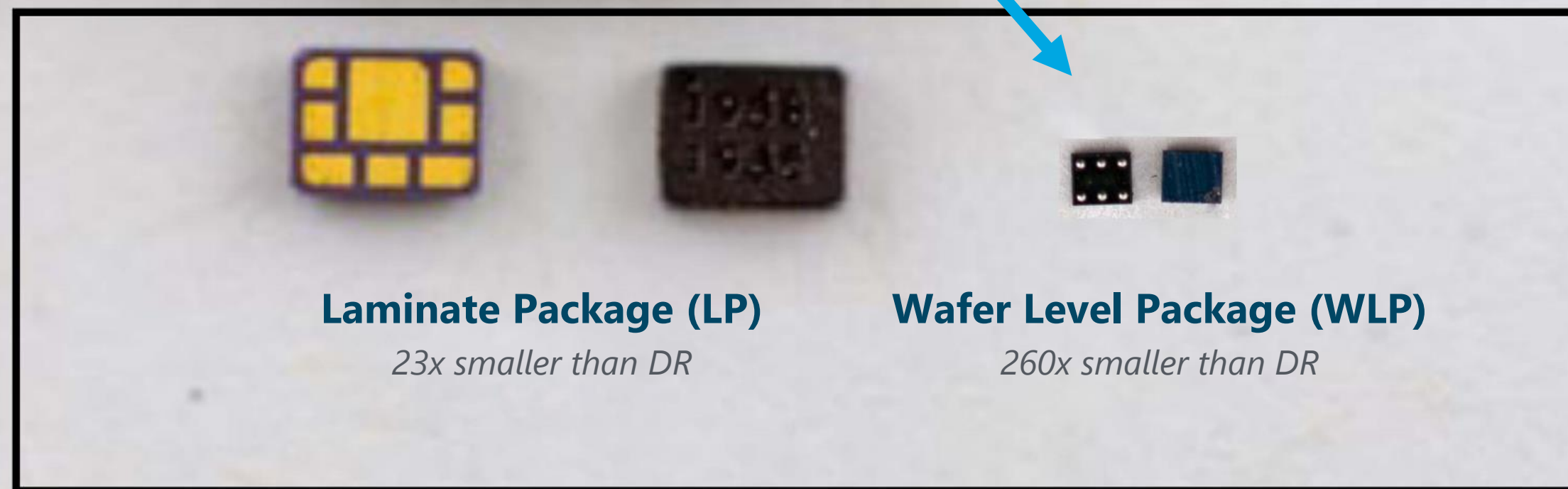
SMALLER FILTERS FOR HIGH GROWTH WI-FI CPE

Akoustis enables 260x size reduction for 5 GHz Wi-Fi



Incumbent Technology
Dielectric Resonator (DR)

260x size reduction



Laminate Package (LP)
23x smaller than DR

Wafer Level Package (WLP)
260x smaller than DR

RF filter market for Wi-Fi customer premise equipment (CPE) is expected to grow from \$347M (2018) to **\$540M** (2022) ^[1]

GROWTH DRIVERS

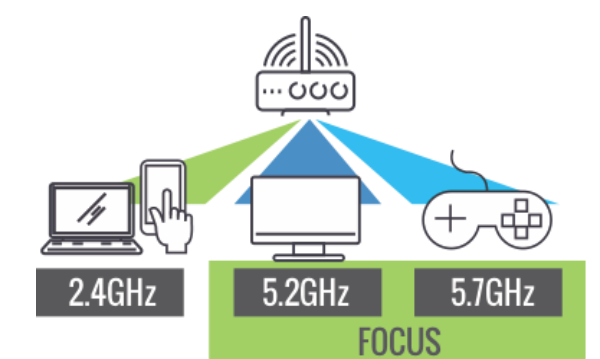
1. Tri-Band Architecture

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
- 2.4 GHz, 5.5 GHz and 6.5 GHz



