OneRadio Announces Grant of High Dynamic Range Transceiver Patent

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OneRadio Corporation, a University of Washington (UW) spinoff, is excited to announce the grant of U.S. Patent No. 10,419,048 for a direct-sample extremely wide-band high dynamic range (HDR) transceiver. The grant of the foundational patent benefits the Radio Frequency (RF) community at large by enabling a new generation of applications that has never been possible before.

The patent describes a method to implement direct-sample extremely wide-band transceiver while maintaining a high dynamic range, the ability to see extremely weak RF signals in the presence of strong RF signals. Such a system fundamentally transforms the RF application space as in the case of RF fingerprinting, wherein fingerprints are based on the RF transmitter characteristics and not as much on the transmission. Applications related to remote sensing as in the case of RF Geolocation or Passive Radar become more doable resulting in improved accuracy and range. The wide-band combined with the dynamic range makes it possible for the system to act as a multi-function receiver processing different frequencies simultaneously – a “one” radio.

“At the heart of our patented technology is the ability to nearly double the effective number of bits (ENOB) of analog to digital converters (ADCs). This significantly increases the dynamic range of digitizing systems”, said Dr. Anthony P. Goodson, chief engineer and co-founder of OneRadio. “By applying this high dynamic range technology to high-speed ADCs, RF signals can be directly digitized at the antenna, with little to no filtering or conditioning, regardless of the mix of strong and weak signals in the spectrum. This has been the holy grail in RF operations for the last 40 years, and OneRadio has achieved it.”

OneRadio has been working closely with the Pacific Northwest National Labs (PNNL) in enabling cybersecurity applications for government sponsors. In addition, OneRadio has also been working with early adopters to enable Geolocation of low-powered Internet of Things (IoT) devices for indoor location services with the goal of sub meter accuracy at a reasonable price point.

A single OneRadio receiver along with four or more low-cost sensors can accurately pinpoint the location of devices in 3D space saving the costs involved in installation. The OneRadio Geolocation application is capable of locating devices with any underlying transmission standard, e.g. Bluetooth Low Energy, or Wi-Fi, as it operates in an extremely wide band of frequencies. The OneRadio Geolocation application also enables analytics in a multi-faceted environment which includes different kinds of devices and transmissions making it a valuable data analytics platform.

“It is a good problem to have when there are so many avenues we have to choose from in terms of application of our technology,” said Mohan Vaghul, CEO of OneRadio Corporation. “We have now narrowed our focus to where we believe we can scale our company by leveraging not only the benefits of the core technology but also our core competencies. The patent legitimizes our claims and makes it easier for us to engage on a number of fronts. We are truly excited with the potential the technology brings to the RF world.”

“We are pleased to see the OneRadio team’s hard work coming to fruition. In addition to their patent, they have identified several compelling markets for this technology and are dialing in the product-market fit. These are important steps for the company,” said Ron Howell, CEO of WRF Capital. WRF is an investor in OneRadio Corporation.

“It’s gratifying to see OneRadio team’s great progress in developing the platform since they spun out,” said Ryan Buckmaster, Senior Innovation Development Manager who worked with the team at CoMotion, the University of Washington’s collaborative innovation hub. CoMotion supported the work through its range of

services including patent filing and strategy, connections to advisors, and an Innovation Gap Fund grant for early commercialization activities.

The OneRadio™ Platform, the first receiver implemented based on the patented technology, is a 0 – 2.5 GHz wide-band RF receiver, and a first in its category to deliver an instantaneous bandwidth of 2 GHz and an unprecedented dynamic range with an average noise floor of -195dBW/Hz with a 10dbm input.

About OneRadio Corporation

OneRadio creates, develops and markets wide-band receiver technology for radio frequency (RF) applications that demand the highest level of sensitivity and bandwidth. OneRadio provides unprecedented visibility and access into the entire RF spectrum through its innovative technologies that benefit defense, intelligence communities and other enterprises. The company is headquartered in Seattle, WA. For more information, please visit the company's website at www.oneradiocorp.com.

Source: OneRadio Corporation

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