

Frequency spectrum reproduction method and receiver

Avoid interference between IoT systems and regenerate signal spectrum

Overview

In recent years, as wireless IoT has become more popular, real time frequency band spectrum monitoring technology has been developed to avoid interference between different wireless IoT systems. The received signal of this technology is converted from analog to digital signal by multiple analog/digital converter, then the original spectrum is regenerated. However, current technology does not have low loss and low distortion tunable filter, so it is not possible to freely set the bandwidth with a single device. As consequence, the receiver cannot achieve Software Defined Radio.

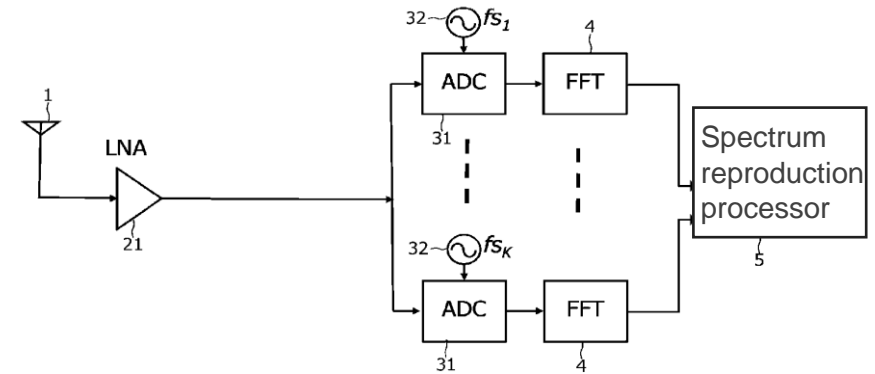
This invention is able to realize a software based spectrum regeneration processing. This frequency spectrum regeneration method does not use a bandpass filter to fold back noise removal, but samples the received frequency spectrum, generates a vector combining each frequency spectrum element and extracts a predetermined band by calculating a solution using an overdetermined decision type algorithm. This enables a software based spectrum regeneration process.

Product Application

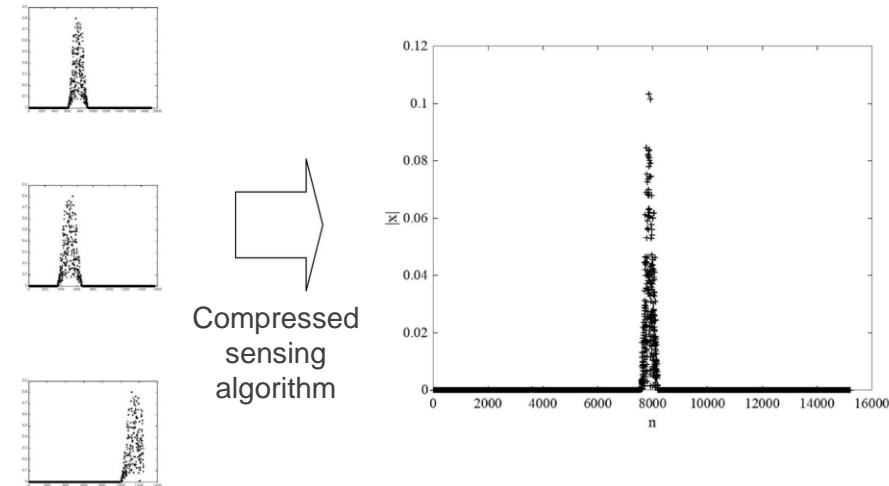
- ❑ Real time monitoring and recording of noise generated by manufacturing equipment in factory
- ❑ Wireless IoT communication

IP Data

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Signal output from bandpass filter is regenerated to original spectrum by compressed sensing algorithm



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