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# Resonant Signs New Joint Development Agreement with RFFE Component Supplier for Design of a Quadplexer

*Agreement is for second Quadplexer and fourteenth complex design to be developed using Resonant's ISN Technology*

GOLETA, Calif.--(BUSINESS WIRE)-- Resonant Inc. (NASDAQ: RESN), a developer of software tools and intellectual property, and a design services provider of filters, for radio frequency front-ends (RFFE) that specializes in delivering solutions for difficult bands and complex requirements, today announced it has signed a new development agreement with a supplier of power amplifiers (PA) and switches for handset RFFE's.

The agreement encompasses the development of Resonant's second Quadplexer and is the first engagement with a company that doesn't own its own fab, making this development similar to the fabless model traditionally used in the production of semiconductors. This agreement will enable the customer to evaluate Resonant's ability to utilize its design tools, IP and services team to design and partner with a third party fab to deliver this complex Quadplexer. Upfront payments and milestone payments have been agreed upon, but will not be disclosed due to the confidential nature of such agreements.

"Our fifth customer to sign a development agreement with us is a leading RFFE supplier and a new entrant to the filter market," said Terry Lingren, CEO and Co-Founder of Resonant Inc. "This development project will be designed and manufactured in close cooperation with one of Resonant's existing foundry partners, which we believe will provide this customer with a significant competitive advantage. Quadplexers enable carrier aggregation (CA), where multiple frequency bands are combined for higher data rates – a key feature of LTE-Advanced. However, the design complexity for these multiplexers is dramatically increased, which has so far limited quadplexer availability. Quadplexers in a small footprint are being driven by the ongoing demand for smaller, lighter and thinner mobile devices with increasing video and other high data-rate capabilities."

## **About Resonant Inc.**

Resonant is creating innovative filter designs for the RF front-end, or RFFE, for the mobile device industry. The RFFE is the circuitry in a mobile device responsible for the radio frequency signal processing and is located between the device's antenna and its digital baseband. Filters are a critical component of the RFFE that selects the desired radio frequency signals and rejects unwanted signals and noise. For more information, please visit [www.resonant.com](http://www.resonant.com).

## **About Resonant's ISN® Technology**

Resonant can create designs for hard bands and complex requirements that we believe have the potential to be manufactured for half the cost and developed in half the time of traditional approaches. The Company's large suite of proprietary mathematical methods, software design tools and network synthesis techniques enable it to explore a much bigger set of possible solutions and quickly derive the better ones. These improved filters still use existing manufacturing methods (i.e. SAW) and can perform as well as those using higher cost methods (i.e. BAW). While most of the industry designs surface acoustic wave filters using a coupling-of-modes model, Resonant uses circuit models and physical models. Circuit models are computationally much faster, and physical models are highly accurate models based entirely on fundamental material properties and dimensions. 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 eased 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 capabilities of our software tools, intellectual property and filter designs, and the advantages to the supplier in collaborating with Resonant's existing foundry partner. 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; 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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