Comark WiFi Checking Your WiFi Signals Instructions

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Comark WiFi Checking Your WiFi Signals

Introduction

This guide is intended to help you make the right decisions about the installation of RF300 and RF400 WiFi loggers, in order that when you get to install them you are not facing an unexpected road block.
The Comark range of WiFi loggers do not create their own WiFi network and as such it is important that you know that your WiFi network is available to you for use. It may strike you as obvious, but just because there is a WiFi Network, IT may not want lots of WiFi loggers connecting to it, so it is always good to have IT onside before you make any purchasing decision.
Another important point is WiFi will not always be in the places you need it. For example, in a restaurant WiFi is not guaranteed to be available in all parts of the Kitchen, so care need to be taken to check first before making the purchase.

- **How do I know my WiFi is accessible?**
  If you are working in a workplace environment the best person to speak too is your IT department or IT manager, if you have one. They are best placed to advise if the WiFi Network is accessible to the Loggers. It may not be, or you may need to use a different WiFi network that is insulated from your office network, that is used, for example, by guests in the building or in this case the WiFi Loggers.
  How do I know that the WiFi Network has the capacity for these Loggers?
  Again, this can only be answered by your IT Department. Please contact them before ordering loggers to confirm that you can use the network and to ensure that there is capacity for the loggers.
  If you are the purchaser and custodian of your WiFi network, then you will need to check the specifications of the WiFi Access points to determine their suitability for the WiFi loggers.
  In general, adding a few loggers to a WiFi network is not going to be an issue. However, if you wanted to add say 20 or 30 loggers in a small area to an already overloaded WiFi network, then you may need additional hardware to accommodate this extra burden.
- **What about Home WiFi or simple Broadband WiFi in my Shop?**
  Coverage of WiFi in small areas such as at home or in a small retail environment is often limited to a small number of connections. This is especially true of Home WiFi Routers, these normally only allow 5-10 concurrent connections and therefore adding 10 or 20 Loggers may be an issue and you will need additional hardware to make it work, possibly a mesh networking system. These are available from most Electrical outlets or online.

Confirming you have WiFi in the right places

Confirming that WiFi is available in the places you need it, can only be achieved by you or IT. Don't just think that WiFi is available everywhere, because it likely will not be. If you have requirement for monitoring down dark corridors or in basements, where no-one goes, expecting WiFi, then it probably is not there. And, once again you will need to speak to IT to ensure that they can increase the coverage of the WiFi Network into these hard to get to places.

- **How do I extend my WiFi network?**

  Extending the WiFi network can be achieved in several different ways. Depending on the area to be covered by WiFi there are always several options to include WiFi into that area.

  WiFi coverage can be extended by one or more of the following;

WiFi Repeaters

If WiFi coverage is close by but not quite there, then a WiFi Extender or Mesh network Setup can be the simplest option to extend coverage into the Area you need it. This can work well in small areas with home broadband type WiFi.

Using an Ethernet Port

If your remote area has got Ethernet ports, then you should be able to add WiFi to that area by making use of the Ethernet port. Best to speak with IT to ensure that the right Access Port is installed to give you the right coverage and ensure that the port is live, as so many un-used ports are usually disconnected from the network at the network switch and need to be re-connected.

Build a new Mobile Network WiFi

You can buy WiFi Routers that work by using a 3g or 4g Signal, like a mobile phone. So, if you have phone signal in an area but no WiFi and no Ethernet access to the Internet, then a mobile router is an option. These are generally not very expensive, but they do require a SIM card and either a contract or pay as you go. Note; some mobile routers only allow 10 concurrent connections, so if you need more than this, check the specifications before you buy.

- **How to complete your own Survey?**

  Surveying is an important part of ensuring that the WiFi Network coverage is suitable. You may not have thought about it, but if WiFi is available it is always a good idea to check that it's available for that Fridge you want to monitor that's tucked away in the corner of the room at the end of the corridor.

  You can check the WiFi Coverage quite easily, with your Phone or Tablet. Simply ensuring that you can get online in the location, can often be enough to confirm that your WiFi loggers will work. Patchy or suspect WiFi coverage should be improved before you invest in the loggers so as not to be disappointed when they don't work as you expect. Survey each location where you want to place a logger.

  Bear in mind that poor or weak WiFi will have knock on effects to the loggers, such as loss of signal from time to time and it will also impact negatively on the battery life of the logger.