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



RECENT ACTIVITY

Five Wi-Fi customers in production

More than 12 commercialized XBAW™ Wi-Fi filters

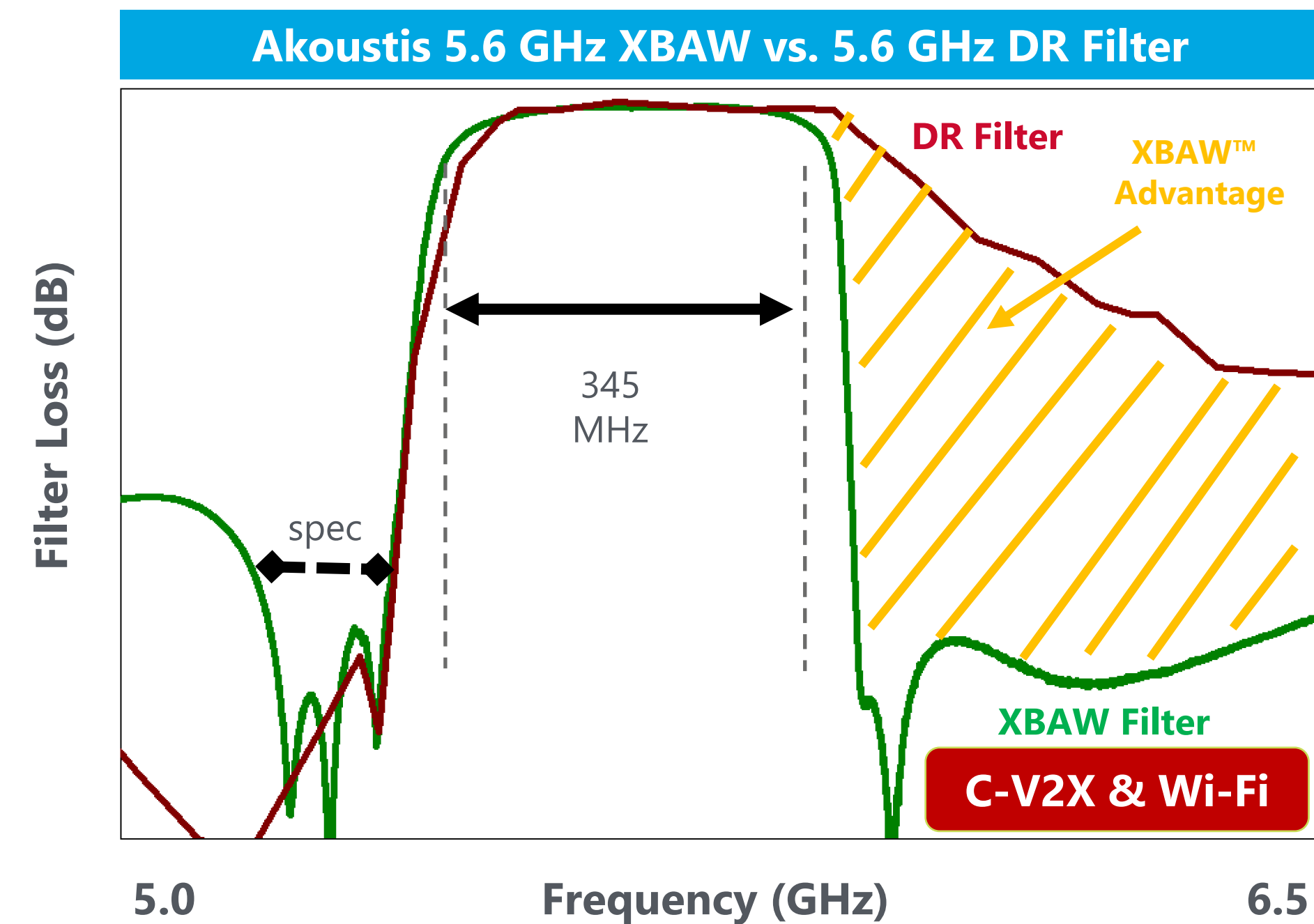
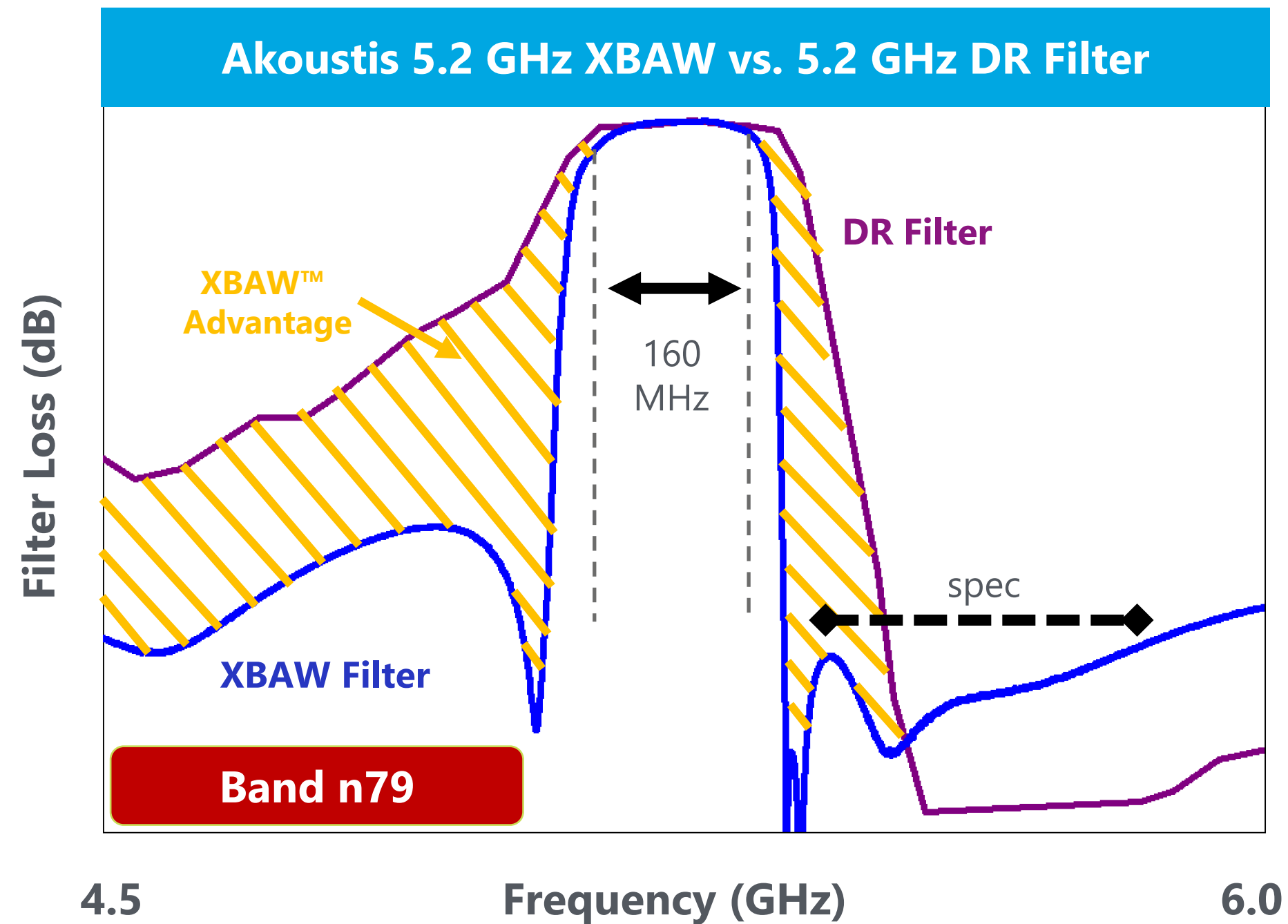
- Eight Wi-Fi 6E & four Wi-Fi 6

