

Opalum[®]
of Scandinavia

Owner's guide

How to use your new Opalum sound system



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1. The Control Hub

1. Status indicator

Indicates the current status using different colors and flash modes. For details see section "The status indicators", page 23.

2. Power socket

Connection for included 24V DC power supply. Make sure connector is firmly attached.

3. Speaker output, Actiline® Digital Link

Do ONLY connect Actiline® enabled speakers to this output. (E.g. Opalum FLOW, BREEZE or STREAM series).

4. Master volume adjustment

The master volume can be adjusted using this rocker switch. When in standby, this switch can also be used to turn on the system.

5. RS232/IR

Connection for controlling the system through either RS232 or external IR commands.

6. Analog subwoofer output

Optionally connect this line level output to the analog input of an active subwoofer. At normal listening levels adding a subwoofer is not needed thanks to the Actisonic® technology. This output will sense if a subwoofer is attached and automatically match the sub-woofer and Opalum speakers using a high precision digital crossover at 80 Hz and 24 dB/octave. If the subwoofer has its own adjustable low-pass filter it should be set to the highest possible frequency in order not to interfere with the digital crossover of the Opalum Control Hub.

7. Analog stereo line input

Connection for analog line level equipment (e.g. MP3-player, notebook, phones, etc.). This can also be used to connect the output of your surround receiver.

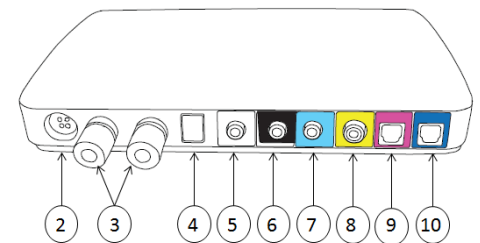
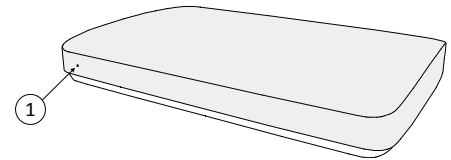
8. Digital input, coaxial*

Connection for digital S/PDIF equipment (e.g. computer, CD, DVD™, Blu-ray™, flat screen TV, etc) using coaxial cabling. (These are trademarks of their respective owners).

9. Digital inputs, optical*

10. Digital inputs, optical*

Connection for digital S/PDIF equipment (e.g. computer, CD, DVD™, Blu-ray™, flat screen TV, etc) using optical fibre (TOSLINK™). (These are trademarks of their respective owners).



* NOTE:

Use uncompressed stereo PCM audio data only. Data rates of 44.1, 48 and 96 kHz in 24 bit resolution are supported. 192 kHz in 24 bit resolution is also supported using digital coax input. If connecting a multi-channel source (such as a DVD player, computer, etc.) setup this source to output uncompressed two channel (stereo) PCM data.

2. The status indicator

The LED on the front of the control hub indicates the current system status. Its color indicates the current input source and its intensity the system status. The indicator color matches the color marking of the corresponding input on the back of the Control Hub. Since all inputs are normally mixed, the most common color will be white indicating that the product is in Mixer mode.

2.1 Modes of the status indicators

To indicate special events the indicators uses different light modes.

- Dark - stand by or OFF
- Steady - normal operation
- Fade up from steady - increasing volume
- Fade down from steady - decreasing volume
- Yellow light flashing - IR learning mode
- Red light flashing - Short circuit on speaker output terminal, see section "*Short circuit protection*".

3. Short circuit protection

To protect from shorted or faulty wired speaker cables the system is equipped with Actiline® short circuit protection. If a problem is detected, the power to the speakers is automatically turned off and the status indicator starts flashing red. To recover from short circuit mode you may go through the following steps:

- 1 Turn the system off or remove mains power
- 2 Make sure there are no shorted wires at the Control Hub terminals or any of the speaker terminals and that all connected speakers are Actiline® compatible.
- 3 Turn the system on or apply mains power

If short circuit is still detected disconnect all speakers from the Control Hub and re-connect them one by one, following steps 1-3 above for each added speaker.

