
Operational Description

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1. RF PART

1.1. Summarized description

- The IWOW USB modem is designed to emit within the 900 and 1900 Bands of the GSM standards. The Frequencies are the following :

E900 Band:

TX : 880.2 Mhz upto 814.8Mhz

RX : 925.2Mhz upto 959.8 Mhz

Maximum RF ouput power : 2W

1900 Band :

TX : 1850.2 Mhz upto 1909.8 Mhz

RX : 1930.2 Mhz upto 1989.8 Mhz

Maximum RF ouput power : 0.887W

1.2. Explanation

1.2.1. General

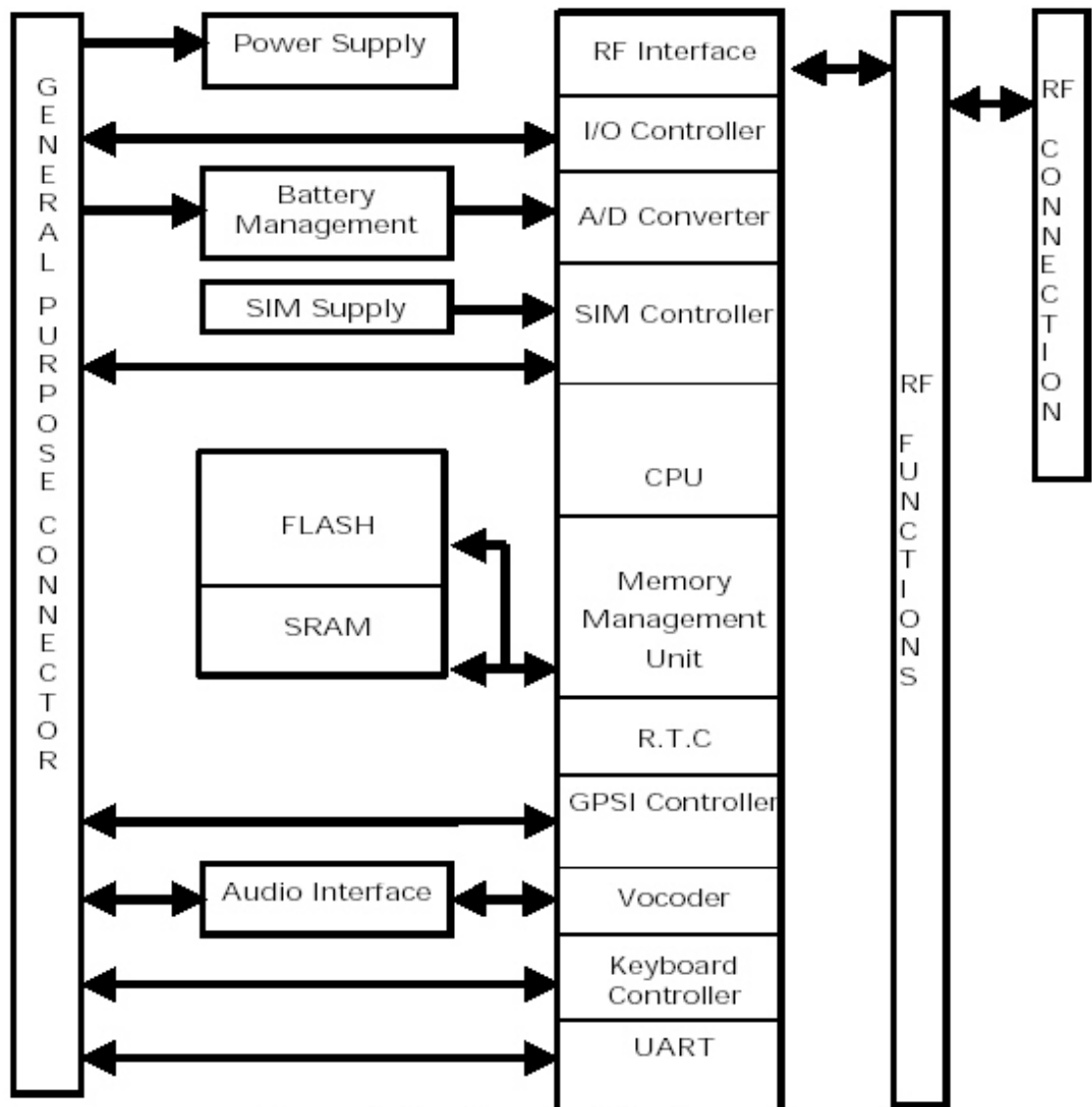
The concept of this radio is both original and conventional. It is conventional because it does not use any direct modulation or demodulation scheme and is based on a superhet architecture, and it is original because it is an improvement compared with older GSM mobiles concepts.

