Wireless setup guide

The Control Hub of the Opalum FLOW and STEAM series speaker systems is sold in two versions, with and without wireless LAN (WLAN) support. This guide applies to WLAN enabled units only.

Connecting the Opalum Control Hub to your wireless network
There are two ways of connecting the Control Hub to your wireless network. Either by push-button or by USB configuration. Push-button connection is recommended for most users.

In this guide a lot of third party applications are mentioned. Opalum/Actiwave AB can in no case be made responsible for damage or loss, direct or indirect, caused by the use of third party applications. Help and support issues concerning third party applications should be directed to their respective creator. The names of these third party applications are properties of their respective owners.

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Push-button connection (recommended)

The easiest way of connecting the Control Hub to your wireless network is by using the push-button on your wireless home router. Connection by push-button is supported by most fairly new routers. The name of this feature varies from vendor to vendor. Common names are WPS, QSS or PBC. The routers push-button may also be indicated by just a figure. On some routers this feature needs to be enabled before use, please consult your routers user manual if that is the case. If your router does not support connection by push-button please see "Connection by USB configuration" below.

To connect by push-button:

1. Disconnect the DC power from the Control Hub. See fig 1. (Make sure the power supply is connected to the wall socket).

2. Wait for at least three minutes[1].

   Fig 1

3. Connect the DC power to the Control Hub. See fig 2. The status led on the Control Hub should now start flashing white.

4. Now, within one minute, push the connection push-button on your wireless router[2].

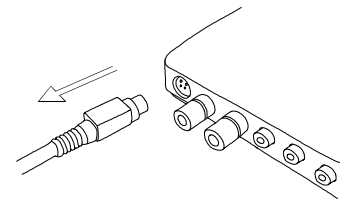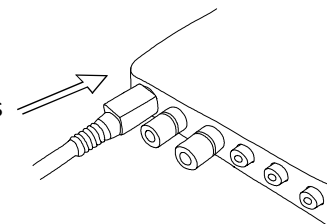5. After a while the Control Hub will automatically shut down.

   Fig 2

The wireless network setup is now done. To verify network connection please start the Opalum system using the remote control. Turn to green source. When the status led on the Control Hub stops flashing and goes solid green, the system should show up as a media rendering device on your network.

To verify network connection please see *"Verifying that the Opalum system is connected to the network"*.

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1 Due to the Control Hub's ultra low power consumption three minutes without power is needed to allow for a clean reboot.
2 On some routers the push-button needs to be pushed and held for some seconds.

Connection by USB configuration

To configure network connection by USB you will need the following:

- Empty USB stick memory.
- Windows PC (preferably with wireless network support).
- Internet connection to download the OpalumWirelessConfig configuration utility.

To configure by USB

1. Disconnect the DC power from the Control Hub. See fig 3. (Make sure the power supply is connected to the wall socket).

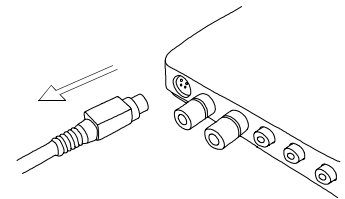2. Insert a USB stick memory into your PC and **make sure it is empty**.

Fig 3

3. Download the OpalumWirelessConfig configuration utility from
   http://www.opalum.com/download/OpalumWirelessConfig.exe and save it
   to your empty USB stick memory. Save the file from your internet browser, do not run the file directly. If
   your browser automatically saves files in a default hard drive folder, please move the file from there to the
   USB stick memory.
   Important: The OpalumWirelessConfig.exe-file must be placed at the root of your USB stick memory (not
   inside any folder).

4. Run the OpalumWirelessConfig utility from your USB stick memory (double-click the file in windows
   explorer). If windows "User account control" box shows up, click yes to proceed. The following screen will
   be displayed:

5. If your computer has a wireless network card you may automatically scan for available networks. If this is
   the case select "Search for available networks", click Next and continue reading on step 6. If you prefer to
   manually configure the network settings, or want to use a static IP address, select "Configure manually",
   click Next and continue reading on step 9.