Twelve announced design wins, up from five in the previous quarter

Developing first diplexer for leading PC system-on-chip maker

Expect to qualify four Wi-Fi filters in current quarter

XBAW™ ADVANTAGES OVER INCUMBENT DR FILTERS



TARGET CUSTOMERS



NETGEAR

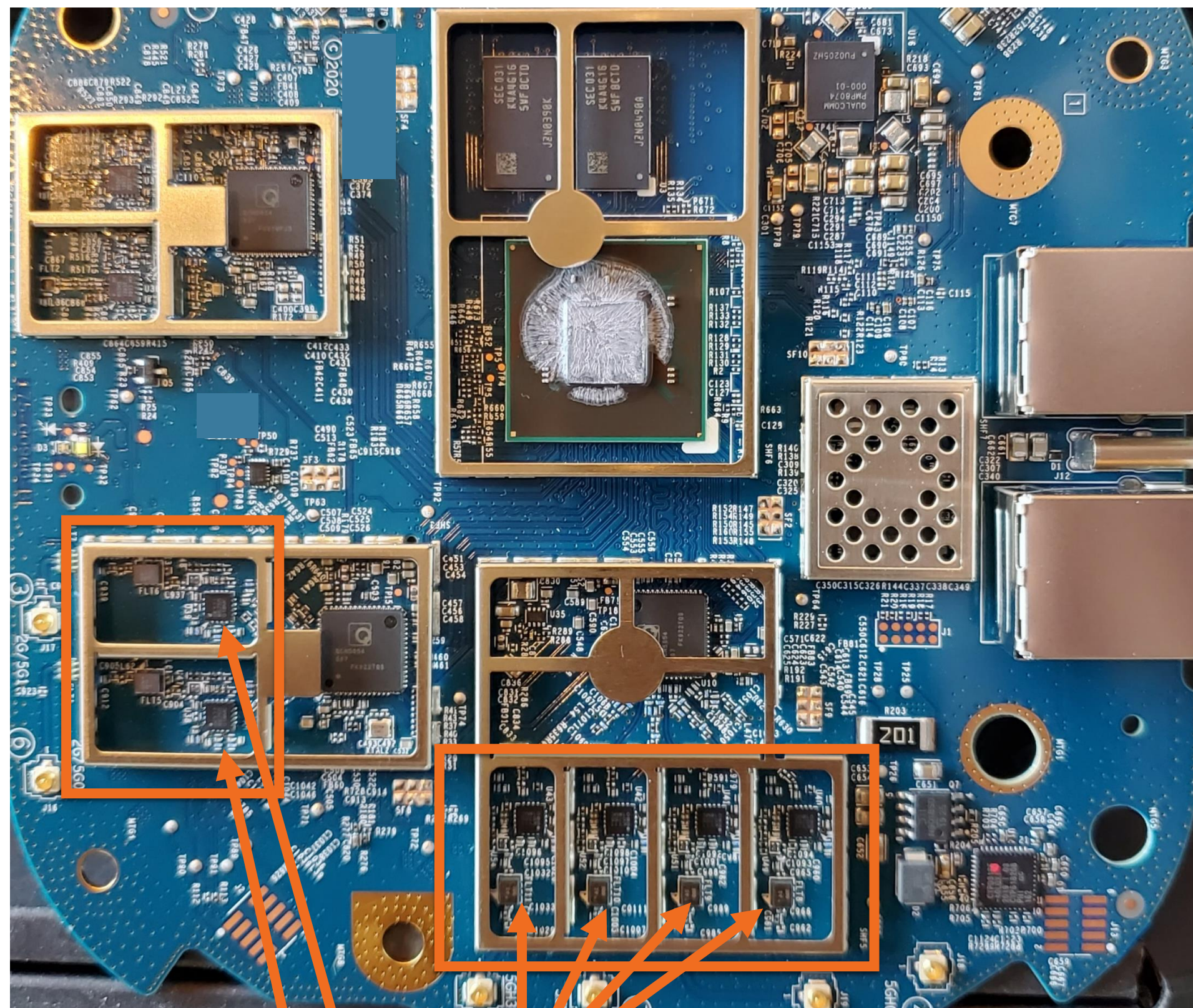


Sagemcom

Qualcomm

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

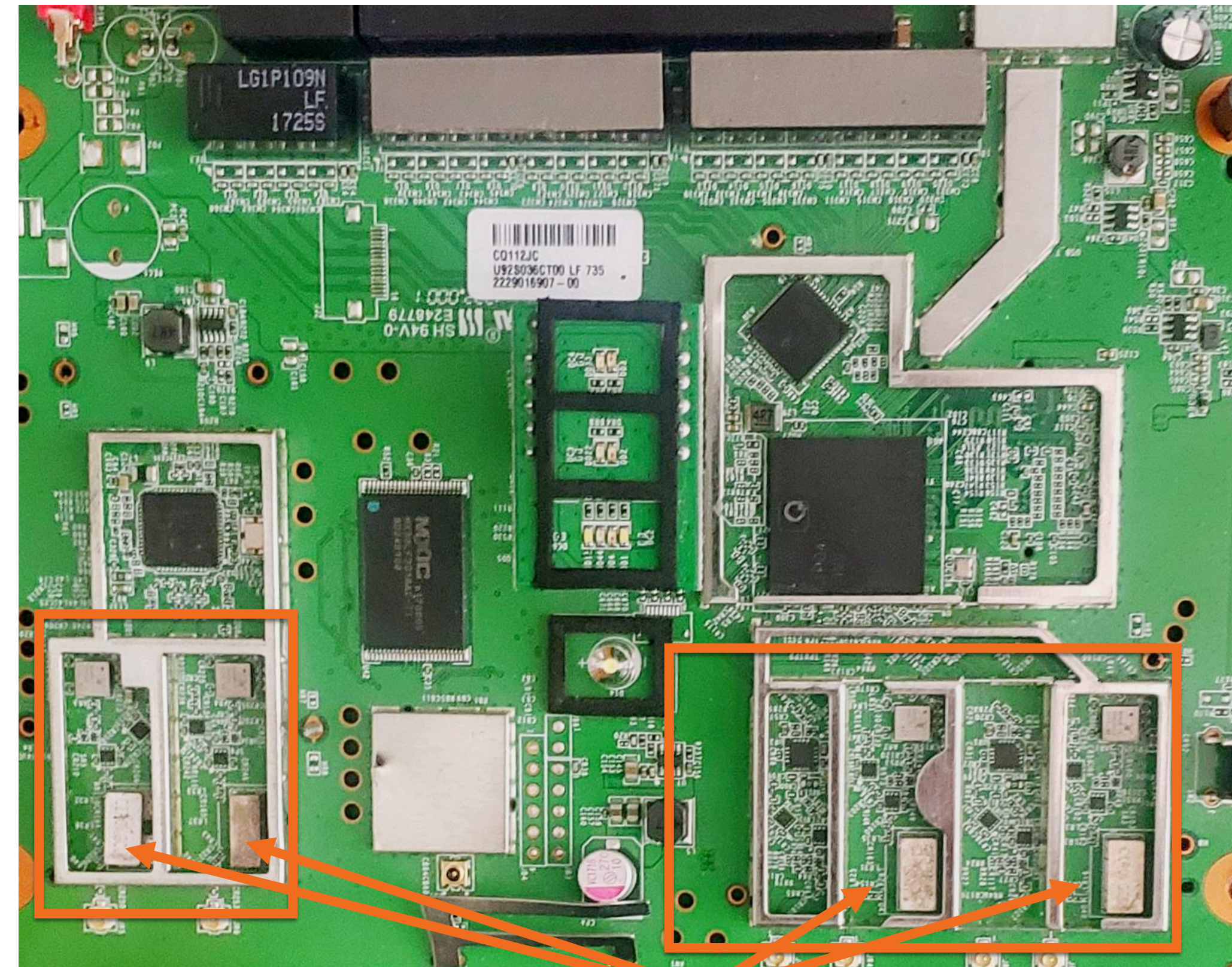
Akoustis 5.2 & 5.6 GHz Filters
Tri-Band Wi-Fi 6 Architecture



