SIM Card requirements
for the CK:680 & CK:690
Outdoor Noise Measurement Kits

Cirrus Research plc
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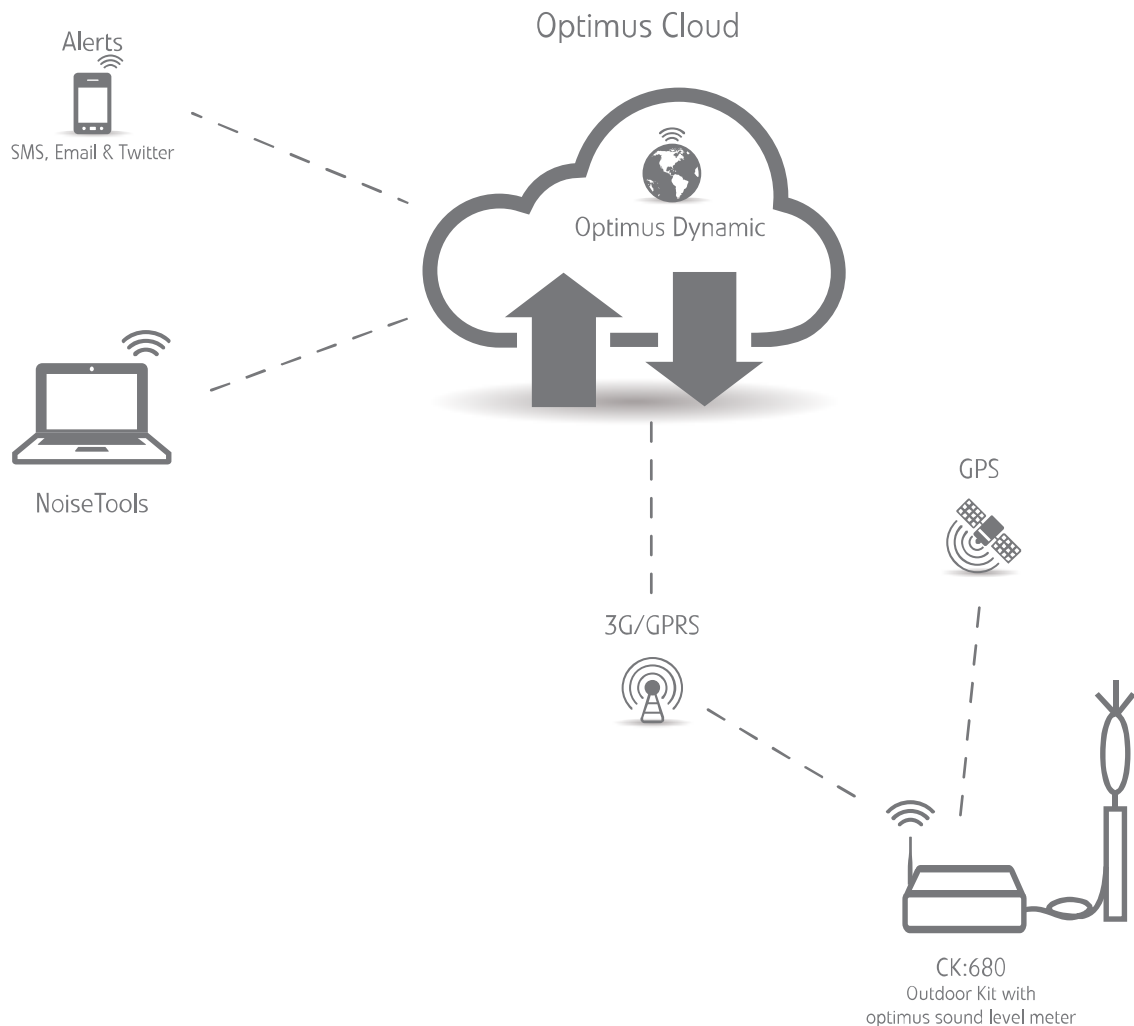
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1 Introduction

The CK:680 and CK:690 Outdoor Noise Measurement Kits contains a modem that supports communication over a mobile phone (or cellular) network using packet data over a 3G/GPRS protocol.

This allows the NoiseTools software to communicate with the Optimus sound level meter in the measurement kit as if it was connected directly to the PC.

The connection is made over the internet via Optimus Dynamic. This system runs on the Optimus Cloud server and allows the NoiseTools software to know how to connect to a remote Optimus sound level meter. This eliminates the need for an additional modem at the PC end.

As long as the PC has an internet connection, NoiseTools will be able to communicate with the Optimus in the outdoor kit. See page 6 for more information about the internet access requirements of the Noise-Tools.

The Optimus can then be configured and data downloaded directly in to the NoiseTools database.

2 Requirements for the SIM Card

The CK:680 and CK:690 measurement kits contain a 3G/GPRS modem that requires an active cellular or mobile network connection.

This connection is made via a SIM card which must be configured by the service provider to specific requirements. The SIM Card used in the modem within the CK:680/CK:690 must be configured to support the protocols used by the Optimus Dynamic web platform.

A standard SIM card from a cell phone will not work and cannot be used with the CK:680 or CK:690 measurement kits.