4. Connecting the system

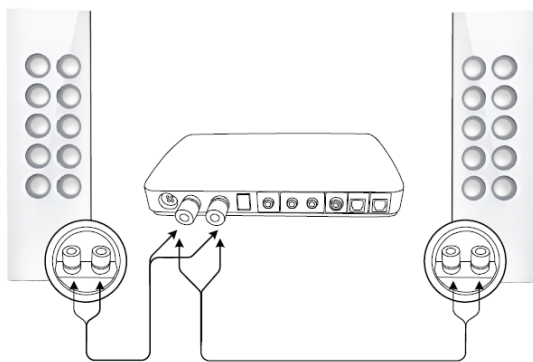
The speakers of the Opalum sound system can be connected to the Control Hub in two different ways thanks to the Actiline® technology. In both cases use the included speaker cables or other two conductors stranded 18 gauge (0.75 mm²) or higher/thicker cable.

- Parallel connected or
- Daisy chain connected

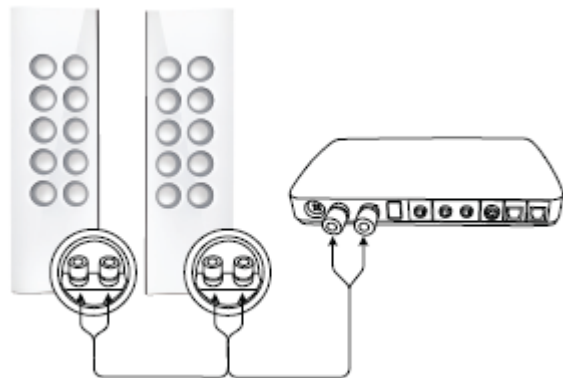
Both connection schemes are shown below and are equal in performance.

For maximum ease of use the polarity of the speaker cables and terminals does not matter as the data is transferred to the speakers digitally – another benefit of the Actiline® technology.

For instructions on how to properly use the speaker terminals together with the included cables see section "Using the speaker terminals".



Parallel connection of speakers



Daisy chain connected speakers

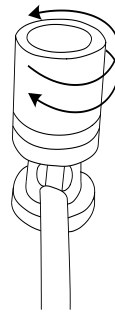
5. Using the speaker terminals

In the Opalum product range there are two types of speaker terminals present:

- Push type terminals
- Screw type terminals



Push terminal



Screw terminal

5.1 Installing speaker cable in push type terminals

1. Push terminal firmly until cable hole is fully open.
2. Insert metal part of speaker cable into the cable hole. Make sure that there is no cable insulation inside the hole.
3. Release pressure from speaker terminal. Make sure cable is securely fastened.

5.2 Installing speaker cable in screw type terminals

1. Turn terminal nut counter clockwise until cable hole opens as shown in figure 5.
2. Insert metal part of speaker cable into the cable hole. Make sure that there is no plastic cable insulation inside the hole.
3. Turn terminal nut clockwise firmly until cable is securely fastened.

6. Mounting the speakers

6.1 Wall mounting the speakers

Both the Opalum FLOW, BREEZE and STREAM series speakers are wall-mountable. (STREAM series speakers can also be standing tabletop). For optimum sound performance we recommend to mount the speaker at such height that the middle of the speaker is at about the height of the listener's ears. Therefore, if the listeners are sitting down most of the time when the speakers are used, the speakers should not be mounted too high.

NOTE: Wall mounting hardware must be well able to handle the weight of the speaker. Use appropriate mounting hardware depending on wall material, e.g. use screws with plastic plugs for concrete walls and special drywall plugs or equivalent for gypsum walls. It is important to adjust both wall mounting screws for a tight fit against the wall. Inappropriate mounting may lead to noise produced by vibration or even damage to the products.

For speaker weights please go to www.opalum.com

FLOW speakers with acrylic front only:

NOTE: Do not remove the front protection film until speaker is mounted. This will help the acrylic glass to stay free from scratches and fingerprints.

