

Bluetooth vs Wi-Fi

General Comparison



	Bluetooth	Wi-fi/WLAN
Bandwith	Low (800kbps)	High (11mbps)
Hardware Requirement	Bluetooth adapter on all the devices connecting with each other or Bluetooth integrated devices	Wireless adapter /wireless enabled on all the devices on the network. A wireless network router and/or access point.
Ease of use	Fairly simple to use. Can be used to connect upto seven devices at a time. It is easy to switch between devices or find and connect to any device.	It is more complex and requires configuration of hardware and software. Much more of an investment.
Sample Applications	Point of sale, goods in/out, logistics, mobile receipt printing, file transfers	Stock management, inventory control, pallet tracking, order processing
Primary Devices	Mobile phones, PDAs, barcode scanners, office and industrial automation devices	Notebook computers, PCs, mobile computers, Tablet PCs, handheld terminals, PDAs
Range	Upto 10 meters	Upto 100 meters
Security	More secure than Wifi as it covers shorter distances and has a 2 level password protection	Standard Wi-fi has all the risks associated with any other network. If someone accesses one part, the rest can also be accessed. However additional measures can be taken to ensure a more secure network.
Power Consumption	Low	High
Frequency	2.4ghz	2.4ghz

Both Bluetooth and Wif-fi have their place in today's offices and warehouses, but choosing between Bluetooth and Wi-fi can depend on a number of factors including the type of application and your budget.

Bluetooth is standard on a variety of devices from mobile phones, PDAs, laptops, mobile computers, portable printers and many more. Bluetooth is ideally suited for small applications where devices are in close proximity to each other, short range wireless communication on a small scale. For example a number of major DIY stores will use Bluetooth barcode scanners for reading hard to reach barcodes on bulky items that corded scanners would struggle to reach. Another popular Bluetooth application is mobile receipt printing, a mobile computer can be paired with a printer for printing customer receipts, job sheets or general documents on site without the need for restricting cables.

Wi-fi applications are suitable for situations whereby a number of mobile devices are required to sit on a network , such as stock taking, inventory control or applications where data is needed in real time on a larger scale. Even though Wi-Fi uses the same radio frequency as Bluetooth, Wi-fi has much a higher power consumption which results in a much stronger and faster connection. Taking

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stock control as a popular example, multiple devices can be on the network sending and receiving data instantly. Meaning you can have any number of your team out in any part of the warehouse carrying out a stock take with real time results. The same could not be achieved with Bluetooth due to the restriction on range.

Although both technologies are useful for varied applications using Wi-fi and Bluetooth for different applications in the same location can cause interference. When Bluetooth data is being transmitted it can cause a Wi-fi access point to delay it's transmission back to the host. Basically the access point will wait for the Bluetooth signal to stop before attempting to transmit again, causing a delay. Whilst this is not necessarily detrimental to your application the potential delay and slower network connection need to be taken into account for mission critical applications and steps may need to be taken to minimize the impact.

One way of reducing the impact is to ban Bluetooth devices within your Wi-fi network area, however in most cases this is not suitable, especially in public areas and can be very difficult to enforce. For your particular business application however you can set up a company policy to limit the use of Bluetooth to only specific applications such as file transfer, syncing etc.

Another popular step is to ensure adequate Wi-fi (802.11) coverage. A strong, healthy Wi-fi (802.11) signal will significantly reduce the impact of Bluetooth signals. This can be achieved by carrying out RF site survey's which identify weak spots and then generally increase coverage and offer a certain amount of redundancy for mission critical applications.

If you have any questions or wish to discuss your application please contact us on tel: 08700 66 22 17 or by email sales@penmobile.co.uk