6. The following screen will show up. Click scan to search for available wireless networks. If there are no available networks or if your computer does not have a wireless network card (make sure the wireless card is activated if using a laptop) the network list will remain empty. Select the network to which you want to connect your Opalum system and click Next.
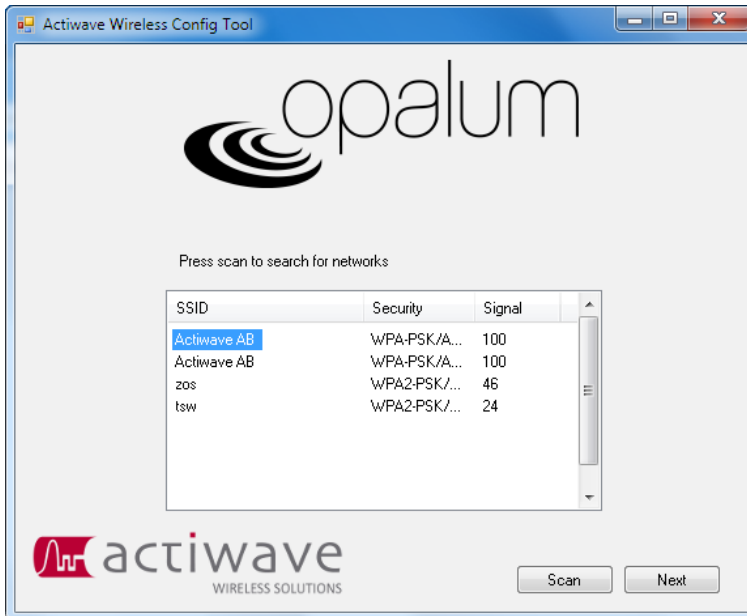
7. On the following page, enter the network password and the preferred name of your Opalum system. Click Save.
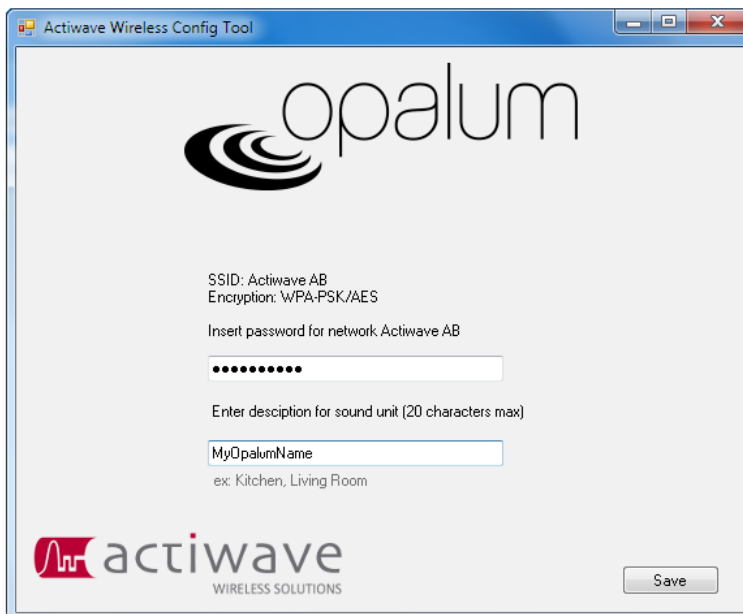
8. A configuration file is now created and saved to your USB stick memory. Now do the following:

    1. Close the configuration utility.
    2. Remove the USB stick from your computer.
    3. Make sure the Control Hub has been disconnected from the DC power supply for at least three minutes[3].
    4. Insert the USB stick memory into the Control Hub.
    5. Connect the DC power to the Control Hub. See fig 4. The status led on the Control Hub should now start flashing white.
    6. The Control Hub now reads the configuration file from your USB stick memory.
    7. **Wait until connection box automatically turns off.** This may take several minutes, please be patient.
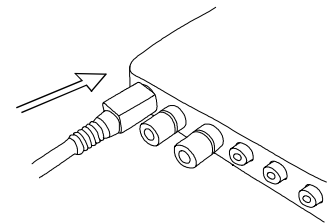   8. Remove the USB stick memory from the Control Hub.

