

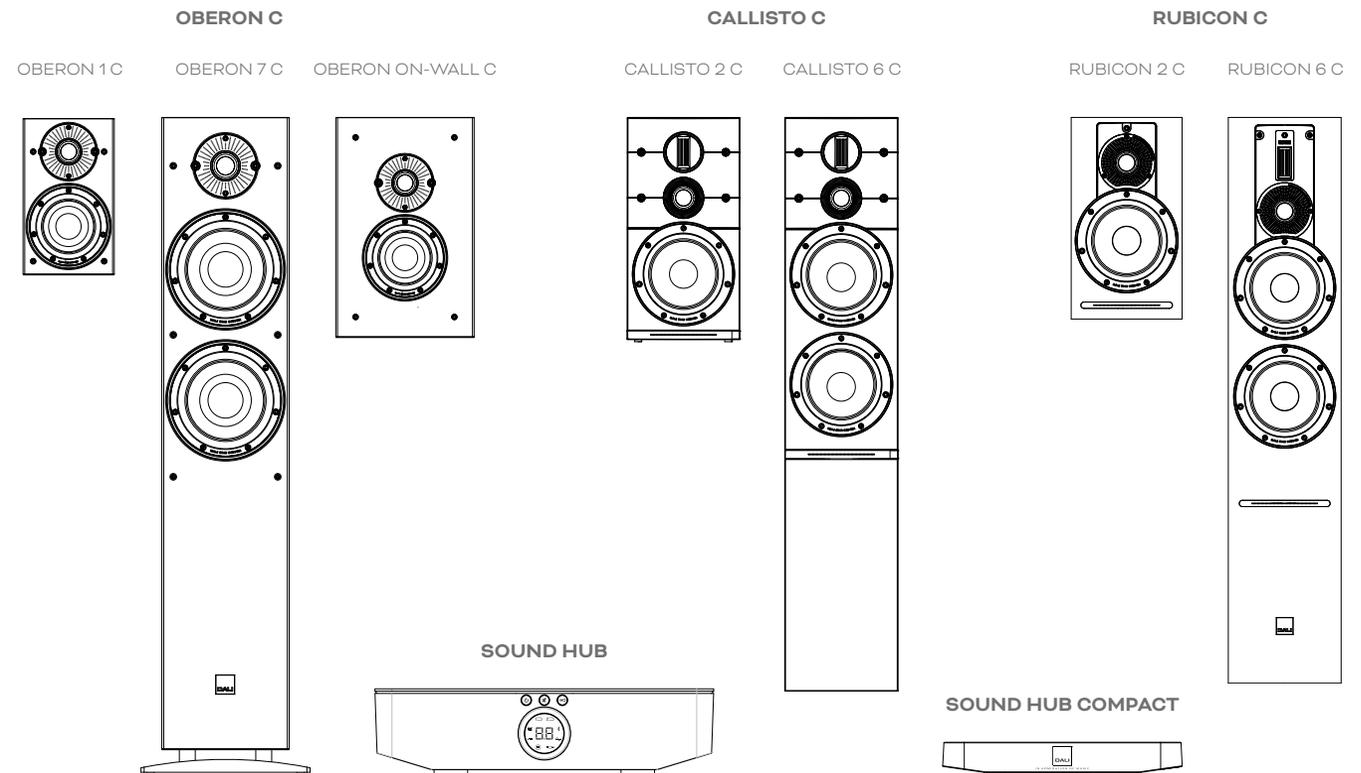
DALI In-shop guide for DALI active wireless speakers

SOUND HUB/ SOUND HUB COMPACT/ OBERON C/ CALLISTO C/ RUBICON C

The DALI wireless speaker systems are designed to work seamlessly out of the box and for the majority of cases the default factory settings will ensure the products do just that and provide a “plug and play” experience.

However, in some environments busy with technology, such as shops, it is sometimes possible for the DALI SOUND HUB and the DALI SOUND HUB COMPACT temporarily to lose the connection with the speakers when the wireless channel in use becomes congested. You may notice your music repeatedly drops-out for a moment as the wireless connection automatically switches to an alternative channel.

This guide is designed to help you set up the DALI wireless speakers systems to perform without any drop-outs in your shop.



IN ADMIRATION OF MUSIC



What is causing the drop outs?

Wireless “Traffic jam”:

The DALI wireless speakers/ Sound Hub systems are based on a wireless audio technology operating in / close to the frequencies used by common Wi-Fi networks.

The DALI SOUND HUB(SH) operates on 3 channels in the 5.8GHz band, whereas the DALI SOUND HUB COMPACT (SHC) can operate on 6 wireless channels in two separate frequency bands 5.2GHz and 5.8GHz (3 channels in each band).

However, typically Wi-Fi is occupying the 3 channels in the 5.2GHz band, effectively leaving the SHC to operate with its three channels in the 5.8GHz band as the SH, thus to prevent the SHC to try out the 5.2GHz channels the band switch on the SHC should be set to 5.8GHz, where SHC will auto-select the best of the 3 available channels in the 5.8 GHz band.

The 5.8 GHz band is typically not used by Wi-Fi, and with no other traffic in the 5.8GHz band it should be possible simultaneously to operate a total of 3 DALI wireless systems in one room, (typically within a range of 15 meters).