1.2.2. Frequency generator

The 13 MHz reference clock (VCXO) drives the logic and the radio.

2. BASE BAND PART

2.1. Base band block diagram



2.2. General description

2.2.1. General information

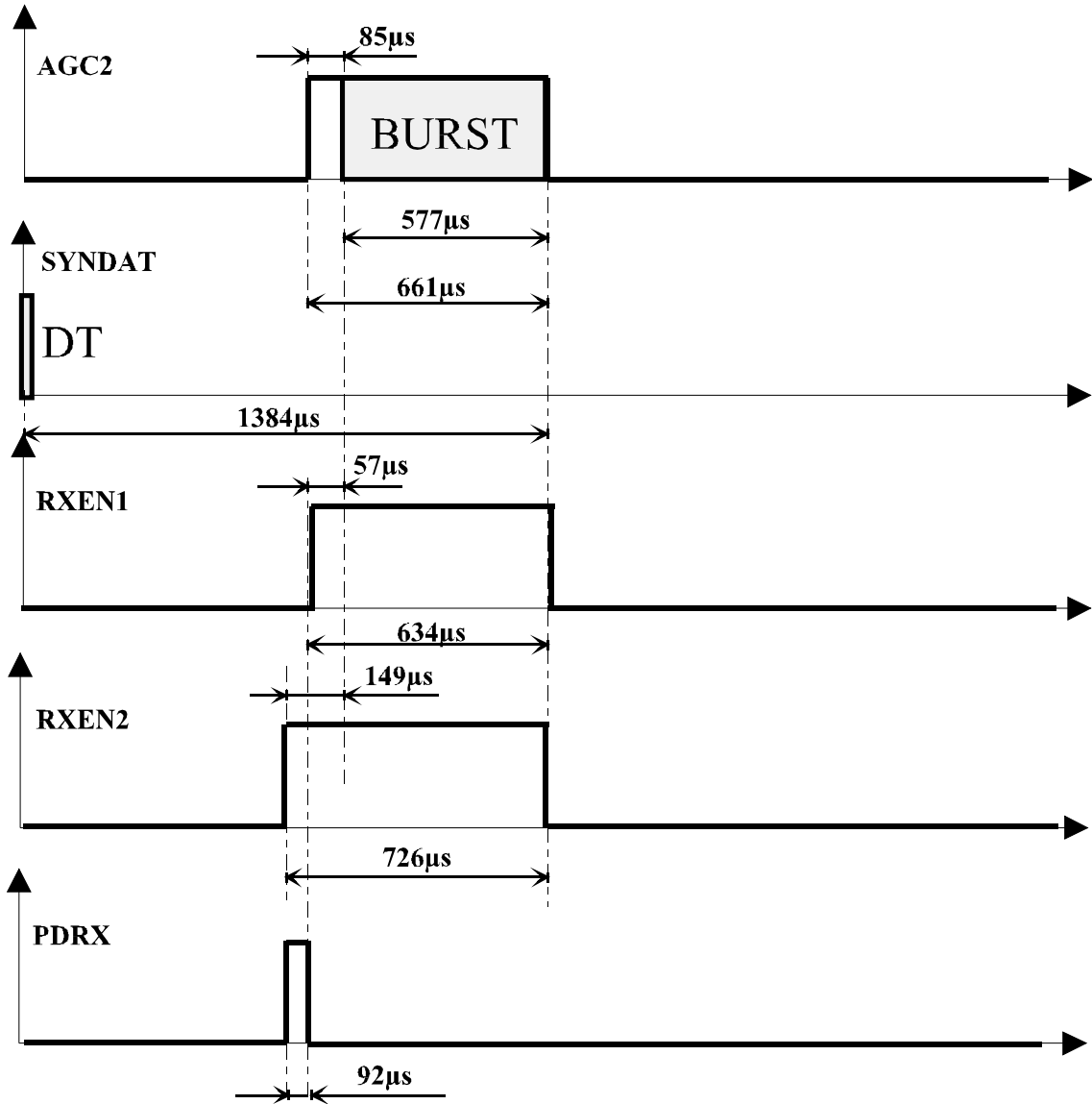
The IWOW USB modem is a self contained E-GSM 900/1900 dual Band modem including the following features :