Fig 4

The wireless network setup is now done. To verify network connection please start the Opalum system using the remote control. Turn to green source. When the status led on the Control Hub stops flashing and turn solid green, the system should show up as a media rendering device on your network.

To verify network connection please see *"Verifying that the Opalum system is connected to the network"*.

9. In the manual configuration mode enter the network name (SSID), network password, select if DHCP should be used and enter the preferred name of your Opalum system. Also enter the type of network encryption, if used, on your network. If DHCP box is checked click Save and continue read on step 6. Otherwise click Next and enter the preferred IP address of the Opalum system, the network mask, primary DNS server IP address and gateway address. Click Save and go to step 6.

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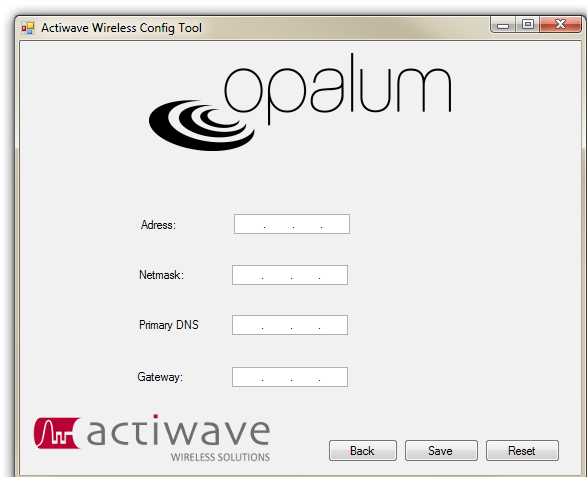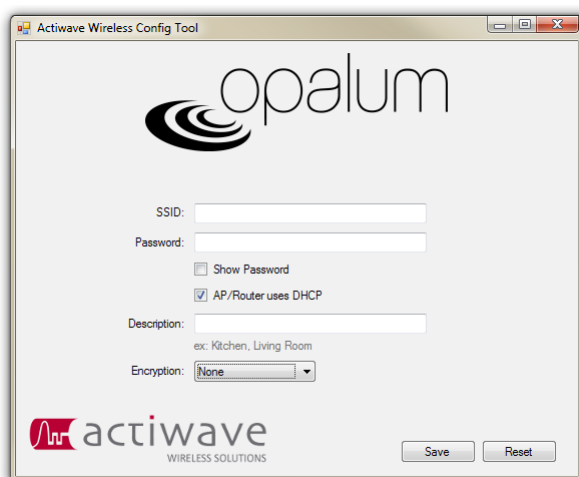
3   Due to the Control Hubs ultra low power consumption three minutes without power is needed to allow for a clean reboot.

Verifying that the Opalum system is connected to the network.

As soon as you start your Opalum system it connects to the specified wireless network. Change to green source and you will see the status led on the control hub flash. When the led stops flashing green it has successfully connected. To verify the connection in Windows 7 click the Windows button and type `network` in the search field. Click Network. You can also open this view from Windows Explorer.

