

Frost & Sullivan Commends DecaWave for Developing a Suite of Transceiver Products that are Expanding the Application Scope of RTLS ICs

DW1000 is the first product with the potential to complement RFID and Wi-Fi technology in indoor tracking applications

LONDON - 25 February 2014 - Based on its recent research on the real time locating systems (RTLS) integrated circuit (IC) market, Frost & Sullivan presents DecaWave with the 2014 European Frost & Sullivan Award for New Product Innovation Leadership. DecaWave has developed a family of cutting-edge radio communications products known as ScenSor (seek, control, execute, network/sense, obey and respond). Its technology offers key advantages such as precision location information in line-of-sight (LOS) and non-LOS (NLOS) situations, reduced power consumption, small size, and low cost. This will open the door to ScenSor's deployment in areas such as smartphone and wireless gateway markets, which were not possible until now.

The first member of the ScenSor family is the DW1000, a single chip wireless transceiver that is based on the ultra-wideband (UWB) radio technology and compliant with the IEEE802.15.4-2011 standard. It is optimised for RTLS and wireless sensor networks (WSN) by attaching the sensors to the chip.

The DW1000 contains both the receiver (reader) and transmitter (tag) and operates remarkably well even at ranges of 100 meters line-of-sight (LOS) at 6.8 megabits per second (Mb/s), 300 meters LOS at 110 kilobits per second (kbps), and in excess of 35 meters non-LOS. Long LOS and NLOS range reduces the infrastructure required to deploy these systems and being cost efficient, they are ideal for applications in areas such as agriculture, building control, factory automation, healthcare, safety and security, warehouse, and logistics.

"Products based on the DW1000 can have significantly higher precision than other RTLS products and locate up to 11,000 assets in every 20 m cell to within 10 cm accuracy indoors," said Frost & Sullivan Research Analysts Anand Nair and Sumit Kumar Pal. "It is also immune to multipath fading that allows reliable communication in highly fading environments."

The DW1000 has a small footprint of 6mm X 6mm 48-pin quad-flat no-leads (QFN). It also consumes very little power and can run on batteries for several years, depending on the operating mode.

One of DecaWave's noteworthy innovations is the coherent receiver implementation, which allows increasing energy to be extracted from the received signal unlike a non-coherent implementation. This increases the operating range in NLOS conditions, thereby enabling operation indoors where there are normally many obstacles, and the LOS between the transmitter and receiver may not exist.

DecaWave employs the widely used complementary metal oxide semiconductor (CMOS) wafer technology, which aids low-cost manufacturing. As manufacturing cost is proportional to die size, DecaWave's production costs are much lower than its competitors'.

DecaWave is currently engaged with various stakeholders across 33 industry verticals to completely realize the potential of UWB technology. UWB has the ability to distinguish between pulses arriving at the receiver directly from the transmitter as well as the pulses arriving through other non-direct paths due to reflections. This allows an accurate determination of the distance between the transmitter and receiver using time-of-flight (TOF) method, or, facilitates the use of time difference of arrival (TDOA) RTLS, both of which are better methods of RTLS than received signal strength indication (RSSI) used in narrow-band RTLS systems.

DecaWave's chip is functionally and economically viable for use in volume and in remote locations, as it has the ability to operate on batteries or energy harvesting devices. It also avoids spectral crowding in Wi-Fi frequencies within the industrial, science, and medical (ISM) radio bands, and other narrow band signals. It does not interfere with Wi-Fi and ISM devices.

"The integration of the technology in devices such as smartphones and tablets will open up new opportunities across multiple industries in the future," noted analysts Anand Nair and Sumit Kumar Pal in their research. "DecaWave plans to develop a full roadmap of low-cost products with enhanced features and functionalities for specialized markets such as consumer, energy, industrial, automotive and various applications in harsh environments."

Each year, Frost & Sullivan presents this award to the company that has developed an innovative element in a product by leverage leading-edge technologies. The award recognizes the value added features/benefits of the product and the increased ROI it offers customers, which in turn increases customer acquisition and overall market penetration potential.

Frost & Sullivan's Best Practices Awards recognize companies in a variety of regional and global markets for demonstrating outstanding achievement and superior performance in areas such as leadership, technological innovation, customer service, and strategic product development. Industry analysts compare market participants and measure performance through in-depth interviews, analysis, and extensive secondary research in order to identify best practices in the industry.

About DecaWave

DecaWave is a pioneering fabless semiconductor company developing a family of integrated circuit products called ScenSor, compliant to the IEEE802.15.4-2011 standard, which can electrically identify the specific location of any object, person or thing in an indoor environment at very competitive cost, ultra-low power and with a required level of precision never achieved before +/- 10cm. With applications in diverse markets including factory and building automation, agriculture, healthcare, ePOS and retail, and warehousing, the company's flagship DW1000 chip has garnered interest from more than 1,800 firms, research centres and individuals. DecaWave is headquartered in Dublin Ireland, with offices in France, South Korea and Taiwan, and will open a US office later this year. For more information please visit <http://www.decawave.com/>

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