- 1 Watt GSM 1900 radio section running under 3.6 Volts
- Digital section under 2.8 Volts
- 3 Volt Sim interface
- Real time clock with calendar
- Battery charger
- Echocancellation + noise reduction
- Full GSM software stack
- Complete shielding
- complete interfacing : Power supply, serial link, Audio, Sim card, Keyboard

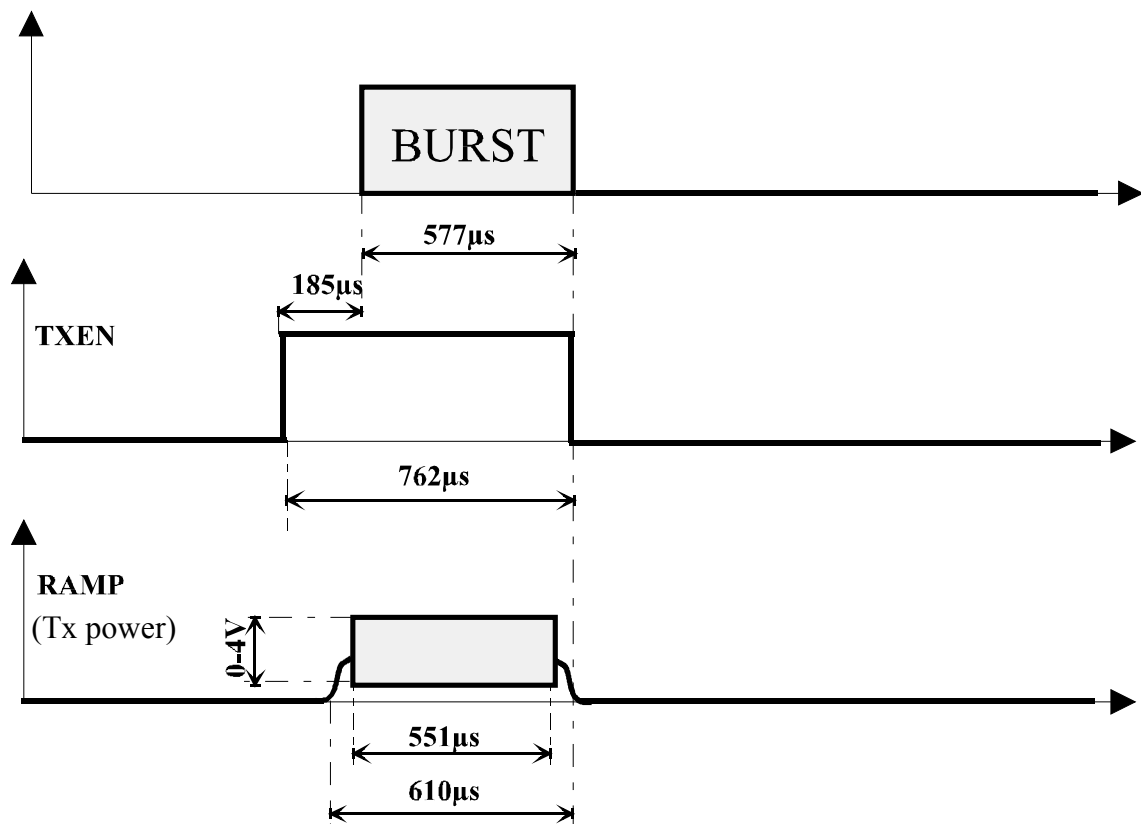
2.2.2. Baseband functionalities

The digital part of the Modem is composed of a PHILIPS-VLSI chip (ONE C, GSM/GPRS Kernel). This chipset is using a 0.25 um mixed technology CMOS, which allows massive integration as well as low current consumption

2.2.3. RX timing



2.2.4. TX timing



2.2.5. Antenna interface

The Antenna used in the WM1080D is an internal antenna. There is no external access to this antenna. There is no external antenna. The RF Connector on the bottom side of the antenna is for production test purpose only.