2.1   What type of connection is required?

There are two ways to connection to the CK:680/CK:690 systems. These are:

1. A connection with a **public** IP address & and outgoing internet connection.
   This is the preferred method.

   Please note that a Public IP Address and a Static IP Address are not the same and the connection does not require static IP address.

2. A VPN connection with an outgoing internet connection

2.2   What to ask for when sourcing a SIM card

The network providers in your region may be able to supply a suitable M2M connection but many do not. In this case you will need to locate a specialist M2M (Machine to Machine) service provider.

2.2.1   Public IP address

When you have located a suitable M2M supplier, ask for a SIM card and connection with:

     a. **Public IP address**
          i. Where available, a preset APN is preferred but this is not essential
     b. Outgoing internet connection

If a Public IP address is not available, the supplier may be able offer an alternative solution using port forwarding.

If you cannot get a connection with any form of public IP address, you should ask if a VPN connection is available.

2.2.2   VPN Connection

This type of connection will require a VPN client to be installed onto your PC and a connection made before NoiseTools will be able to access the instrument.

A VPN client is a small software program that allows a secure connection to be made between two devices, in this case the PC with the NoiseTools software and the CK:680/CK:690 measurement kits.
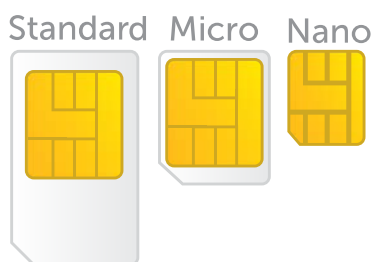
The specific VPN client will be recommended by the service provider and they will give detailed instructions about how this can be configured for use on their network.

Please note that if the VPN option is used, this may require additional configuration of any hardware or software firewalls installed on your PC or network to allow the VPN connection to connect.

2.3   What size of SIM card is required?

The physical SIM card itself is a standard Mini-SIM. This is a normal sized SIM card.

A Micro-SIM or a Nano-SIM will not work without a suitable adaptor.

3 NoiseTools Internet Access

In order to function properly NoiseTools requires access to the following locations:

- update.crplc.co.uk
- optimus-cloud.co.uk
- s3.amazonaws.com

Note: NoiseTools only uses outgoing HTTP connections to port 80.

If you have a firewall on your PC, you will need to add NoiseTools to the list of allowed programs. This is often automatic and you may see a prompt the first time you run NoiseTools.

If your network has other firewalls blocking outgoing connections, or if you are unable to allow NoiseTools on your machine, you will need to contact your IT department and ask them to configure the firewall to allow the NoiseTools program to access these locations.

If your network uses a proxy server to provide access to the internet this will need to be correctly configured on your PC.

NoiseTools supports most proxy servers and will automatically detect these when configured in Windows, via Control Panel > Internet Options.

If this is not configured or if NoiseTools has trouble connecting to the internet, you will need to contact your IT department and ask them to configure your firewall to allow access.

3.1   Additional Requirements for Remote Instruments

Optimus Green (CR:170 series) with CK:680/CK:690 outdoor kit.

When NoiseTools connects to a CK:680/CK:690 outdoor kit using a remote connection, it requires access to the following:

- dynamic.optimus-cloud.co.uk
- The instrument IP Address

You can find your instrument's IP address via the Optimus Cloud website, once it has been linked to your account. Most instruments use a static IP address so this will not change over time.

In most circumstances, you will not need to do anything other than what was required to grant NoiseTools general access to the internet, as described above.

However if you have a strict firewall or use a proxy server you will need to contact your IT department and ask them to configure the firewall

Note 1: Connections to the optimus/CK:680/CK:690 instrument use an outgoing TCP connection to port 22850. These do not currently support forwarding through a proxy server.

Note 2: These connections can be made from any available port in the range 49152 to 65535. The ports are allocated and controlled by Windows.

Note 3: If the NoiseTools PC or network has a firewall that blocks outgoing connections, it will need to be configured to allow connections from NoiseTools to the Optimus/CK:680/CK:690.

This can be done by allowing any connection to the known IP and Port of the instrument(s). It can be further restricted to the IP address of the NoiseTools PC if required.

4 UK SIM card providers

In the UK, Cirrus recommends SIM cards from Eseye Limited.

Eseye are a specialist M2M supplier and their contact details are as follows:

enquiries@eseye.com

Eseye Limited
8 Frederick Sanger Road
Surrey Research Park
Guildford, GU2 7YD
Phone: +44 1483 685200
Website: www.eseye.com

Eseye refer to a "real world" IP address and they can provide SIM cards that are correctly configured for use with the CK:680.

5 References

Technical Note 28 - Recording Audio with the optimus green (CR:170) sound level meters

Technical Note 44 - Configuring an optimus green sound level meter for use with a CK:680 Outdoor Kit

Cirrus Research support website http://support.cirrusresearch.co.uk

6 Cirrus Research Offices

The addresses given below are the Cirrus Research plc offices. Cirrus Research plc also have approved distributors and agents is many countries worldwide. For details of your local representative, please contact Cirrus Research plc at the address below. Contact details for Cirrus Research authorised distributors and agents are also available from the Internet Web site at the address shown below.

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