# Best Practices:
# WiFi Connectivity

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For optimal signal strength, we recommend your WiFi router to be within 10 meters from your AVATON IoT Smart device.

Although the BLE lock and the Bluetooth Keypad should be able to communicate with the AVATON IoT Smart Device from over 10 meters away, If there are any obstructions between the AVATION and the BLE lock or the Bluetooth Keypad, this could cause interference and lower the WiFi signal strength. The lower WiFi signal strength could be the cause of a communication problem between the AVATON and the BLE lock or the Bluetooth Keypad.

A good estimation is to cut the distance between the BLE lock or the Bluetooth Keypad From the AVATON in half, for every wall obstructing the line of site between them. So, if your AVATON is 10 meter away from the BLE lock or Bluetooth Keypad but there is a wall between them, this implies that you should reduce the distance between them to 5 meters. If the BLE lock or the Bluetooth Keypad is 10 feet away from the AVATON and there are two walls between them this implies that you should reduce the distance between them to 2.5 meters.

A weak Wi-Fi signal can be a problem. Pre-checking the Wi-Fi signal level and quality at the location you plan to install the AVATON beforehand can help reduce wireless connectivity issues.

   a. To check the Wi-Fi quality at the location where you plan to install your AVATON you can turn on the cellular phone or tablet Wi-Fi that is connected to the same network and ensure that the Wi-Fi signal and the data-rate are acceptable.

   b. A bandwidth or speed-test App can be used to give a more accurate measurement of your internet connection quality. The performance of the speed test dependents on your internet service plan.

There are many consumer devices that use 2.4 GHz frequency and they can interfere with the Wi-Fi signal. Turn off those devices if you encounter connection issues. Here are some products that may use 2.4 GHz frequencies:

   a. Bluetooth devices
   b. Baby monitors
   c. Cordless phones

d. Walkie Talkies
e. Remote control toys
f. Wireless video and audio equipment
g. Microwaves
h. Wireless keyboard and mice
i. A neighbor's Wi-Fi Access Point can also be a source of interference. A Wi-Fi analyzer App can identify interference. If Wi-Fi interference is identified, change the Wi-Fi channel.

Check Router Network Settings. A router firewall may have high security or parental controls configured, and these settings may lock some required network ports for the device. The following network ports should be opened/whitelisted on your router:

a. 80
b. 443
c. 53
d. 55055
e. 55056

It's best practice to keep your AVATON away from any walls or corners that interfere the line of site between the AVATON and the BLE lock or the Bluetooth Keypad.