Circuit Description

1. Overview:

CR-MP3005 works at Quad-band: GSM850、GSM900、DCS1800 、PCS1900 bands. The CPU MT6261D is capable of running ARM7EJ-S RISC at up to 260MHz; MT6261D is a monolithic chip integrating Leading edge power management unit, analog baseband and radio circuitry based on the low-power CMOS process.

2. System diagram Overview:

2.1. RF:

RF (Radio Frequency) section is in charge of the signal transmitting and receiving, signal modulation and demodulation.

Product technical parameters:

GENERAL:

Items	GSM850	PCS	GSM900	DCS
Frequency allocation	TX (Uplink) 824M~849M Hz RX (Downlink) 869M~894M Hz	TX (Uplink) 1850M~1910M Hz RX (Downlink) 1930M~1990M Hz	TX (Uplink) 880M~915M HZ RX (Downlink) 925M~960M HZ	TX (Uplink) 1710M~1785MHz RX (Downlink) 1805M~1880MHz
Channel band width	200K Hz	200K Hz	200K Hz	200K Hz
Channel	128~251	512~810	975~1023; 1~124	512~885
Modulation	GMSK, BT=0.3	GMSK, BT=0.3	GMSK, BT=0.3	GMSK, BT=0.3
TX/RX channel space	45MHz	80MHz	45MHz	95MHz
(Fn)Freq. calculating formula	Fn=824.2+(N-128)*0.2 N: channel No. Unit: MHz	Fn=1850.2+(N-512)*0.2 N: channel No. Unit: MHz	Fn=880.2+(N-975)*0.2 Fn=890.2+(N-1)*0.2 N: channel No. Unit: MHz	Fn=1710.2+(N-512)*0.2 N: channel No. Unit: MHz

2.2 BB:

BB (Base-Band) section is the control & management center of the mobile where OS (Operate System) running and provides the MMI for the mobile.

3. Signal Flow & Circuit Description

3.1. RF circuit

3.1.1 GSM RF Circuit is mainly included Transceiver(MT6261D integrated) + HS8269 Transceiver(MT6261D integrated) dedicates to signal modulation and demodulation. Transceiver(MT6261D integrated) is a highly integrated RF transceiver IC for multi-band Global Systems for Mobile communication (GSM).

GSM RF Features

The HS8269 Power Amplifier Module (PAM) is designed for dual-band cellular handset comprising GSM900 and DCS1800 operation. The PAM also supports Class 12 General Packet Radio Service (GPRS) multi-slot operation.
The HS8269 and MT6261D can achieve GSM850/900 DCS1800 and PCS1900 operation.

3.1.2 Receiver principle

RX signal flow chart: The aerial signal mobile received go to RF Connector, and then transmit to transceiver via the selected band in RF switcher & SAW filter. Four IQ signals input to CPU, Go through A/D, DSP, and D/A section in CPU, then output to receiver.

3.1.3 Transmitter principle

TX signal flow chart: Audio signal input from Microphone, Microphone convert the voice signal to analog signal and input to CPU. After A/D in CPU, then send the digital signal to DSP and finish IQ modulation. Then output from CPU to Transceiver (I, IB, Q, and QB). After modulated pass by Modulation Circuit. Then to PA IC (HS8269).

3.2 Bluetooth

MT6261D offers a highly integrated and Bluetooth radio baseband processor. It is fully compliant with Bluetooth V3.0 and offers enhanced data rates of up to 30 Mbps.