
Tune up description

1.Circuit Diagram and Working Theory

The tracker used MediaTek platform. This platform has such advantages as less spare parts, lower cost , stable capability and highly sensitive receive ability etc. The chipset is MT6252A that from MediaTek, MT6252A integrated RF transceiver for multi-band GSM and GPRS cellular systems. The amplifier is RPF88162B that from Renesas Company.

1. RF Part

1.1 Function description and diagram

The main function of RF circuit is to send and receive the wireless documents and also to do document communication with chipset. The diagram is as follow:

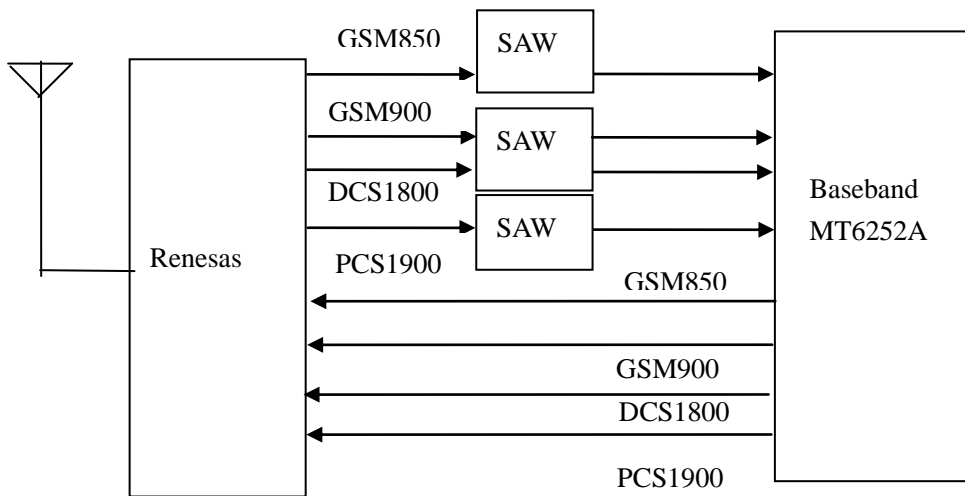


Figure1 RF BLOCK DIAGRAM

1.2 Output power & Power control level

GSM850

Power control level	Transmitter output power (dBm)	Tolerances (normal)
5	31	±1dB
6	29	±2dB
7	27	±2 dB
8	25	±2 dB
9	23	±2 dB
10	21	±2 dB
11	19	±2dB
12	17	±2 dB
13	15	±2 dB
14	13	±2 dB
15	11	±2 dB
16	9	±2dB
17	7	±2 dB
18	5	±2 dB
19	3	±2 dB

PCS1900

Power control level	Transmitter output power (dBm)	Tolerances (normal)
0	29	±1dB
1	28	±2dB
2	26	±2 dB
3	24	±2 dB
4	22	±2 dB
5	20	±2dB
6	18	±2 dB
7	16	±2 dB
8	14	±2 dB
9	12	±2dB
10	10	±2 dB
11	8	±2 dB
12	6	±2 dB
13	4	±2dB
14	2	±2 dB
15	0	±2 dB