AKTS Filters

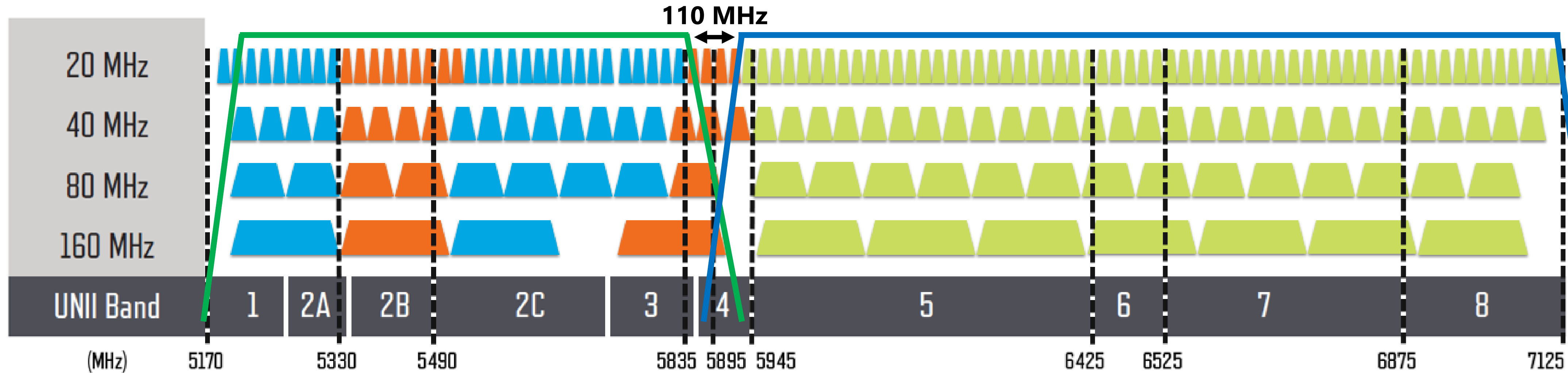
23X Size Advantage

Dielectric Resonator Filters & 2.4 GHz BAW
Tri-Band Wi-Fi 6 Architecture



