

Distributed RF Front-End for UWB Receivers

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BACKGROUND

Ultra-Wide Band (UWB) wireless broadcasts are capable of carrying huge amounts of data up to 250 feet with extremely little transmit power and high immunity to interference and multipath fading. The spread spectrum characteristics of UWB wireless systems, and the ability of UWB wireless receivers to highly resolve the signal in multi-path fading channels make them a desirable wireless system of choice in a variety of high-rate, short- to medium-range communications. The ability of UWB systems to locate objects to within one inch is highly attractive to applications in the military, law enforcement and rescue agency realms. This UWB system approach is also pertinent to using active sensor networks and collision-avoidance. The circuit techniques that are used in a UWB transceiver are quite different from those used in current narrow bandwidth RF technology thus an incentive to design novel circuit topologies that achieve a gain-for-delay-tradeoff without affecting bandwidth and operating at substantially higher frequencies than conventional circuits.

TECHNOLOGY DESCRIPTION

This invention contains the design and fabrication of a novel low-power receiver RF front-end for ultra wide-band (UWB) that can handle high-speed data rates up to 480 Mbps for short to medium range wireless applications. Features include a) wideband matching at input RF, input local oscillator, and output intermediate frequency ports, b) wideband flat gain, noise figure and linearity, c) reduced power consumption and d) better performance through a programmable matching network.

APPLICATIONS

UWB wireless communications

PATENT STATUS

| Country | Type | Number | Dated | Case |
|--------------------------|---------------|-----------|------------|----------|
| United States Of America | Issued Patent | 7,792,513 | 09/07/2010 | 2006-361 |

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OTHER INFORMATION

CATEGORIZED AS

- » **Communications**
- » Other

RELATED CASES

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