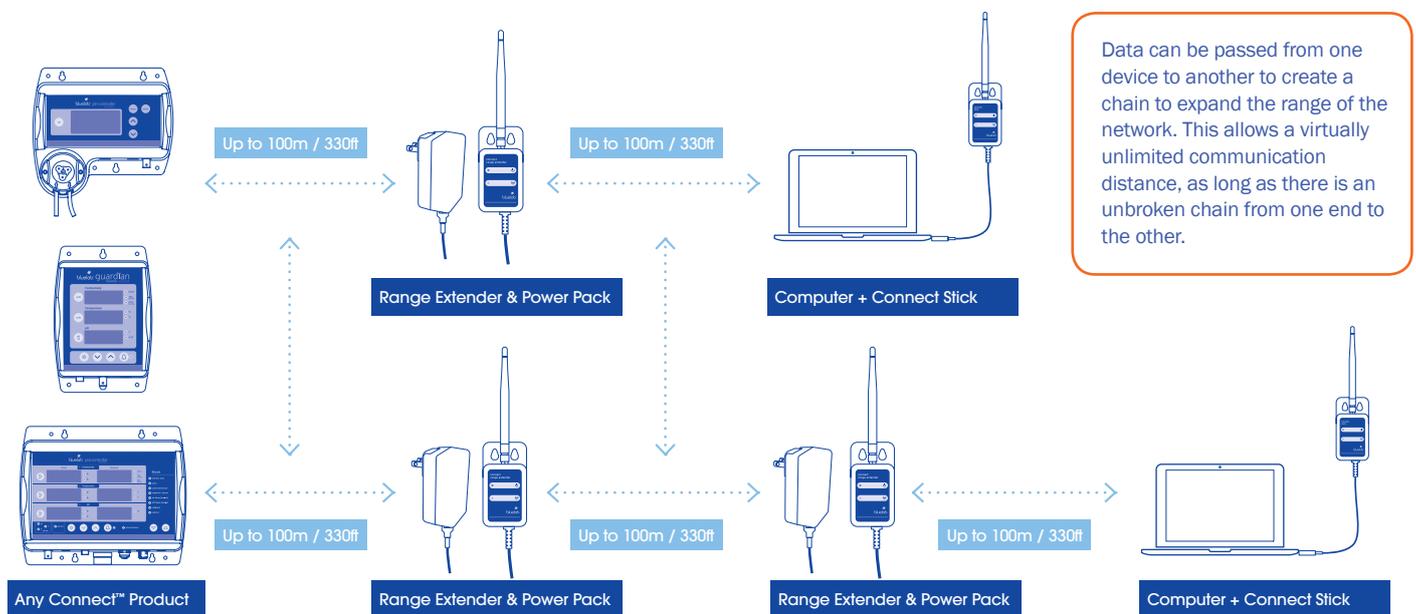


# Positioning Bluelab<sup>®</sup> Connect<sup>™</sup> Devices

## Networking overview

Bluelab<sup>®</sup> Connect<sup>™</sup> forms a wireless network between your computer and all of the devices in your system. These devices are constantly in communication with the computer via the Bluelab<sup>®</sup> Connect<sup>™</sup> Stick 2, but they have only a limited range over which this is possible.



If the distance between two devices is too far for a wireless link to be formed, a Bluelab<sup>®</sup> Connect<sup>™</sup> Range Extender 2 can be placed between them. This effectively doubles communication distance. If required, multiple Range Extenders can be placed in a chain.