If your Opalum system shows up as expected it is now time to choose what media servers and control points you would like to use. Media servers and Control points are not in the scope of Opalum. But there are plenty of them out there to buy or to use for free. To help you getting started please go through *"Introduction to DLNA/UPnP"* and *"User scenarios"* on the next few pages.
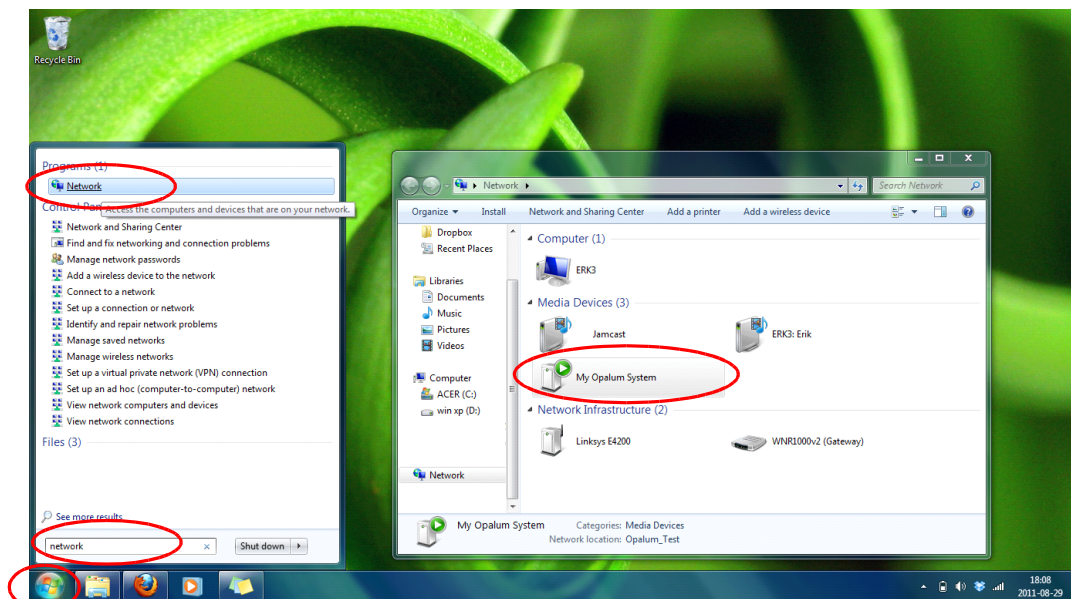
The Opalum system shows up under Media Devices.

Introduction to DLNA/UPnP

Media sharing through DLNA or UPnP is basically built as a three way system where all units connects to the same network. This way you are in total control of what song is played, from anywhere to anywhere in your home network. There are many third party software applications and hardware devices handling Digital Media Server (DMS), Digital Media Controller (DMC) and Digital Media Renderer (DMR) functionality. Some times a combination of DMC and DMR is called Digital Media Player (DMP) or DLNA/UPnP clients. Applications can be found online or in Apples AppStore or Googles Android Market. Many of these applications are available free of charge.

Control Point

Media Server

Media Renderer

Wireless network router
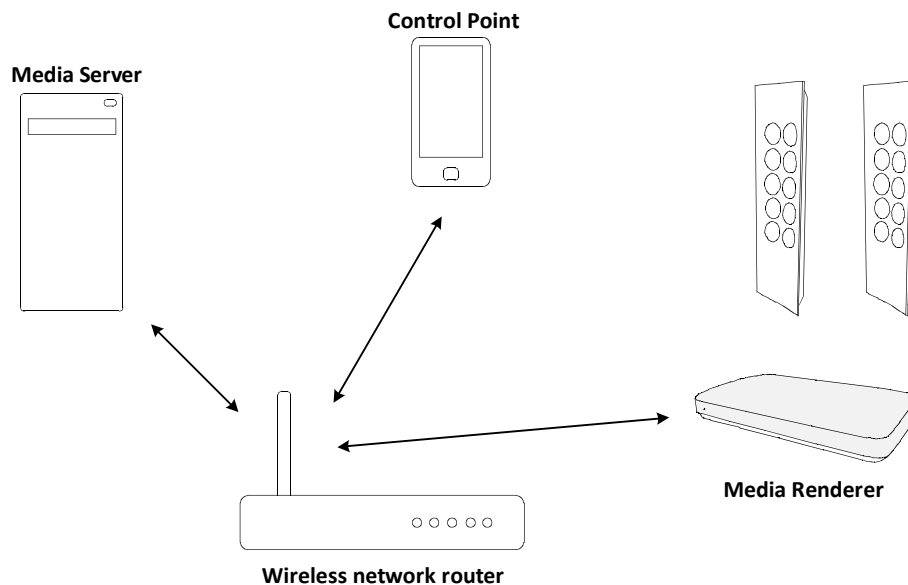
The wireless version of the Opalum Control Hub can receive streaming music as a DMR from all DLNA and UPnP compatible devices made for this purpose.

