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Operational Description

WU81RS1 :

RTL8191SU is the MAC/BBP IC products , the RTL8191SU dual band MIMO 1T2R chipset that fully comply with IEEE 802.11n draft 2.0 and IEEE 802.11 b/g standards and operate in 2.4GHz bands. RTL8191SU is a monolithic SiGe RF IC that integrates multiple half-duplex direct-conversion radio transceivers designed for IEEE802.11b/g/n WLAN systems or other wireless LAN applications operating in 2.4GHz ISM bands.

This device uses multiplexing . It employees a 2-stream 1x2 configuration . It includes one transmitters and two receivers with two incoherent streams . This devices also employs cyclic delay diversity to improve range and throughput , this devices simultaneously operates on two adjacent channels . Each receive channel achieves low noise figure, high input sensitivity, high linearity, and high output power while consuming low DC power. Each receive path features a gain selectable, low-noise amplifiers(LNA), followed by RF-to-baseband I/Q demodulators, discrete-step variable-gain amplifiers and integrated channel-selection filters.

It uses a zero IF (intermediate frequency) radio architecture to optimize the system cost and area. The zero-IF eliminates the need of IF conversion stages and bulky and costly IF SAW (surface acoustic wave) filter to save the cost and size. The receiver part includes all functional blocks from the RF front-end to the base-band interface: Low-Noise Amplifier, downconversion mixer, base-band filter, and gaincontrolled amplifiers. The transmit part includes the I/Q base-band smoothing filter, I/Q upconversion mixer, and pre-amplifier. With an external PA amplifier, a complete zero-IF transceiver can be implemented. The on-chip frequency synthesizer includes a VCO (voltage controlled oscillator), a prescaler to control the carrier frequency, and a loop filter. The single frequency synthesizer generates the required carrier signal both for receiver and transmitter, since the transceiver operates in time-division duplexed (TDD) manner. Part of internal baseband blocks can be shared to minimize the overhead in hardware.

The WU81RS1 is designed to support standard based features in the areas of security, quality of service and international regulation, giving end users the greatest performance anytime in any circumstance.