DR Filters

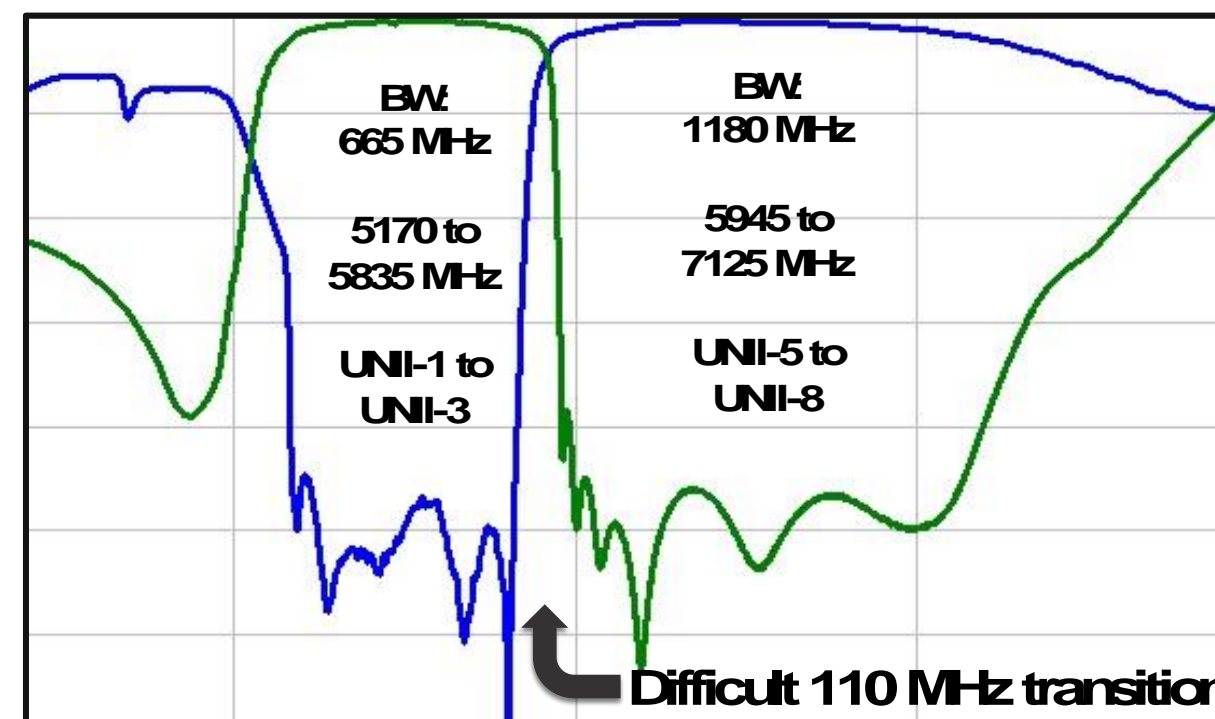
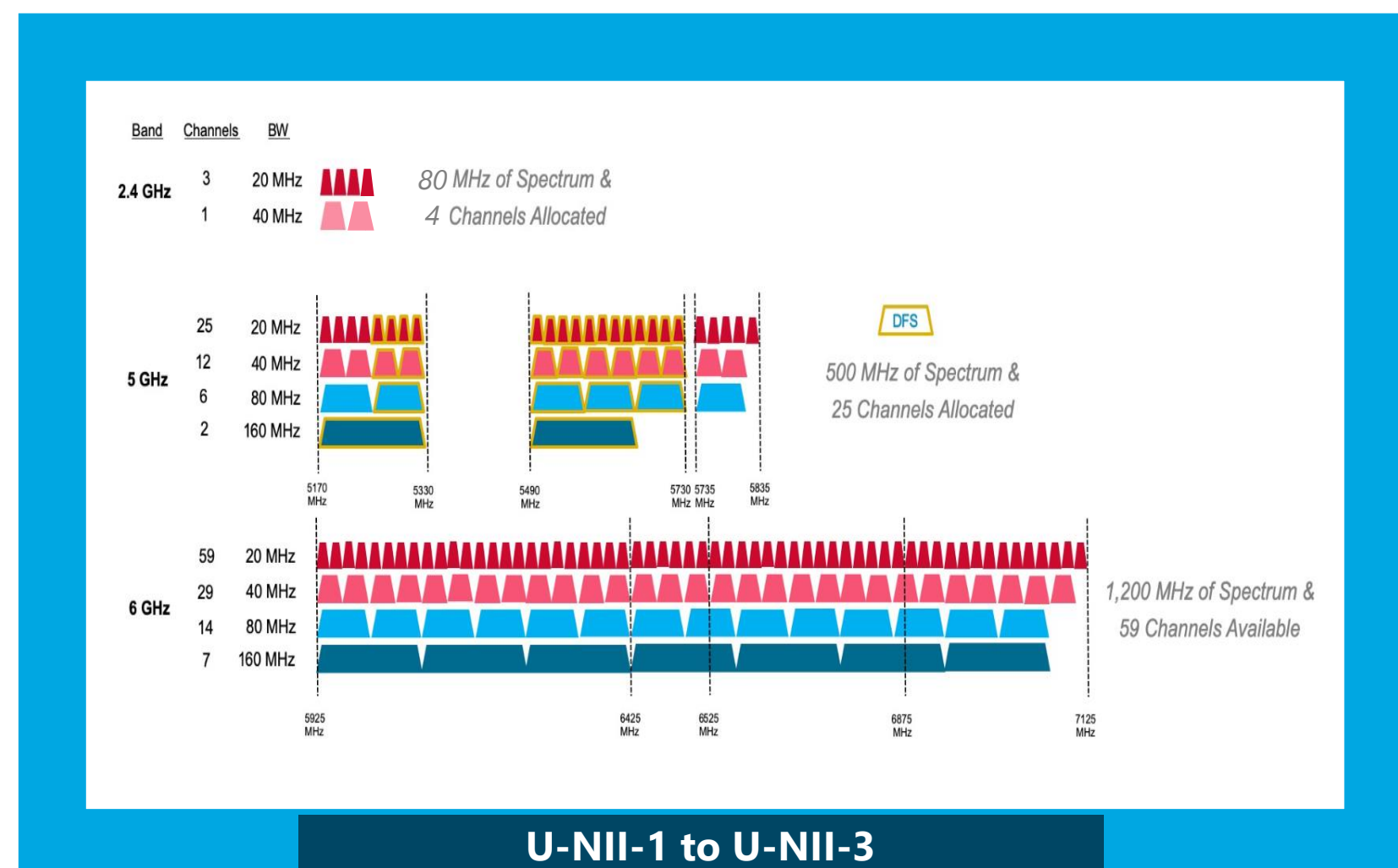
AKOUSTIS LEADING DEVELOPMENT OF WI-FI 6E & 7 FILTERS