Media Server (DMS)
A DMS is a device that holds all of your media files. This device may be a computer running a media server software, your smartphone/pad or a NAS with a built in DMS. Some wireless network routers also has a built in DLNA compatible USB NAS functionality that can be used for sharing your media.

Media Renderer (DMR)
The DMR is the device that renders the media for you, typically playing an audio or video stream. This might be a DLNA compatible flat screen TV, a computer or as in this case – your Opalum sound system.

Control Point (DMC)
To control the flow of media from DMS to DMR you use a DMC. This may be a computer or your smartphone/pad.

All-in-one clients
There are also devices and software programs that combines several of these functionalities. For example a smartphone app may be at the same time a media server and a control point letting you stream song stored on your smartphone to a media renderer. A flat screen TV may be both control point and media renderer letting you browse video media files stored on your computer on the TV screen before playback.

Example Media Servers (DMS):
Jamcast (windows)
http://www.sdstechnologies.com

Windows Media Player (win7/vista/xp)
http://windows.microsoft.com/en-US/windows/products/windows-media-player

TVMOBiLi (win7/vista/xp/Mac OSX/linux)
http://www.tvmobili.com

Foobar2000 + UPnP plugin (win7/vista/xp)
http://www.foobar2000.org
http://www.foobar2000.org/components/view/foo_upnp

Allegro Media Server (Mac OSX/win7/vista/xp)
http://www.allegrosoft.com/ams.html

Twonky Server (Mac OSX)
http://www.twonky.com

Playback (Mac OSX)
Apple AppStore

Media:connect (iOS)
http://itunes.apple.com/us/app/media-connect-for-dlna-upnp/id335036887?mt=8

MediaServer (Android)
http://www.prosyst.com/index.php/de/html/content/65/Mobile-Media-Server

Example Media Control Points (DMC):
Windows Media Player (win7/vista/xp)
http://windows.microsoft.com/en-US/windows/products/windows-media-player

Foobar2000 + UPnP plugin (win7/vista/xp)
http://www.foobar2000.org
http://www.foobar2000.org/components/view/foo_upnp

Media:connect (iOS)
http://itunes.apple.com/us/app/media-connect-for-dlna-upnp/id335036887?mt=8

PlugPlayer (iOS/Android)
http://www.plugplayer.com/

Twonky Mobile (iOS/Android)
http://www.twonky.com

User scenarios

In this section of the Wireless setup guide some common user scenarios are presented. These scenarios should be seen as examples of how you can benefit from media streaming and represents only a small selection of the streaming possibilities. In these scenarios many third party applications are exemplified*. These applications are continuously updated and new ones are created and released, correctness of this guide can therefor not at all times be guaranteed. What will be the best software or device to use in your application is of course always up to you to decide. Many of them are available for download free of charge and a good idea is to download and try several of them to see if they fits your needs.

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I want to stream songs to my Opalum system from Windows Media Player, how can I do that?

To stream music from Windows Media Player is very simple. For the best experience make sure you have an updated version of Windows Media Player.

For Media Player instructions please consult these pages from Microsoft:
http://windows.microsoft.com/en-US/windows7/Getting-started-with-media-streaming
http://windows.microsoft.com/en-US/windows7/using-the-play-to-feature-to-stream-media

I want to set up a media server in my home to store all my media files, I want to play my music on my Opalum system and I want to use my smartphone to control everything from the sofa. What do I need?

