

Operation Principle

1. MAC/BBP, RT2571W is a highly integrated MAC/baseband processor to support Wireless photo player. The processor supports the Direct Sequence Spread Spectrum (DSSS) for 2.4GHz band and Orthogonal Frequency Division Multiplexing (OFDM) for 2.4GHz bands. Using advanced digital signal processing technologies, the optimal reception performance under severe multi-path environments is achieved.

For the MAC part, it provides all the required functions and many optional features in the IEEE standards, such as 802.11e (QoS), 802.11h (TPC/DFS), 802.11i (Security). Using advanced algorithms and design methodologies, the chip is best-in-class in terms of throughput, power consumption, range, multi-path tolerance. External interfaces include USB1.1/USB 2.0.

2. Transceiver, RT2528 is a monolithic SiGe half duplex direct-conversion radio transceiver designed for IEEE 802.11b/g WLAN system or other wireless system application operation in 2.4-2.48GHz bands. The transceiver achieves low noise figure, high input sensitivity, and high linearity, while consuming low dc power. The receive path features a gain selectable, low-noise amplifiers (LNA), followed by RF-to-baseband I/Q demodulator, discrete-step variable-gain amplifier and integrated channel-selection filters. The transmit chain includes integrated reconstruction filters, a baseband-to-RF I/Q modulator, discrete-step variable-gain amplifiers for power –level control, and pre-drivers for external power amplifier. The modulator and demodulator are driven by internal VCO. The VCO is phase-locked by an internal 3-wire-interfaced PLL. An internal autonomous calibration circuit calibrates the bandwidth of the integrated channel-selection filters and the reconstruction filters. Three low dropout regulator (LDO) are also integrated.

3. EEPROM, The AT93C66 provides 4096bits of serial electrically erasable programmable read only memory (EEPROM) organized as 512 words of 8 bits.

4. 2.4GHz - 2.5GHz Power Amplifier, The RTC6683 silicon-germanium (SiGe) power amplifier (PA) is designed to operate in 2.4GHz ISM band, compatible with 802.11 b/g wireless LAN system with low power consumption. The amplifier consists of 3-gain stage with inter-stage matching, build-in input matching network, and a power detector for close loop power control operation. For 11b usage: 15.93dBm O/P Power . For 11g usage: 17.65dBm O/P Power .