

OPERATIONAL DESCRIPTION

Main Parts:

The circuitry mainly consists of two ICs:

1. Microprocessor---- A33

- Dual Cortex™-A7 processor is a high-performance, low-power, cached application processor
- Full implementation of the ARM architecture v7-A instruction set, ARM Neon Advanced SIMD (single instruction, multiple data) support for accelerated media and signal processing computation
- Superscalar, variable length, out-of-order pipeline with dynamic branch prediction 8-stage pipeline
- Include VFPv3 hardware to support single and double-precision add, subtract, divide multiply and accumulate, and square root operations
- Integrated timer and watchdog timer in CPU
- Integrated 128KB L1 instruction cache, 128KB L1 data cache, 4-way set associative
- 256KB unified L2 Cache
- Core sight debug solution
- One isolated voltage domain to support DVFS
- Maximum frequency can be up to 1.0GHz @1.08v,125C and 1.5GHz@1.2v,25C

2. Power Management Unit---- AXP223

The AXP223 is a complete, cost effective, highly-efficient Active PMU power management solution, optimized for the unique power, voltage-sequencing, and control requirements of the Allwinner A33 processor. It is ideal for a wide range of high performance portable handheld applications such as tablet or pad devices. This device integrates the Active Path complete battery charging and management system with seven power supply channels.

This device features three step-down DC/DC converters and four low-noise, low-dropout linear regulators, along with a complete battery charging solution featuring the advanced Active Path system-power selection function.

The three DC/DC converters utilize a high-efficiency, fixed-frequency (2MHz),

current-mode PWM control architecture that requires a minimum number of external components. Two DC/DCs are capable of supplying up to 1100mA of output current, while the third supports up to 1200mA. All four low-dropout linear regulators are high-performance, low-noise regulators that supply up to 320mA of output current.

The A33 is available in a compact, Pb-Free and RoHS-compliant BGA280 package.

Connectivity Parts:

WIFI Specification

RTL8703AS is a WLAN IC supporting IEEE 802.11 b/g/n standards with PH connector supporting USB 2.0 signaling. This is a low cost compact WLAN module designed in the product with embedded system for the wireless connectivity. RTL8703AS support RTL8703AS, MCU RTL8703AS needs a 26MHz reference clock.

RTL8703AS WLAN Module is designed to operate in 2.4GHz ISM frequency band. This Module complies with IEEE 802.11b/g/n standards. And the EUT only supports up to 11n20

Channel and Transmitting frequency

IEEE 802.11b/g: 2412-2462MHz

IEEE802.11n HT20: 2412-2462MHz

IEEE 802.11b/g: 11 Channels

IEEE802.11n HT20: 11 Channels

Data Rate

802.11b: DSSS(11/5.5/2/1 Mbps)

802.11g: OFDM(54/48/36/24/18/12/9/6Mbps)

802.11n: up to 65Mbps

Modulation:

802.11b: DSSS

802.11g/n: OFDM

PIFA Antenna gain:-1.0dBi(2412-2462MHz)

BT

RTL8703AS BT IC is designed to operate in 2.4GHz ISM frequency band.

The frequency ranges of the synthesizer for RX mode:

2402 MHz -2480 MHz

The frequency ranges of the synthesizer for TX mode:

2402 MHz -2480 MHz

79 channels, modulation: GFSK, $\pi/4$ -DQPSK , 8-DPSK .The Antenna Type use the PIFA ANT-1.0dBi for 2402 ~ 2480 MHz. This product supports 1Mbps data rate only without higher data rate. BT version 2.1. The BT and WiFi own the same antenna, use the same RF IC , the system is swich between WiFi and BT. WiFi and BT can not simultaneously TX.

The main IC RTL8723BS Receiving and processing the Antenna signals Realization of communicate functional transformation. MCU RTL8703AS needs a 40MHz reference clock.