Surveying for Geeks!

There are many tools for checking WiFi Coverage and this is one of our favourites…

WiFi Analyzer for Android

It works on your Android Phone and Tablet and is a great tool for checking all things WiFi, from coverage to radio channel and interference from other WiFi networks. Yes, too many WiFi networks in the same space can interfere with each other.
Try the App at home and you might be surprised with all the competing networks there are in your area. If every house has WiFi, the coverage will not simply be just in the house, but could be in the garden, the road and you may even see several other networks in the house from your neighbours. All of the Routers will be fighting for access to the Radio Spectrum and this will always result in poorer connections for everyone.

What to look out for?

Obstacles

When working with WiFi it is important to understand what interferes with the signal. For example, walls are not good for WiFi Signal as the brick can absorb the signal. Modern open plan offices are best for WiFi Coverage and older brick walled buildings are worse.
WiFi Signals, just like you and me, don't like going upstairs. So, when the router is placed downstairs in the front room, it will likely not reach the spare room at the back of the house.
This is where a modern mesh network WiFi network offers significant advantages. It works by ensuring that you have coverage where you need it and will route the signals as appropriate automatically. Best of all you only see one WiFi Network. Mesh networks also overcome many of the issues with sites occupying multiple floors.

Faraday Cages

OK so you've heard the term, but what exactly is a Faraday Cage? Basically, it's any metal box, could be a Fridge/Freezer, or room in a Food Factory. Anything that has metal walls, floor and roof. On a larger scale, think Shipping Containers. These make good outside chillers and freezers, but you won't get a wireless signal in or out very easily.

- **How do I overcome a Faraday Cage?**
  Easy, just ensure that there is either WiFi Coverage inside the cage, think Food Factory where Access Points can be placed inside the rooms to ensure good coverage, or close by outside.
  Inside Shipping Containers or outside Chillers, then the problem is trickier to overcome. Here the recommendation is to place any monitoring kit on the outside of the container with a small hole drilled for the probe to go through. Then all you need do is ensure that there is WiFi Coverage outside of the building. Might just need an Access Point inside the building close to a Window for example.
  It is possible to purchase specialized equipment to provide WiFi Outside, but that's outside the scope of this guide.
- **Can I use the loggers outside?**
  Yes, loggers can be used outside, but with caveats. They are not intended to withstand the Sun, which will fade the display as well as heat up the logger unnecessarily, which can impact performance and could be dangerous. The loggers all have a maximum operating temperature, which is easy to exceed if the logger is placed in direct view of the Sun, so it should be placed in a well shaded area.
  Also, the loggers are waterproof, but won't appreciate rain or frost continuously, so placing them inside waterproof enclosure is a must for all outside applications.
- **Positioning of my Loggers?**
  The position of the logger is always important. As well as the WiFi coverage questions, you need to think about where the logger is going to go and whether the local users want to see the display. Placing the logger on the

outside of a Fridge or Freezer is recommended and the probe going through the door on the hinge side. But, remember to check that you have WiFi Coverage here first.

- **Can I move the loggers from one WiFi network to another?**
  In simple terms no. Unlike your phone or tablet which can remember and connect to many different WiFi networks, the WiFi loggers are designed to be used in one place and therefore connect to a single WiFi Network at a time. They cannot remember multiple networks.
  If the network name changes or a new network must be used then the loggers will have to be setup again, either via the PC software or App.
  Your asking me to buy additional hardware, can I buy that from Comark?
  Sorry no. There is so much WiFi Equipment on the market, with 3g/4g Routers, Mesh Networking Solutions that are so vast and potentially complex, that Comark has taken the decision that it does not sell or even recommend what WiFi Equipment you should purchase. Our suggestion is to speak with your IT manager or department, if you have one and if not, the provider of your Internet Services. Tell them what you need to do, and they should be able to advise. WiFi networking is ultimately relatively simple and straightforward, if certain rules are applied. But, Comark is not an expert in this field and therefore we direct you towards your own IT experts to answer your networking questions.

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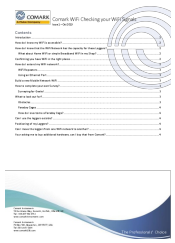
Documents / Resources

	COMARK Comark WiFi Checking your WiFi Signals [pdf] Instructions Comark, WiFi, Checking, your, WiFi Signals