Micro-Acoustic wideband filters cover **5GHz UNII-1 to 3** and **6GHz UNII-5 to 8** supports worldwide geographical regulatory approval

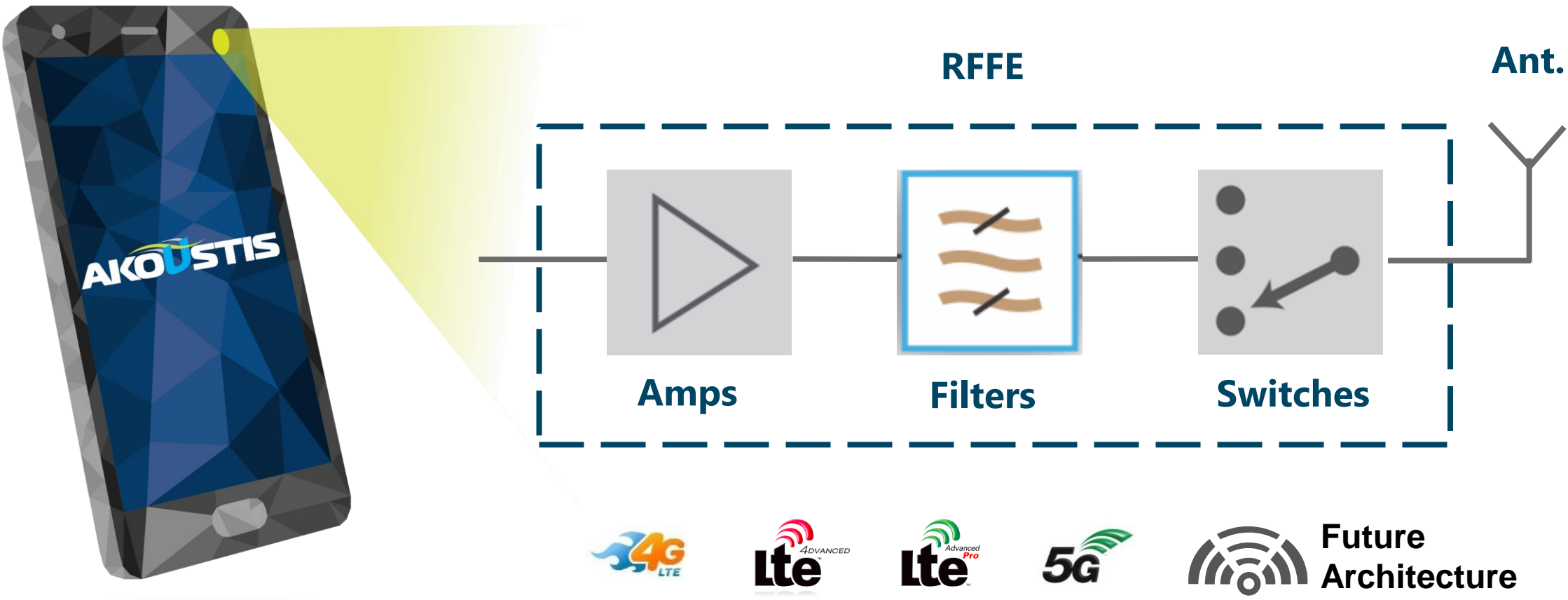
Wi-Fi 6E/7 vs. Wi-Fi 6

- 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**



MOBILE WIRELESS / SMARTPHONE

PRODUCT FOCUS/MARKET DYNAMICS



- Akoustis has five customer engagements including three tier-1 multinational companies
- **Announced 1st customer engagement** and signed foundry agreement with expected production ramp late CY2022
- **2nd customer** development order, expected ramp in late CY2022
- **3rd customer** development order, expected ramp in late CY2023
- **4th & 5th customer** development orders, expected ramps late CY2023/CY2024
- **Target qualification of internally developed WLP** (wafer-level-packaging) by the end of Q3CY22
- 5G coexistence filter designs ongoing
- MIMO/MU-MIMO architectures growing; driving radio and filter content
- Value proposition: power, bandwidth, size (WLP)

