

Operation Description

EUT is a **Bluetooth Class1 v2.0+EDR USB Dongle** with 79 channels (2402~2480MHz, Space 1MHz).

General Operational Description:

1. Time base of the transmission frequency:

For IF and RF frequency, Crystal is a clock reference.

2. Synthesizer:

Synthesizer inside Bluetooth IC operates at 2.4GHz ISM Band. Internal voltage controlled oscillator (VCO) provides the desired LO signal based on the phase-locked loop (PLL) with a relatively wide tuning range.

3. Transmission:

Bluetooth IC uses FHSS (GFSK) modulation. Digital data signals are converted to analog (TX IQ) signals through DAC, TX IQ passes through low pass filter. TX I/Q signals use direct conversion (zero-IF) architecture converter to generate carrier frequency signals. An external power amplifier is required to magnify output power.

4. Receiver:

Reverse direction isolation of LNA inside Bluetooth IC suppresses unwanted radiation. Then the RF signals will be directly down to IF signals (RX IQ) and high frequency spurious emissions are suppressed by LPF. At last RX IQ signals will be demodulated to digital data signals.

5. Base band Processing:

Channel hopping: Automatic hopping channel is controlled by Bluetooth IC.

Data Modulation: FHSS (GFSK) modulation is implemented by Bluetooth IC.

Power Control Level: Bluetooth IC with the power table is calibrated by manufacturer to limit RF output power.

Transmit/Receive Switch: To switch between TX and RX paths.

Data Link Layer:

It supports BlueCore Serial Protocol (BCSP) and Dynamic UART configuration.

Interface: USB

6. Power: Input 5VDC is from PC through USB port and is regulated by the external regulator to supply the Bluetooth IC.

Product Details

For more detailed features description, please refer to the manufacturer's specifications or user's manual.

Items	Description
Radio Type	Intentional Transceiver
Power Type	5V DC from host
Interface Type	USB
Modulation	FHSS (GFSK / QPSK /8PSK)
Data Rate (Mbps)	GFSK: 1 ; QPSK: 2 ; 8PSK: 3
Frequency Range	2400 ~ 2483.5MHz
Channel Number	79
Channel Band Width (99%)	1164 kHz
Conducted Output Power	10.19 dBm
Carrier Frequencies	2402-2480 MHz
Antenna	Printed Antenna

Table for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	-	-	Printed Antenna	NA	0

Table for Carrier Frequencies

Frequency Band	Channel No.	Frequency
2400~2483.5MHz	0	2402 MHz
	1	2403 MHz
	:	:
	38	2440 MHz
	39	2441 MHz
	40	2442 MHz
	:	:
	77	2479 MHz
	78	2480 MHz