CIRCUIT DESCRIPTION

1. Radio Frequency unit

The radio-unit consists of all receiver, transmitter and high frequency generation and receives sections of the Android phone hardware.

It represents the transition to the air-interface, the Radio-link between the GSM/UMTS-network base station and the mobile terminal.

Transmit Module

This building block separate and switch the radio frequency signal from the receive/transmit antenna connector via an Antenna Switch Filter into the receiver and transmit part as well as a separation into the two receive bands and transmit high and low band. For each of the two receives chains the corresponding SAW-filter prevents high level out-of band signals to the following receive low noise amplifiers (LNA). To realize a full quad-band application for the receive chain, with respect to the direct conversion receive inputs of the MT6162 transceiver, a circuitry combines the quad band receive chains for GSM850, EGSM900, DCS,PCS and 3G bands(II V IV) into transceiver. For the transmit part, the PA with 50Ohm impedances at all RF input and output ports. The power amplifier(PA) blocks including power control are combined with the low insertion loss quad-band pHEMT switch.

The PA is switched via the radio control signal from LB into HB frequency range. The RF input power coming from the transceiver is set on a constant level. The PA output power is controlled via the level of the analog control voltage RAMP. This control input voltage RAMP for controlling the output power as well as the GSM confirms up- and down-ramping is generated by the BB-unit. The integrated power detection and control loop compensate output power variations via supply voltage, RF input voltage and temperature, thus the transmitted output power is fully compliant to the ETSI specification regarding power time-template and power spectrum requirements.

Transceiver

This building block consists mainly of the transceiver chip MT6162, which is a highly-integrated RF Transceiver IC for the GSM850/900/1800/1900 and 3G bands(II V IV) cellular systems

The receiver section of MT6162 includes Quad-band Low-Noise Amplifiers (LNAs), RF quadrture mixers, channel filters, Programmable-Gain

Amplifiers (PGAs), and on-chip automatic DC-offset correction loops. The differential inputs are matched to external SAW filters.

MT6162 transmitter adopts the direct-conversion architecture with higher integration level and simpler frequency plan. It consists of BaseBand (BB) I/Q filters, I/Q modulators, frequency dividers, output buffers and a bias-core circuit.

WLAN，BT AND GPS

This device supported 2.4GHz WLAN with OFDM modulation and 2.1v +EDR version of BT.

2. Baseband unit

Baseband unit is composed of baseband and memory. Baseband chip uses MT6575 which is an advanced Single Chip Baseband Processor incorporating all digital,analog.It consists of DSP, MCU and digital interface. It presents versatile GPIO and GPO to control LCD, SIM card, to provide JTAG signal, LCD and keyboard backlight controller, and USC interface.

Memory uses COMBO FLASH/DDR2, which consists mainly of the combined memory chip, FLASH and DDR into one single IC package. MT6575 provides 1.2V supply for the memory chip. The FLASH memory is a 4Gbyte EMMC. The DDR2 memory is 4Gbit.

3. Peripherals

Display: serial interface TFT LCD with 800*480, 16.7M color.

ESD: providing ESD protection for microphone interface, system connecter signal interface, SIM card interface and keyboard signal.

MT6620P:Include GPS/WIFI/BT/FM modules.
MT6329: Power management unit, and with a audio power amplifier.