TARGET CUSTOMERS

OEM / Transceiver

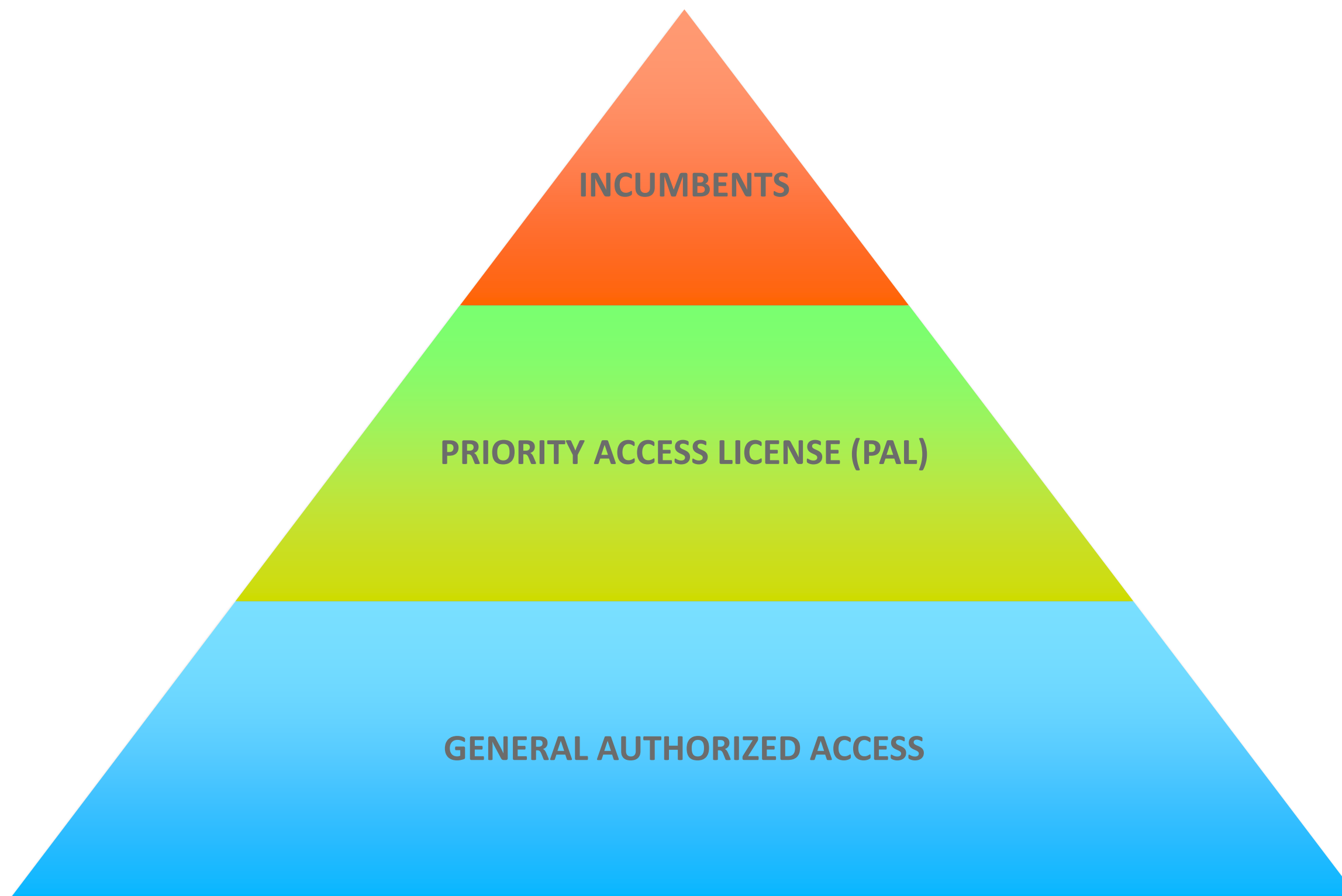


RFFE Module



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
- **Received first two orders from initial CBRS customer** with product launch anticipated in current quarter
- Received first design win with **second** 5G CBRS infrastructure customer with product launch expected in the current quarter
- **Engaged with 10+ additional OEMs** including tier-1