STREAM series only:

NOTE: To wall-mount the STREAM series speakers the feet must first be removed. This is done by unscrewing the two screws at the bottom of the speaker. Before wall-mounting the speakers please attach the included rubber bumpers to the back of the speaker with one bumper in each corner.

6.2 Speakers standing tabletop (STREAM series only)

To use the STREAM series speakers standing tabletop the included feet must be mounted (as when the speakers were delivered). Please make sure that the feet are tightly secured to the bottom of the speakers if the feet have previously been removed.

7. Using the Opalum sound system

The Opalum sound system can be operated in different manners or modes:

Automatic (default):

In a normal setup there is no use for a remote control, as the unit wakes up automatically whenever any connected source starts playing and goes into standby when no source is playing. In this configuration the selected source is MIXER, which in fact mixes all inputs together. The LED will be white. The volume control is done by the source, like for instance your phone.

Manual:

If manual source select or volume control is required; the system can learn IR commands, so that for instance your TV remote control can be used to select source or adjust volume up and down. In fact any IR remote can be learned, and thereby give you full control of the system.

Integration with custom installation systems:

For those using custom installation, the system accept commands from both RS232 and electrical IR. Please see the in depth descriptions in section 8.

7.1 Automatic standby

In all modes, the Opalum sound system will go to standby automatically. This happens if the selected source has been silent for more than 20 minutes. In standby the Opalum sound system consumes less than 0,5 watt.

7.2 Volume offset adjustment

In automatic mode you might want to adjust the volume offset. For instance if you find the lowest volume your source can play is still too loud you might want to adjust the offset down. This is done by pressing the rocker switch on the back of the Control Hub. The adjustment is stored automatically and affects all sources.

7.3 Bluetooth

To connect your mobile device or PC to the Opalum sound system using Bluetooth you first need to pair the devices. Please see the user guide of your device for how to pair. The Opalum sound system is identified by the name "Opalum xxxxxx", where xxxxxx is a unique number. During the pairing process you will be requested to enter a PIN code. This PIN code is 1397. Pairing should be completed and you should now be able to stream from your device to the Opalum sound system. Volume is also controlled by your device, 7.2 still applies though.

7.4 IR learning

The Control Hub can learn to understand IR commands from most remote controls. You decide which buttons to use for which function and simply use the IR learning function to teach the Control Hub. These are the functions that you can assign buttons to:

1. Volume up
2. Volume down
3. Source next
4. Power on/off

The buttons are learned in sequence starting from 1 in above list. You don't need to learn buttons for all functions as the learning function can be deactivated at any time. However, if you for instance want to learn the button for "Source next", you will also need to learn buttons for "Volume up" and "Volume down", but not "Power on/off".

The IR learning function is activated this way:

1. Make sure the unit is ON (if not push the master volume switch)
2. Press the IR Learn/Reset button in the bottom of the control hub for 2 seconds
3. When IR learning is activated the status LED starts flashing yellow

Learn a command:

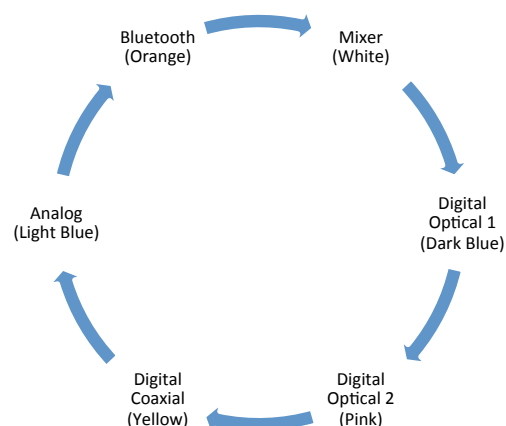
4. Point your remote toward the IR eye in the front left side of the Control Hub (just to the right of the LED). Press the button you want to learn once and observe the LED:
 - a. Steady green -> OK.
 - b. Steady red -> Command was NOT learned.
5. Wait until the LED flashes yellow again and then repeat for next button to be learned or retry the learning of the button which just failed. In either case repeat from step 4.

