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Resonant Provides Update on MWC 2019 Barcelona

- XBAR™ filters demonstrated 3X the bandwidth as current technology

GOLETA, Calif., March 04, 2019 (GLOBE NEWSWIRE) -- Resonant Inc. (NASDAQ: RESN), a leader in transforming the way radio frequency, or RF, front-ends are being designed and delivered for wireless devices, provided an update from its attendance at MWC (Mobile World Congress) 2019 Barcelona.

“Headlines from MWC 2019 Barcelona showed us 5G services and devices are fast approaching. Carriers are in the very early stages of upgrading their networks, readying for the launch of consumer-ready, fast 5G services, but importantly a half-dozen of the largest phone manufacturers announced initial 5G phones and consumer devices,” stated George B. Holmes, CEO of Resonant. “5G networks devices are beginning to emerge with initial deployments this year, and the pace is expected to pick up significantly in 2020. In order to deliver the high data rates promised by 5G, mobile devices will demand a greater number of filters and higher complexity to handle the required increased bandwidth and higher frequencies. As the new frequency bands for 5G are fundamentally different from 4G, it will be difficult to use existing 4G filter architecture and structures for 5G.”

Resonant demonstrated at MWC 2019 Barcelona high-performance RF filters designed specifically for 5G consumer devices, which were fabricated using the company’s next generation XBAR™ resonators. XBAR resonators are new bulk acoustic wave (BAW) structures developed by Resonant using the company’s Infinite Synthesized Networks® (ISN®) software design platform. Through use of ISN, Resonant was able to create a technology that has the performance needed for high-performance 5G devices yet uses existing manufacturing processes for fast production and low unit costs. The first XBAR filters shown at MWC 2019 Barcelona are demonstrating the capability to handle the wider passbands (bandwidth) required for 5G.

“We believe that in some cases RF filters fabricated using our XBAR technology can handle as much as three times the bandwidth available with current technology. Customer feedback following these demonstrations was very positive, specifically attributable to our technology leading bandwidths at high frequency, high quality factor (Q), size, and the prospect of high-power durability, leveraging the already proven IP from Resonant. In addition, our customers are increasingly viewing our ISN software as a critical component for accelerated time to market for new 5G devices, as it greatly accelerates the design and simulated performance of new BAW solutions. It is these efficiencies that will allow our customers to compete most effectively as the current \$9B+ filter market for 2G, 3G and 4G continues to mature and be commoditized,” continued Holmes.

Resonant plans to make its first XBAR filter, supporting band n79, available for licensing through its Filter IP Standard Library. The company is currently qualifying foundry partners in

order to provide a turnkey solution for customers. The company expects to have foundries qualified and producing parts as early as the third quarter of 2019, ready to meet the needs of the 5G market.

“The positive feedback from the meetings we had in our invitation only demo suite is aligned with our goal of selecting a lead market-maker partner in the second quarter of 2019. We believe this was the first time filter bandwidths this wide, from acoustic filters, showing measured results has been shown. Overall, we believe we are well positioned with XBAR to deliver the performance 5G demands, faster, better and more cost effectively, further enhancing Resonant’s long-term value for its shareholders,” concluded Holmes.

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 fables 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:

- [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.

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About Resonant’s ISN® 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 ISN tools and technology, the timing of product introductions, and our views on future financial performance, competition 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.

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