

## **Positioning of Wireless Access Equipment**

Wireless access equipment such as the Gigacenter, 804 mesh unit or wireless routers let you access your network from virtually anywhere within the operating range of your wireless network. However, the operating distance, range and speed of your wireless connection can vary significantly depending on the physical placement of this equipment.

In most cases our installer would have attempted to locate this equipment in an optimal area however please consider the following information if you attempt to move or re-locate equipment in your home.

The thickness and number of walls the wireless signal passes through can limit the range. For best results, place this equipment.

- Near the center of the area where your computers and other devices operate, and preferably within line of sight to your wireless devices.
- So it is accessible to an AC power outlet and near Ethernet cables for wired computers.
- In an elevated location such as a high shelf, keeping the number of walls and ceilings between the access device and your other devices to a minimum.
- Away from electrical devices that are potential sources of interference. Equipment that might cause interference includes ceiling fans, home security systems, microwaves, computers, the base of a cordless phone.
- Away from any large metal surfaces, such as a solid metal door or aluminum studs. Large expanses of other materials such as glass, insulated walls, fish tanks, mirrors, brick, and concrete can also affect your wireless signal.

## **Interference Reduction Table**

The following table shows the recommended minimum distance between the access device and household appliances to reduce interference (in feet and meters).

Household Appliance Recommended Minimum Distance (in feet and meters)

Microwave ovens 30 feet / 9 meters

Baby Monitor - Analog 20 feet / 6 meters

Baby Monitor - Digital 40 feet / 12 meters

Cordless phone - Analog 20 feet / 6 meters

Cordless phone - Digital 30 feet / 9 meters

To get the best internet access speeds you should connect your devices to the 5G radio.

2.4GHz has a greater signal distance and is better going through walls etc. but will be slower and 5GHz is faster but will not have the same coverage distance as the 2.4 GHz radio.

## Primary sources of Wi-Fi interference

- **Microwave** — the closer the router is to microwave the more network interference you can expect to occur when the microwave is in action. That is especially true for older wireless routers that just like microwaves operate in the 2.4 GHz spectrum.
- **Cordless Phone** — again 2.4 GHz spectrum. Just like previous item these phones can cause large signal interference. Wi-Fi Interference will occur during active call time.
- **Poorly Wired Satellite Dish** — if a satellite dish is not properly wired or the old wires are deteriorating it can cause quite a signal interference.
- **Other Wireless Devices** — any wireless device can technically be the reason for a signal interference. These can be wireless speakers, baby monitors, garage door openers, etc. Some other wireless devices operating in 2.4 GHz or 5 GHz spectrum, including microwave transmitters, wireless cameras can also contribute to wireless interference.
- **Power sources** — electrical railroad tracks or power lines that are in close proximity can be causing WiFi interference. If you can try not to position your Wi-Fi router near power lines in the wall or close to the breaker box.
- **Fluorescent lights** — fluorescent lights and the ballasts that allow them to work can emit a 2.4 GHz radio signal.
- **Poorly shielded cables** — if you suspect that a certain device is the cause of interference, try to disconnect it and use a different cable for it.
- **Some external monitors and LCD displays** — these can be specifically annoying on the 2.4GHz band between channels 11 and 14. If you are working with a monitor connected to a closed laptop the interference might be even stronger. Make your access point use 5 GHz or a lower 2.4 GHz channel.
- **Neighbors' WiFi** — powerful WiFi networks that overlap can affect each other.

Simple things like a home's construction can cause barriers to Wi-Fi coverage. Below are the common barriers and construction materials and their related impact levels:

<b>Type of Barrier/Construction</b>	<b>Interference Level</b>
Wood	Low
Plaster	Low
Synthetic Material	Low
Glass	Low
Water	Medium
Bricks	Medium
Marble	Medium
Concrete	High
Metal	High
Mirror	Very High

\*The above is intended for informational purposes only. Your results will vary.