Done learning:

6. If buttons for all 4 functions was learned the Control Hub will automatically reboot and return to normal operation mode. You can terminate the learning function by pressing the IR Learn/Reset button for 2 seconds again.

7.3 Source select (learned IR remote only)

Using the learned IR buttons; source can be selected by stepping through the sources one by one. The sequence of sources is:



7.5 Power on/off (learned IR remote only)

Using the learned IR buttons; the Opalum sound system can be switched ON and OFF. If the system is manually switched OFF, the automatic wakeup is disabled.

7.6 Volume control (learned IR remote only)

Using the learned IR buttons; the volume can be adjusted. When the system goes OFF or into

standby, the latest volume setting is stored and will be set when the system is switched ON again.

7.7 Factory reset

The factory reset function is to bring the unit back to the initial settings set by the factory. These settings are MIXER mode with volume set to 60%. All learned IR commands are erased.

The reset function is activated by:

1. Make sure the unit is ON
2. Press the IR Learn/Reset button for more than 10 seconds
3. Reset has been completed when the reboots (LED turns OFF and the ON)

8. The Opalum sound system for integrators

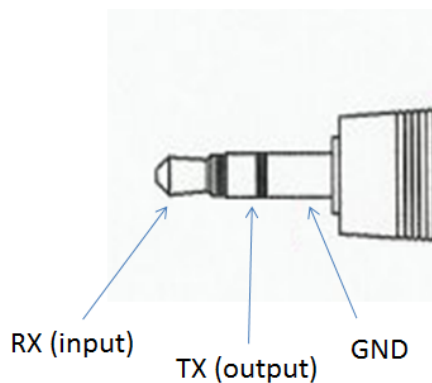
8.1 RS232 control

The RS232 control enables system integrators to control the product by sending commands.

8.1.1 RS232 pin connection

The RS232 is located on the rear. See drawing in the very beginning of this guide, it's the input/output marked IR/RS232 shown as socket 5 in the picture.

It uses a standard 3.5mm stereo jack, with the connector as shown in the picture below. Please note that RX (input) means that this is where the control hub receives data, so you will have to connect the control system TX to this.



Connect this way:

RX (input) to control system TX

TX (input) to control system RX

GND to control system GND

Make sure to set the IR/RS232 on the bottom of the control hub is in the right position before using the RS232:

Position of slide switch	Socket function
Switch away from the speaker terminals	RS232 mode
Switch toward the speaker terminals	Electrical IR mode

8.1.2 RS232 port configuration

The RS232 port parameters are as follows:

- 115.200 baud
- 8 bit
- No parity
- 1 stop bit
- No flow control

8.1.2 RS232 port protocol

The commands send to the control hub are sent in plain ASCII and terminated by sending a carriage return <CR> (decimal value 13). All commands are acknowledged with OK on success and ER on error.

8.1.3 RS232 commands table

Function	Command	Description
Power ON	pwr1	Turns on the hub
Power OFF	pwro	Turns off the hub
Power Toggle	pwrT	Toggles the power of the off. On if off and off if on
Volume Up	vol+	Increases the hubs output volume with 1
Volume Down	vol-	Decreases the hubs output volume with 1
Volume Set	vol[XX]	Changes the volume to a specific number. It accepts values from 0-63, in hexadecimal numbers. So there are 100 volume steps. Examples: vol63, sets the volume to full vol00, set the volume to zero vol0f, sets the volume to a low level vol5f, sets the volume to a high level
Source Next	src+	Changes input source, counting up
Source Previous	src-	Changes input source, counting down
Source Select	src[X]	Changes the input source to a specific source. X is the source selected. Sources are: 0 toslink1 (pink LED) 1 toslink2 (blue LED) 2 coaxial (yellow LED) 3 Bluetooth (green LED) 4 analog (light blue LED) 5 mixer (white LED) Example: src4, changes to analog input
Standby Timeout Enable	sta1	Enables standby timeout, so the hub will turn off if it receives no signal for 20 minutes.
Standby Timeout Disable	stao	Disables standby timeout, hub will never go automatically to standby