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Troubleshooting Your Vodafone Sure Signal

When troubleshooting issues with a Vodafone Sure Signal we need to ensure that there is communication between the Sure Signal unit and the internal Vodafone systems. When there is a usable connection the Sure Signal will be able to draw down its profile containing the registered numbers allowing these numbers to use the signal that it is producing. The steps below are designed to check the attributes of this connection, the profile and that this profile is being updated with the Sure Signal.

Wait 24 hours after the original set-up

In some instances it can take up to 24 hours for the Sure Signal to fully register with the server. Before attempting any of the steps below, please ensure you have registered and set up the Sure Signal over 24 hours ago.

Check the physical connection between your Sure Signal and your Router/Modem

In order to function; the Sure Signal needs to be connected to the internet via an Ethernet port on your router or switch/hub. A faulty Ethernet cable will prevent the Sure Signal access your internet connection.

So it's always a good idea to check this cable works. To verify the Ethernet cable works, check that the lights on the Sure Signal's Ethernet port, where the cable is plugged in. There should be a Link indicates that a circuit has been made and a second light which flashes whenever data is being passed. If either the data light or the link light is not on, this could indicate a problem with the cable. If the cable is faulty try another cable, or plug the cable into a different port on the router or Switch.

Check that you have an active Internet connection

Make sure you are currently able to connect to the internet on another device, such as your PC, or a Wi-Fi enabled phone. If you are not able to make an internet connection, this indicates a problem with the Router or the Internet connect. Try rebooting the router and retest the internet connection.

Reboot your Router / Modem

Turn off your Sure Signal and router or switch at the wall and wait 20-30 seconds, then turn it back on. Wait for the lights on your router/switch to indicate an internet connection has been established, and then power up the Sure Signal.

Connection speed

The issue could also be due to the speed of the broadband connection Vodafone Sure Signals require a minimum of 1MB download and 300kbps upload. To test the speed of the connection, check the upload and download speed by visiting www.speedtest.net

You need to run 3 tests back to back to get a true result, ignoring any spikes in the speed or abnormally low results. If the internet speed (on average) is lower than the minimum required then we cannot guarantee that the service will work consistency. In these cases you will need to speak to your ISP about the connection speed.

Check that the Sure Signal has been assigned an internal IP address by your Router

In order to connect to your network and share the Internet, the Sure Signal must be assigned an internal IP address by the router. **Most routers automatically assign IP addresses using DHCP** which is enabled as default by almost all manufactures. If DHCP has been disabled, you will need to assign the Sure Signal an address allocation or enable DHCP. If you are unsure how to enable DHCP the router manual or manufacturer's website will have instructions on how to do this. If the router does not allow DHCP, then you will need to assign a static IP address to the Sure Signal's MAC Address. **The MAC address can be found on the sticker at the back of the Sure Signal unit.**

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DSL Protocols

You will need to confirm that the broadband connection is using the PPPoA (Point-to-Point Protocol over ATM) rather than PPPoE (Point-to-Point Protocol over Ethernet) as the sure signal will only currently work with PPPoA. You will need to speak to your ISP to confirm the protocol, alternatively you can check your ISP's website.

Latency

So that a Sure Signal can allow you to make call it needs to send data out via a broadband connection and receive a response back from Vodafone. This response needs to happen within a certain timeframe for it to work correctly; this amount of time is called the response time. The response time is determined by the path that the broadband provider sends the customer's data down to reach the server it is trying to reach. For a Vodafone Sure Signal to work at all the response time needs to be below 240 milliseconds (ms) and for it to work well it needs to be below 200ms.

When the Sure Signal does not receive a response within the required time and will either display flashing power light or the power light solid and the 2nd light flashing.

It is possible that disconnect the power supply from your Sure Signal and plug it back in again will resolve the issue by allowing it to resume the service. This however is dependent on the response time again being below 200ms.

To check the response time you will need to perform a **trace route**:

PC:

1. Select *Start*
2. Then *Run*
3. Then type *cmd* and enter
4. Then type *tracert 212.183.133.181*

Mac:

1. Click on *Applications* icon
2. Click on *Utilities*
3. Click on *Network Utility*
4. Select the *Trace Route* tab
5. Type in *212.183.133.181*
6. Click *Trace*

A trace route sends a number of messages to our servers and measures the response times in ms (milliseconds). If the times display are over 200ms you would need to speak to your service provider to see if they can reduce the response time and resolve the latency issue.

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Packet loss

Packet loss is the amount of data or packets that are lost whilst being sent over the path, in this case from your router to the Vodafone systems. A path ping will test this and will record the percentage of data packets that were lost between each "hop". With the exception of the final hop or a firewall (which appears as all *'s and 100% loss) the pathping should not show more than 10% packet loss. If the packet loss is above 10% it will indicate that the connection is not stable enough to support voice calls.

To check for Packet loss perform a **Path Ping**:

PC:

1. Select Start
2. Then Run
3. Then type cmd and enter
4. Then type pathping 212.183.133.181 and press enter

Mac

Pathping is not part of the OS X network utilities however a ping will provide packet loss information in the ping statistics.

1. Click on *Applications* icon
2. Click on *Utilities*
3. Click on *Network Utility*
4. Select the *ping* tab
5. Type in *212.183.133.181* and send *20* packets
6. Click *Ping*

Ports

Confirm that you have the following ports open in both directions. Even if you have opened these before, please check that the rules are still in place as ISP updates have been known to reset these rules.

In most cases, routers support a system called "Universal Plug-n-Play" or UPnP, which will setup port forwarding automatically.

You can contact your ISP or the router manufacturer for guidance on how to open ports or use www.portforward.com which has instructions on how to open the below ports for most router models.

Ports and Protocols:

Port 8 – TCP/IP	Unassigned
Port 50 - TCP/IP	Remote Mail Checking Protocol
Port 53 – TCP & UDP	Domain Name System (DNS)
Port 67 – TCP & UDP	Bootstrap Protocol (BOOTP) Server; also used by Dynamic Host Configuration Protocol (DHCP RX)
Port 68 – TCP & UDP	Bootstrap Protocol (BOOTP) Client; also used by Dynamic Host Configuration Protocol (DHCP TX)
Port 1723 – TCP & UDP	Microsoft Point-to-Point Tunnelling Protocol (PPTP)
Port 4500 – UDP	IPSec NAT Traversal
Port 500 – UDP	Internet Security Association and Key Management Protocol (ISAKMP)
Port 123 – UDP	Network Time Protocol (NTP)—used for time synchronization
Port 33435 to 33445 – TCP & UDP	Traceroute for IP location check and bandwidth estimation