## Maximising Range

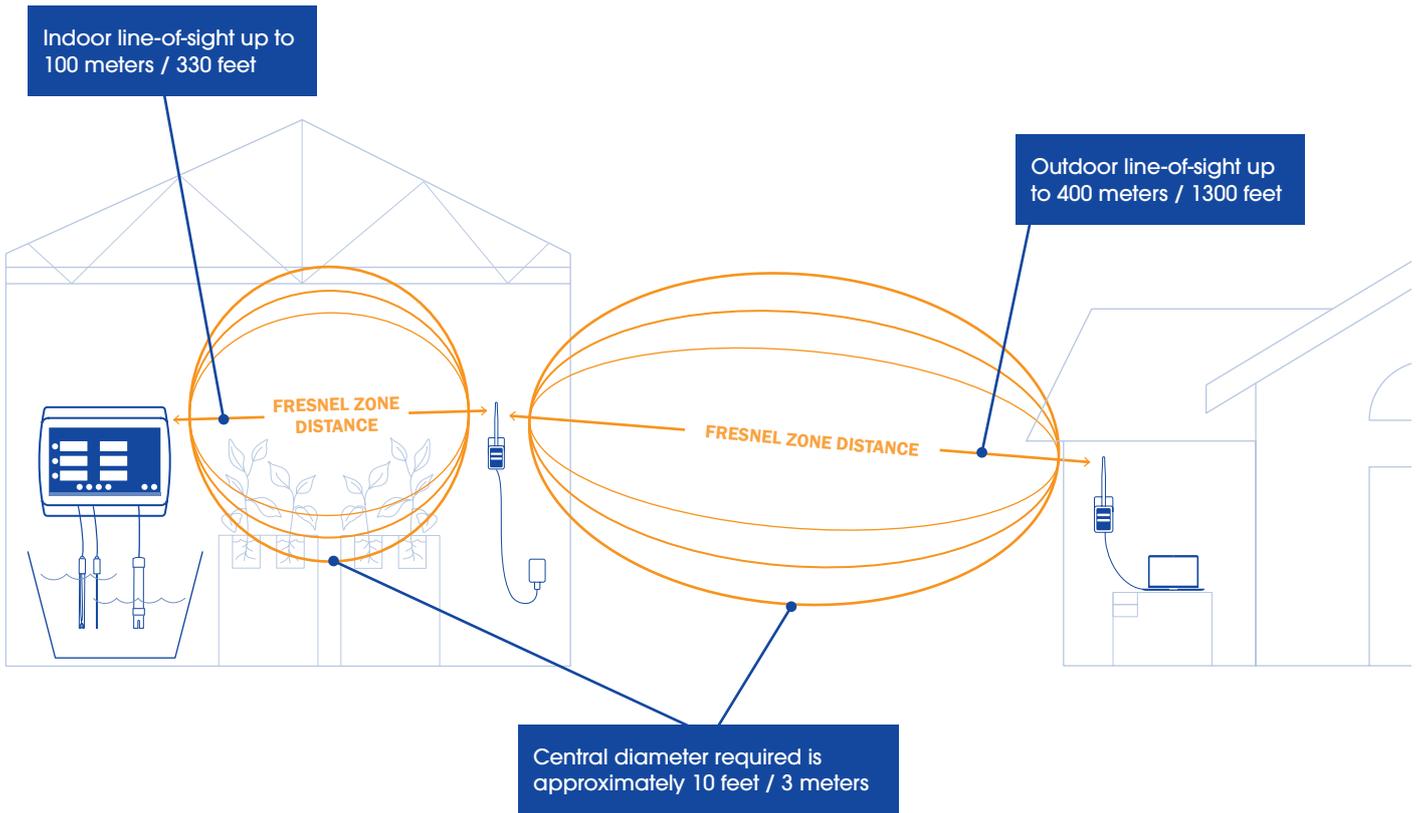
The communication distance is heavily dependent on the environment between the transmitter and receiver. Transmission is most effective with a clear, unobstructed line of sight between the two points. However, a radio frequency (RF) line of sight is different from a visual one, in that it requires a football shaped area of free space between the transmitter and receiver (called the "Fresnel zone"), rather than just a straight line.

If the communicating devices are mounted close to the ground (less than one foot), over half of the Fresnel zone can be obstructed by the earth, which results in a significant reduction in communication distance achieved. To avoid this problem the communicating devices should be mounted high enough off of the ground (6 feet being optimum) to avoid the earth interfering with the central diameter of the Fresnel zone.

If obstacles exist between two points resulting in poor signal strength, the communicating devices can be raised on one or both ends to clear the Fresnel zone of obstructions. How far above the ground and other obstacles the antennas need to be is determined by the diameter of the Fresnel zone. In this case, the central diameter required is approximately 3 meters (10 feet).

**Transmission is most effective with a clear, unobstructed line of sight between the two points... a radio frequency (RF) line of sight requires a 'Fresnel Zone'.**

The communicating devices should be mounted as high enough off of the ground as possible, 6 feet is the optimum height for Bluelab® Connect™ Devices.



## Mounting Devices

When mounting your devices, care should be taken to make sure they are as far away from metal objects as possible. It is advisable to give at least four inches of separation, more if possible, between the communicating device and other metal structures or objects. If nearby metal gets too close to the antenna it has the potential to interfere with transmission and may reduce its range.

## Do you need more information?

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