1.3 Power versus time

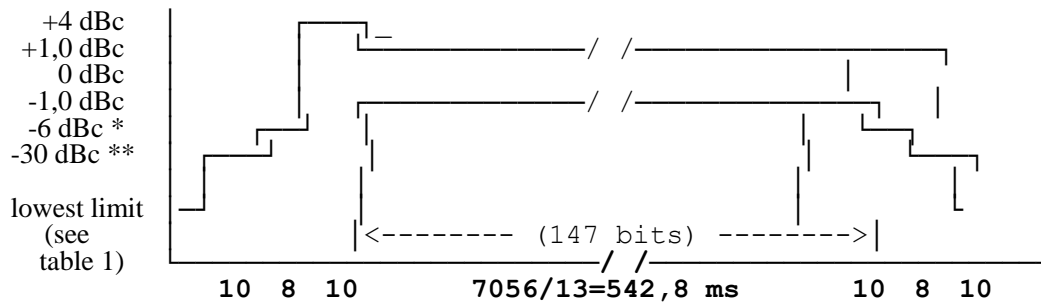


Figure 2 : Power vs time template for normal bursts

- * For GSM 850:
 - 4 dBc for power control level 16;
 - 2 dBc for power control level 17;
 - 1 dBc for power control levels 18 and 19.
- For PCS 1 900 MS:
 - 4 dBc for power control level 11;
 - 2 dBc for power control level 12;
 - 1 dBc for power control levels 13, 14 and 15.
- ** For GSM 850:
 - 30 dBc or -17 dBm, whichever is the higher.
- For PCS 1 900 MS:
 - 30 dBc or -20 dBm, whichever is the higher.

Table 1: Lowest measurement limit for power / time template

	lowest limit
GSM850, GSM 900	-59 dBc or -54 dBm whichever is the highest, except for the timeslot preceding the active slot, for which the allowed level is equal to -59 dBc or -36 dBm, whichever is the highest
DCS 1 800, PCS 1 900	-48 dBc or -48 dBm whichever is the highest

2 Chipset Part

The main functions for Chipset are as follows: Process documents keeping and DSP, keypad inputting, communicating With RF module, RF power controlling, PM Module controlling, SIM card interface, Serial download interface and GPS .For details, please find theory diagram showed on Fig 1-2. The regular module and functions were showed comparatively on it.

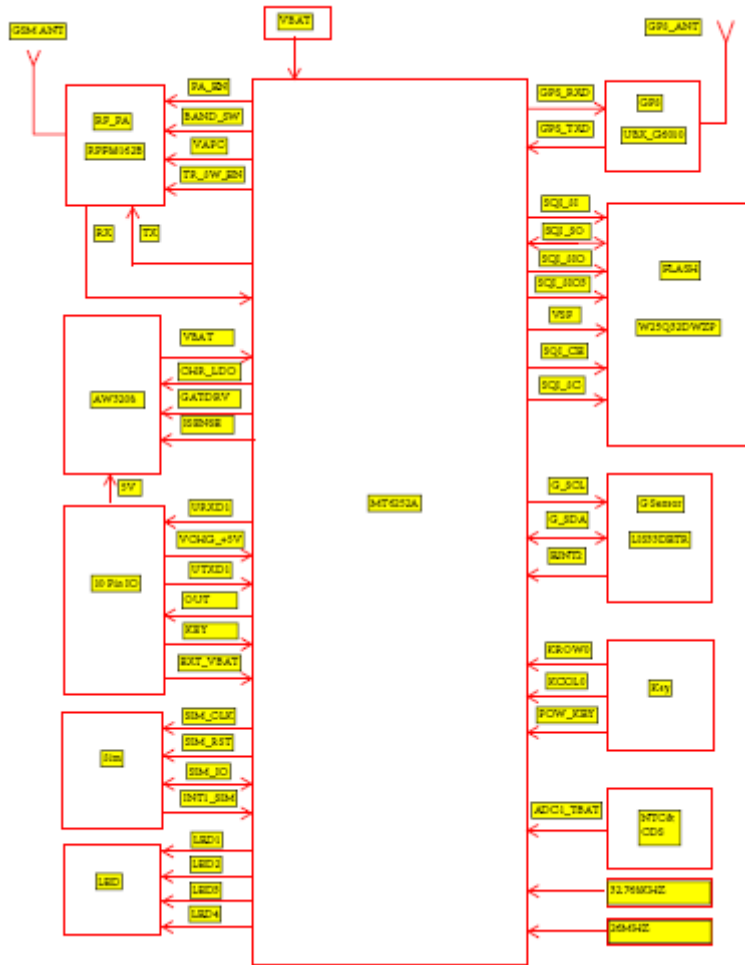


Figure3 Chipset circuit theory diagram