

# CONFIDENTIAL

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## BL-521

### Operational Description

Version: 1.00



## 1. Outline

This document outlines an 'Operational Description' of our current B/T products BL-510/642/719

BL-510 has BCSP firmware

BL-642 has H4 firmware

BL-719 has USB firmware

## 2. How the hopping sequence is generated.(psuedorandomly)

The channel is represented by a pseudo-random hopping sequence hopping through the 79 or 23 RF channels. The hopping sequence is unique for the piconet and is determined by the Bluetooth device address of the master; the phase in the hopping sequence is determined by the Bluetooth clock of the master. The channel is divided into time slots where each slot corresponds to a RF hop frequency. Consecutive hops correspond to different RF hop frequencies. The nominal hop rate is 1600 hops/s. All Bluetooth units participating in the piconet are time- and hop-synchronized to the channel.

## 3. Hopping sequence channels The relevant hopset table is given below:

Geography	Regulatory Range	RF Channels
USA, Europe and most other countries	2.400-2.4835 GHz	$f=2402+k$ MHz, $k=0,\dots,78$

## 4. How the hopping channels are used.

Frequency hopping systems operating in the 2400-2483.5 MHz shall use an average time of occupancy on any frequency not greater than 0.4 seconds within a 30 second period. This means that for the product referred to, the hopping channels are used equally on average.

## How the associated receiver has the ability to shift frequencies.

The synthesizer changes frequency between receive slot and transmit slot, but always returns to the same receive frequency. Thus the product referred to operates so that the receiver shifts frequencies in synchronisation with the transmitted signals

## Input bandwidths match the hopping channel bandwidths

The input bandwidths of the system receiver match the hopping channel bandwidths of their corresponding transmitter.