In practice however, things are not so simple and in reality there are also interference in the 5.8GHz band, both from other products using the same wireless audio technology but also from other wireless network devices and Mesh networks (Mesh networks are troublesome for many reasons, and should always be avoided if possible according to most IT departments).

The fact that products using the same wireless audio technology as DALI, typically transmit and thus occupy a channel as soon as they are ON, even in standby mode and even if not connected wirelessly, e.g. to a subwoofer, means that we will quickly have a wireless “traffic jam”.

Once the wireless band starts getting congested the systems starts fighting for space by jumping channels and every time a system jumps, audio will drop out for ½-1 second, not very audible for subwoofers but very audible on full range audio systems like the DALI wireless speakers.

When the wireless band is congested, even minor physical obstructions such as people moving around nearby, can cause one system to jump to a new channel.



How to setup the system to avoid dropouts:

In order to make the DALI wireless speakers perform seamless in your shop we must give them the best operating conditions to do so. Please follow these simple steps:

Switch OFF unused wireless equipment.

The first potential solution to this problem is to ensure that any unused wireless equipment nearby is switched OFF.

Even when in standby or sleep mode, some wireless equipment will still broadcast a signal and consume bandwidth, so if it is unused, it is best fully switched OFF.

Wi-Fi setup optimization:

Optimize your Wi-Fi setup to avoid unnecessary “pollution”

- Mesh networks should be avoided, and explicitly disabled in the setup menu
- Use no more routers than absolutely necessary
- Better performance is obtainable if Wi-Fi is restricted (95% Wi-Fi data throughput is just perfect for most applications, Audio however requires 100% throughput)
- Saving bandwidth for Wireless audio can be done by:
 - Setting Wi-Fi to a fixed channel, preferably above channel 48
 - Setting Wi-Fi channel bandwidth to 20 MHz (not 40 nor 80 MHz)

DALI Wireless system setup optimization:

- Turn OFF as many wireless DALI products as possible.
- Place the products as far away from each other as possible:
 - Place systems more than 10 (and preferably 15) meters apart, or better yet in separate rooms
 - If this is not possible 2 systems can be closer to each other, but then at least 1 meter apart
 - Hubs and speakers at least 1 meter apart
 - Hubs and speakers no more than 5 meters apart (in shops)
- Ensure that all “turned ON” products are connected to their audio accessories (such as subwoofer or speakers)
- Set the SHC Band Selection switch to “5.8 GHz”
- Use manual channel selection if needed, to ensure that the wireless DALI products are operating on different channels.

NOTE

Manual Channel selection is currently only possible on the SOUND HUB COMPACT and requires FW ver: 3.3 or later.

SOUND HUB COMPACT Diagnostic mode and manual channel selection:

- With the music still playing, press and hold the SOUND HUB COMPACT **Link & Connect button for 10 seconds** then release it. This will launch the SOUND HUB COMPACT wireless diagnostic mode, where it is possible to read the wireless channel and manually select a channel.
- The SOUND HUB COMPACT top panel LED indicators 8 and 10 will now illuminate as will one of indicators 1 to 6. Indicators 8 + 10 indicate the wireless diagnostics mode whereas Indicators 1 to 6 indicates which of the six possible wireless channels is in use. If the Indicator 1 to 6 changes every few seconds, this reveals that the wireless environment is congested and the SOUND HUB COMPACT is jumping channels.
- A fixed wireless channel can now be selected by using the SOUND HUB COMPACT remote control **Volume Up** and **Volume Down** buttons. The selected channel indicator, 1 to 6 ,will flash for a short time then switch to continuous illumination. Indicator 9 will also illuminate to indicate “fixed channel mode”
- Exit the wireless diagnostic mode again by pressing the SOUND HUB COMPACT Link & Connect button.

For more information on the SOUND HUB COMPACT diagnostic mode please refer to chapter 7 in the user manual.
www.dali-speakers/products/oberon-c/sound-hub-compact/

SOUND HUB COMPACT Diagnostic mode and manual channel selection:

Channel interference:

- Even if the SHC remains on one fixed channel (such as if it is manually selected), the channel may still be used by other radio equipment
- This is especially true for channels in the 5.2 GHz band, which is also heavily used by 5 GHz Wi-Fi routers and even audio products such as Denon S716H
- If SHC uses a channel that is also used by Wi-Fi, the result will be intermittent crackling noise, if this is experienced please try to select another more suitable channel.

NOTE:

Other products we know occupying the same channels as DALI include:

- Denon S516H soundbar
 - Bluesound Pulse soundbar
 - HEOS Homecinema soundbar
 - Bose soundbar 500 and 700, and Lifestyle 650
 - New Samsung HW-Q800T soundbar
 - Dynaudio XEO
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NOTE:

Note on Bluesound Pulsebar:

- The Wireless audio is enabled even if subwoofer is not enabled in GUI
 - The internal amplifier (and wireless audio module) will be disabled in the following cases:
 - Pressing the STANDBY button for 5 seconds
 - Muting the product (volume step 0) for more than 15 minutes (probably only if not connected by HDMI CEC)
 - Only if “Amplifier Standby” is enabled in the GUI
 - There is no visual indication showing if the wireless audio is enabled – the front LED only shows
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