

## Managing a 2.4GHz frequency band

Bluetooth Low Energy (BLE) is the communication method utilized between the ENGAGE Gateway and locking devices on the 2.4GHz frequency band. The 2.4GHz frequency band is also open to other technologies including some Wi-Fi. The other technologies operating on the frequency band generate what is known as RF noise. This noise can reduce the performance of the ENGAGE Gateway.

In the 2.4GHz frequency band there are 11 channels. These channels can be managed to maximize performance. **A helpful technique is to ensure your 2.4GHz spectrum has openings for BLE to communicate without Wi-Fi interference.**

Figure 1 is an example where 2.4GHz Wi-Fi setup is not leaving channels open for BLE communication. Wi-Fi is broadcasting on all available 11 channels not leaving clean channels for BLE communication.

One strategy is to setup 2.4GHz Wi-Fi on channels 1, 6, and 11 only (Figure 2). This leaves openings in the 2.4GHz spectrum for BLE to communicate.

There are mobile apps such as a Wi-Fi Analyzer by farproc, available for Android devices, that can identify Wi-Fi channel allocation when in the field. It is recommended to consult with the local Wi-Fi installation expert to understand and manage Wi-Fi channels.

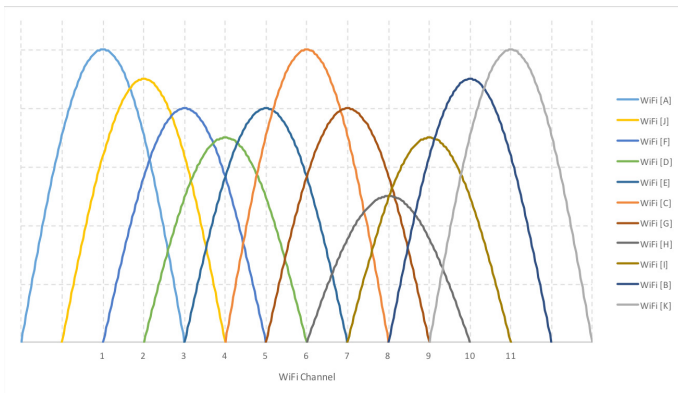


Figure 1

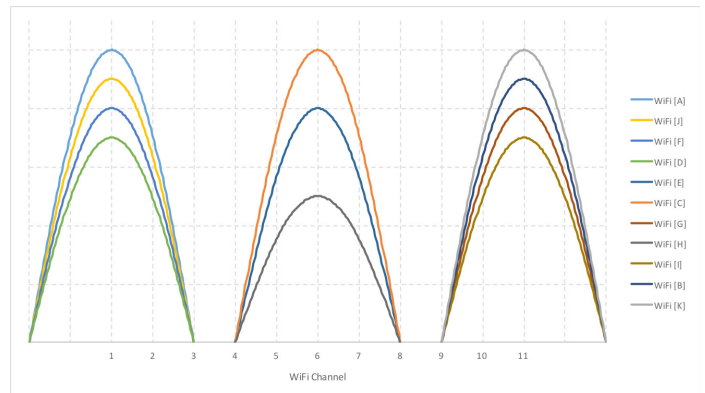


Figure 2

### About Allegion

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