



## Introduction

U1307 is a middle and high end dual mode mobile phone researched and developed independently by HUAWEI based on the 6245 chipset produced by QUALCOMM Incorporated. It supports WCDMA , GSM/GPRS frequency bands and **Bluetooth module**.

## Following introduce the Bluetooth function module

### Intended use statements

U1307 is a WCDMA /GPRS/GSM/EDGE Mobile Phone. It can only be work in the networks which it supports the WCDMA and GSM technique. If there are no corresponding networks, the RF module of U1307 will not work and no any unwanted emission will be produced.

### Types of Emission

For this mobile phone, the emission designator is **300kGXW**

### Bluetooth Frequency Range

2.400G-2.4835GHz

### Range of Operating Power

Bluetooth: 0dBm- 1dBm.

### Antenna description

Technical parameters of the U1307 Mobile Phone Bluetooth antenna:

Item	Description
Frequency	2.400GHz to2.4835GHz
Input impedance	50 Ohm
VSWR	≤ 3
Peak gain	2.5dBi
Rated power	1mW
Polarization	Linear

### Bluetooth chip Applied voltages

Normal Voltage: 2.8V

### Modulation Techniques

GFSK



### Description of Frequency Hopping Technology

Frequency hopping is used in Bluetooth networks mainly as a spread spectrum technique and to reduce interference. The RF channel is changed in a pseudo-random way after each timeslot (i. e. after each 625  $\mu$ s, corresponding to a rate of approx 1600 hops per second), so that the whole available frequency spectrum can be used. A hopping sequence defines the order the RF channels. This hopping sequence is determined by the Bluetooth device address of the master and must be used by all Bluetooth devices in the piconet. The timing is based on the clock of the Bluetooth master.

The following channels and frequency ranges are available in the different countries:

Europe/USA 2400 MHz to 2483.5 MHz, Channelk:  $f_k = 2402+k$  MHz,  $k = 0$  to 78

Japan 2471 MHz to 2497 MHz, Channelk:  $f_k = 2473+k$  MHz,  $k = 0$  to 22

France 2446.5 MHz to 2483.5 MHz, Channelk:  $f_k = 2454+k$  MHz,  $k = 0$  to 22

Spain 2445 MHz to 2475.5 MHz, Channelk:  $f_k = 2449+k$  MHz,  $k = 0$  to 22

### Description of Digital Modulation Techniques

Bluetooth transceivers operate in the 2.4GHz ISM band. The frequency range is

2400MHz to 2483.5MHz (in most countries).The channel spacing is 1MHz,with an upper

And lower guard band. Output power is also specified, Bluetooth uses GFSK(Gaussian Frequency Shift Keying) as its modulation. The symbol rate is 1Msps.

The 2.4GHz band is part of the ISM (Industrial,Scientific,and Medical) license-free radio bands. Both Bluetooth and 802.11 operate with in the band. Additional frequencies of the ISM band include the 900MHz band, and 5.8GHz band. The un-licensed ISM band also means that devices need to short range so they do not interfere with other devices which may also be using the band.

### Description RF test method

The computer sets U1307 to the Factory test mode and works at Bluetooth mode and sets the CMU200 to Bluetooth Analyzer mode.

U1307's Bluetooth chip connects with CMU200 through SMA interface or Antenna, then all the bluetooth RF performances can be tested.