TARGET CUSTOMERS

SAMSUNG



NEC

ZTE

ERICSSON 

NOKIA

CORNING

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

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



NEC

ZTE

ERICSSON



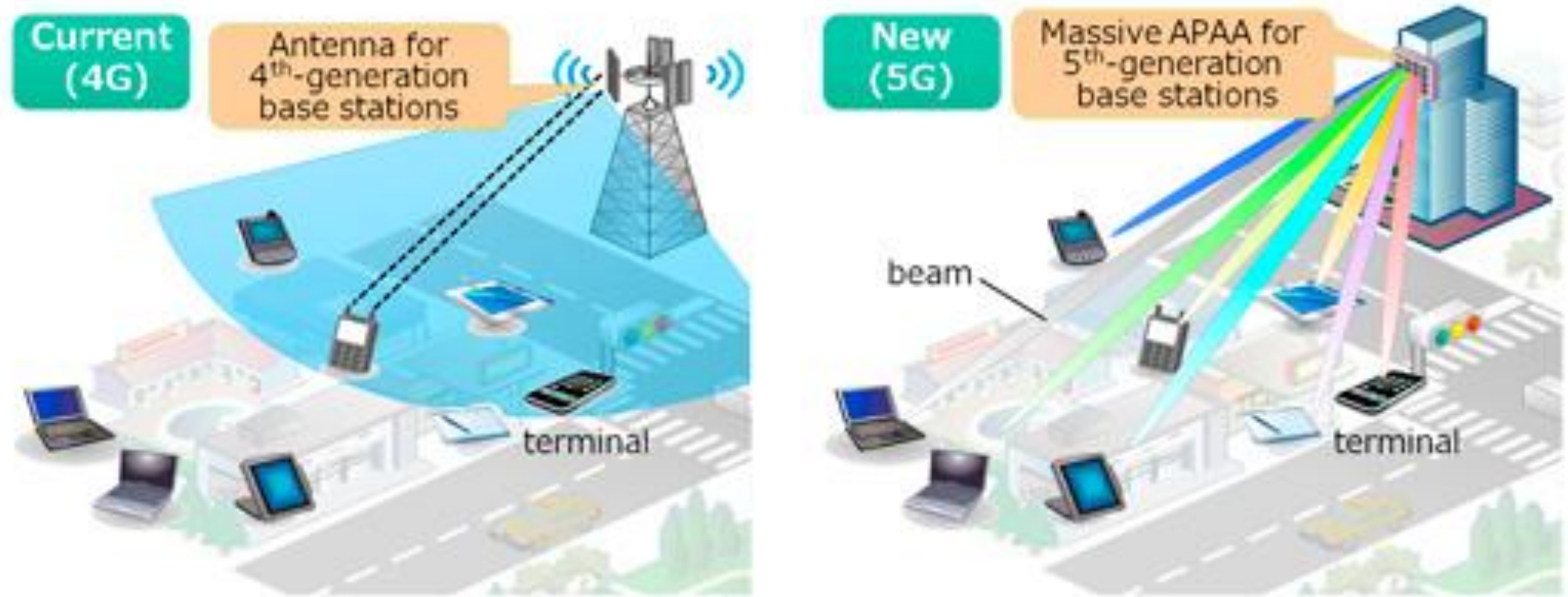
NOKIA

CORNING

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

FILTER POWER IS KEY FOR MASSIVE MIMO BTS

4G VS. 5G NETWORK ARCHITECTURE



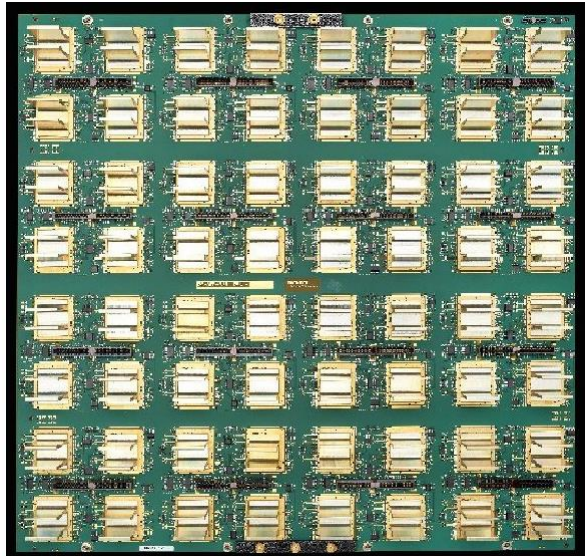
Source: Mitsubishi Electric



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)
- More demanding environment, longer end product life cycle
- New materials under development to handle wide bandwidths expected in 5G environments
- Significant progress made in December quarter of 2021
- Further Developments/Announcements expected soon

TARGET CUSTOMERS

SAMSUNG



NEC

ZTE

ERICSSON



NOKIA

CORNING

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

(1) Source: 2018 IEEE International Ultrasonics Symposium (IUS) Paper

NEW MILESTONES FOR CALENDAR Q2 2022

Wi-Fi

Q2 CY22: Ramp multiple Wi-Fi 6 and Wi-Fi 6E customers

Q2 CY22: Fully qualify four Wi-Fi 6E filters

Q2 CY22: Iterate a second design of new Wi-Fi diplexer to tier-1 PC chipset customer

5G Mobile

Q2 CY22: Ship 2nd sample to tier-1 RF component customer, deliver two in-spec filter designs

Q2 CY22: Iterate 1st filter design to foundry customer and receive purchase order for additional filters

Q2 CY22: Develop two new tier-1 customer's XBAW™ filters and deliver initial samples

5G Infrastructure

Q2 CY22: To release and ship volume filter units to both CBRS infrastructure customers for initial ramps

Q2 CY22: Sample new 5G filter targeting the US 3.7-3.98 GHz spectrum

Other

Q2 CY22: Ship a new XBAW™ filter design to existing defense customer and

Q2 CY22: Receive a new volume production order for the 3.8 GHz filter product

Q2 CY22: Expect to complete negotiations for a new multi-year, multi-million-dollar proposal from DARPA

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 Wi-Fi growing and 5G mobile network accelerating
- IDM business model facilitates low-risk supply chain; **expanding wafer capacity** supports multiple customer ramps
- Executing on key business milestones:
 - A. **Engaged with five 5G mobile** RF component companies for the development of multiple 5G and Wi-Fi XBAW™ coexistence filters for mobile devices, including three tier-1 customers
 - B. In production with industry's first tandem 5.2 GHz / 5.6 GHz Wi-Fi XBAW™ filter solution and **first 5.5 GHz & 6.5 GHz Wi-Fi 6E modules**
 - C. **Launching 5G infrastructure business** with production ramp of two CBRS infrastructure customers in the current quarter
 - D. Negotiating **new DARPA R&D contract** to increase frequency of XBAW™ technology

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
Chief Financial Officer

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



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. 27 years exp



Tom Sepenzis
VP Corporate Development & IR

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)



Anthony Nixon
VP Information Technology

Former Sr Director of IT and Security at HEPACO LLC & Global Director of IT at Midrex Technologies Inc, 25 years IT and Security experience, BSCIT, MBA & MSCSIA

SEASONED BOARD MEMBERS



Jerry Neal
Co-Chairman, Director

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



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 Lighting 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



Jeff McMahon
Director

Director at North Highland, 17+ years management consulting experience



Suzanne Rudy
Director

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



J. Michael McGuire
Director

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



QUALIFIED XBAW™ WAFER FAB – CANANDAIGUA, NY



- **120,000 sq. ft.** XBAW Filter Fab Facility
- **150-mm** Si Wafer Process
- **Scalable** 6" and 8" wafer manufacturing
- **ISO 9001:2015** registered quality management system
- **XBAW™ filter process established in 2018**
- Captive manufacturing enables **Integrated Design and Manufacturer (IDM) business model**