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# Resonant Inc. Expands XBAR® Performance to Address 5G-Wi-Fi Co-existence Issues

**5G and Wi-Fi band adjacent in frequency, create potential for interference; Resonant utilizes Infinite Synthesized Networks (ISN®) design platform to expand performance of XBAR® resonators to block interfering signals targeting the exacting demands of infrastructure applications**

GOLETA, Calif., April 14, 2020 (GLOBE NEWSWIRE) -- Resonant Inc. (NASDAQ: RESN), a leader in transforming the way radio frequency, or RF, front-ends are being designed and delivered for mobile handset and wireless devices, today announced expanded performance for its XBAR® high-frequency resonator for RF filters that can manage the co-existence of 5G and Wi-Fi 6 and 6E networks, protecting each from co-interference and the resulting degradation in network performance.

Resonant's ground-breaking XBAR technology enables unparalleled wide operating bandwidth at high frequency. Resonant has demonstrated measured results of the latest XBAR-based filters that operate in frequency bands supporting either 5G or Wi-Fi up to 7000 MHz (802.11 ax) with bandwidths over 1000 MHz (18% relative bandwidth). These filters also achieve low-loss (<1.5 dB) across the band and excellent rejection to adjacent interfering frequencies (>50 dB).

Resonator structures support acoustic resonance at defined frequencies and are the foundational building blocks underlying all acoustic-wave RF filters. This expanded XBAR resonator structure was enabled by Resonant's high-precision, multi-physics [Infinite Synthesized Networks \(ISN®\)](#) RF filter design platform. The company has also introduced its [HiPower SAW innovation](#) using ISN.

## Filter Rejects Unwanted Signals

XBAR based filters' rejection of interfering frequencies is important because of emerging 5G and Wi-Fi infrastructure use cases. The roll-out of the 5G n79 band as well as Wi-Fi 6E creates significant interference and co-existence issues which require the high-performance filtering enabled by acoustic-wave filters

As data consumption grows, the industry is adopting higher speed wireless networks. According to the latest [Cisco Internet Report](#), the number of Wi-Fi 6 hotspots will grow 13 fold globally by 2023 to 628 million. In addition, average mobile speeds will more than triple from 2018. This will drive a new range of wireless infrastructure including base stations, access points and others that will support both 5G and Wi-Fi. In these applications, the filter

must mitigate the interference between each signal to prevent signal bleed, to allow operation across the full band.

## **Full Bandwidth for Wi-Fi 6 and 6E**

In Resonant's measurements, filters based on this new resonator technology display wide bandwidth of up to the 1100 MHz needed for high-frequency Wi-Fi devices, and demonstrated power handling meeting the requirements of both Wi-Fi and 5G.

"Resonant is continuing its identification of innovative ways to solve wide bandwidth, high frequency filter problems driven by the insatiable appetite for wireless data. With XBAR technologies, developed with ISN, the company is winning acclaim for laying the foundation for RF filters that reach performance levels needed for the next generation of filters for 5G and Wi-Fi while also benefiting from using the most cost effective manufacturing processes," said George B. Holmes, Chairman and CEO of Resonant.

Resonant has documented the performance of the XBAR resonators in a recently posted whitepaper titled: [High Frequency Resonator is Foundation for High-Throughput 5G Services – And Much More](#).

## **About Resonant Inc.**

Resonant (NASDAQ: RESN) is transforming the market for RF front-ends (RFFE) by disrupting the RFFE supply chain through the delivery of solutions that leverage our Infinite Synthesized Network (ISN) software tools platform, capitalize on the breadth of our IP portfolio, and are delivered through our services offerings. In a market that is critically constrained by limited designers, tools and capacity, Resonant addresses these critical problems by providing customers with ever increasing design efficiency, reduced time to market and lower unit costs. Customers leverage Resonant's disruptive capabilities to design cutting edge filters and modules, while capitalizing on the added stability of a diverse supply chain through Resonant's fabless ecosystem-the first of its kind. Working with Resonant, customers enhance the connectivity of current mobile devices, while preparing for the demands of emerging 5G applications.

To learn more about Resonant, view the series of videos published on its website that explain Resonant's technologies and market positioning:

- [Resonant Corporate Video](#)
- [ISN and XBAR: Speeding the Transition to 5G](#)
- [Infinite Synthesized Networks, ISN Explained](#)
- [What is an RF Filter?](#)
- [RF Filter Innovation](#)
- [Transforming the Mobile Filter Supply Chain](#)

For more information, please visit [www.resonant.com](http://www.resonant.com).

Resonant uses its website (<https://www.resonant.com>) and LinkedIn page (<https://www.linkedin.com/company/resonant-inc-/>) as channels of distribution of information about its products, its planned financial and other announcements, its attendance at upcoming investor and industry conferences, and other matters. Such information may be

deemed material information, and Resonant may use these channels to comply with its disclosure obligations under Regulation FD. Therefore, investors should monitor the company's website and its social media accounts in addition to following the company's press releases, SEC filings, public conference calls, and webcasts.

### **About Resonant's ISN<sup>®</sup> Technology**

Resonant can create designs for difficult bands, modules and other complex RF Front End requirements that we believe have the potential to be manufactured for half the cost and developed in half the time of traditional approaches. ISN is a suite of proprietary mathematical methods, software design tools and network synthesis techniques that enable us to explore a much larger set of possible design solutions that regularly incorporate our proprietary technology. We then quickly deliver design simulations to our customers, which they manufacture or have manufactured by one of our foundry partners. These improved solutions still use Surface Acoustic Wave (SAW) or Temperature Compensated Surface Acoustic Wave (TC-SAW) manufacturing methods and perform as well as those using higher cost manufacturing methods such as Bulk Acoustic Wave (BAW). Resonant's method delivers excellent predictability, enabling achievement of the desired product performance in roughly half as many turns through the fab. In addition, because Resonant's models are fundamental, integration with its foundry and fab customers is seamless because its models speak the "fab language" of basic material properties and dimensions.

### **Safe Harbor / Forward-Looking Statements**

This press release contains forward-looking statements, which include the following subjects, among others: the status of filter designs under development, the capabilities of our filter designs and software tools, the timing and amount of future revenues, and our views on future financial performance and market share. Forward-looking statements are made as of the date of this document and are inherently subject to risks and uncertainties which could cause actual results to differ materially from those in the forward-looking statements, including, without limitation, the following: our limited operating history; our ability to complete designs that meet customer specifications; the ability of our customers (or their manufacturers) to fabricate our designs in commercial quantities; our customers' ability to sell products incorporating our designs to their OEM customers; changes in our expenditures and other uses of cash; the ability of our designs to significantly lower costs compared to other designs and solutions; the risk that the intense competition and rapid technological change in our industry renders our designs less useful or obsolete; our ability to find, recruit and retain the highly skilled personnel required for our design process in sufficient numbers to support our growth; our ability to manage growth; and general market, economic and business conditions. Additional factors that could cause actual results to differ materially from those anticipated by our forward-looking statements are under the captions "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" in our most recent Annual Report (Form 10-K) or Quarterly Report (Form 10-Q) filed with the Securities and Exchange Commission. Forward-looking statements are made as of the date of this release, and we expressly disclaim any obligation or undertaking to update forward-looking statements.

### **Investor Relations Contact:**

Moriah Shilton, [LHA Investor Relations](#), 1-415-433-3777, [RESN@lhai.com](mailto:RESN@lhai.com)



Source: Resonant Inc.