First your will need some kind of media server. This can be a standard PC or Mac running a DLNA/UPnP server software or a DLNA compatible NAS or a network router with built in DLNA/UPnP server. There are many software servers out there to be used for example TwonkySever, Allegro Media Server, Jamcast and there is even one built natively into Windows 7.
To browse the media you will need a smartphone/pad with a DLNA/UPnP control point application. Many applications are available in for iOS and Android in AppStore and Android Market.
To connect it all together you will need a network router and of course also a wireless enabled Opalum Control Hub.

I want to play songs that are stored on my Android phone/pad to my Opalum system.

Some Android smartphones and pads has DLNA supported natively. If this is not the case with your device your can use a DLNA control point app to stream your music to the Opalum system. There are many apps that can be used for this, for example PlugPlayer and Twonky Mobile. These apps can be found in Android Market.

I want to play songs that are stored on my iPhone, iPod touch or iPad to my Opalum system.

(In this scenario you will do fine with the Opalum Control Hub <u>without</u> wlan support)
The most intuitive way to do this is to use an Apple Airport Express router. This router has its own optical audio output that you can connect by a cable to the Opalum Control Hub. This router can be bridged wired or wirelessly to your existing home network if you dont want to replace your current router. The audio output of

this router is natively supported in iPod on iPod touch, iPhone and iPad.

(In this scenario you will need the Opalum Control Hub <u>with</u> wlan support)
To stream song stored on your iPhone, iPod touch or iPad directly to the Opalum Control Hub you will need a DLNA control point app that supports this. The problem here is that Apple is blocking access to the songs stored on your device. But there are apps that circumvents these restrictions. One such app is Media:Connect by Persona Software. This app can be found in AppStore.

I want to stream audio from my MAC to the Opalum system, how can I do that?

(In this scenario you will do fine with the Opalum Control Hub <u>without</u> wlan support)
The most intuitive way to do this is to use an Apple Airport Express router. This router has its own optical audio output that you can connect by a cable to the Opalum Control Hub. This router can be bridged wired or wirelessly to your existing home network if you dont want to replace your current router. The audio output of this router is natively supported in iTunes. You can also stream <u>all</u> audio on your Mac, including Spotify and other audio applications, to the Airport Express using the program Airfoil by Rough Amoeba http://www.rogueamoeba.com/airfoil.

I want to stream the music from Spotify (or any source) on my PC to the Opalum system...

(In this scenario you will need the Opalum Control Hub <u>with</u> wlan support)
Spotify does not (at this date) have built in support for DLNA streaming. But there are workarounds. One trick is to use a "virtual soundcard" to hijack all audio on your PC and send as one very long song through DLNA. The media server Jamcast implements this feature. Along with Jamcast you will also need a control point to get the Opalum system to start playing this very long song. For this you can use a control point app of your choice for your smartphone.

I have a Mac with all my music sorted in iTunes, now I want to use my iPhone to control the flow of music from the my Mac to my Opalum system.

(In this scenario you will do fine with the Opalum Control Hub <u>without</u> wlan support)
There are several ways of solving this problem. If you have an audio cable connecting your Mac to the Opalum Control Hub you may use the Apples app "Remote" to control the iTunes playback from your iPhone. This app is available in AppStore free of charge.

If you do not want to use a cable between your Mac and the Opalum system but still want to use iPhone as a remote there are two options. One is to buy an Apple Airport Express wireless router. This router can be wirelessly bridge connected to your existing home network and it has its own analog and optical audio output to connect by cable to the Opalum system. The router can be hidden away along with your Opalum Control Hub.

(In this scenario you will need the Opalum Control Hub <u>with</u> wlan support)
If you have the wlan enabled version of the Opalum Control Hub you can use DLNA to stream the audio. To do this you will need to install a DLNA media server on your Mac and a DLNA control point app on your iPhone. There are media servers that automatically shares your iTunes library, one such is "Media Server" from Allegro and "Playback" from Yazsoft.