Home Automation Guides:

MULTI - ROOM AUDIO

navas residential

CONTENT:

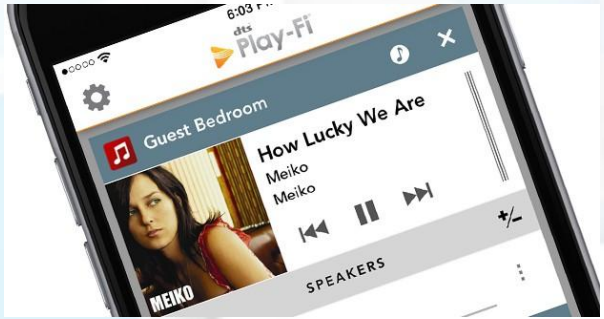
- What is Multi-Room Audio?
- Wired or Wireless?
- High Resolution Audio
- DIY or Pro?

navas residential

WHAT IS MULTI-ROOM AUDIO?

Multi-room audio is a system that can play different music sources (online music streaming services, like Spotify, Tidal, Deezer or Amazon music, as well as local music archives stored on a NAS or your smartphone/tablet/PC) in different rooms in the property, called “audio zones”.

The selection of music and the play, stop, skip and volume control of the same is usually done via a smartphone app or with a remote control on TV displays (OSD) and/or in-wall, desktop touchscreens in the case of a full home automation installation - latest systems even incorporate voice control of your favourite music sources/playlists.



Smartphone app for music control

Different audio zones can be grouped together to play the same music content throughout the property.

WHAT IS MULTI-ROOM AUDIO? continued

Typical multi-room audio system will have different types of speakers/amplifiers allocated in different audio zones - please refer to picture 1.0 on the next page.

High-performance ceiling speaker, like KEF CI200RR, or Triad InCeiling Silver series

Stereo ceiling speaker, where space is a premium: Triad InCeiling Silver DT or KEF CI160CRDS

In-Wall speakers, like KEF Ci316RL or Sonance R1

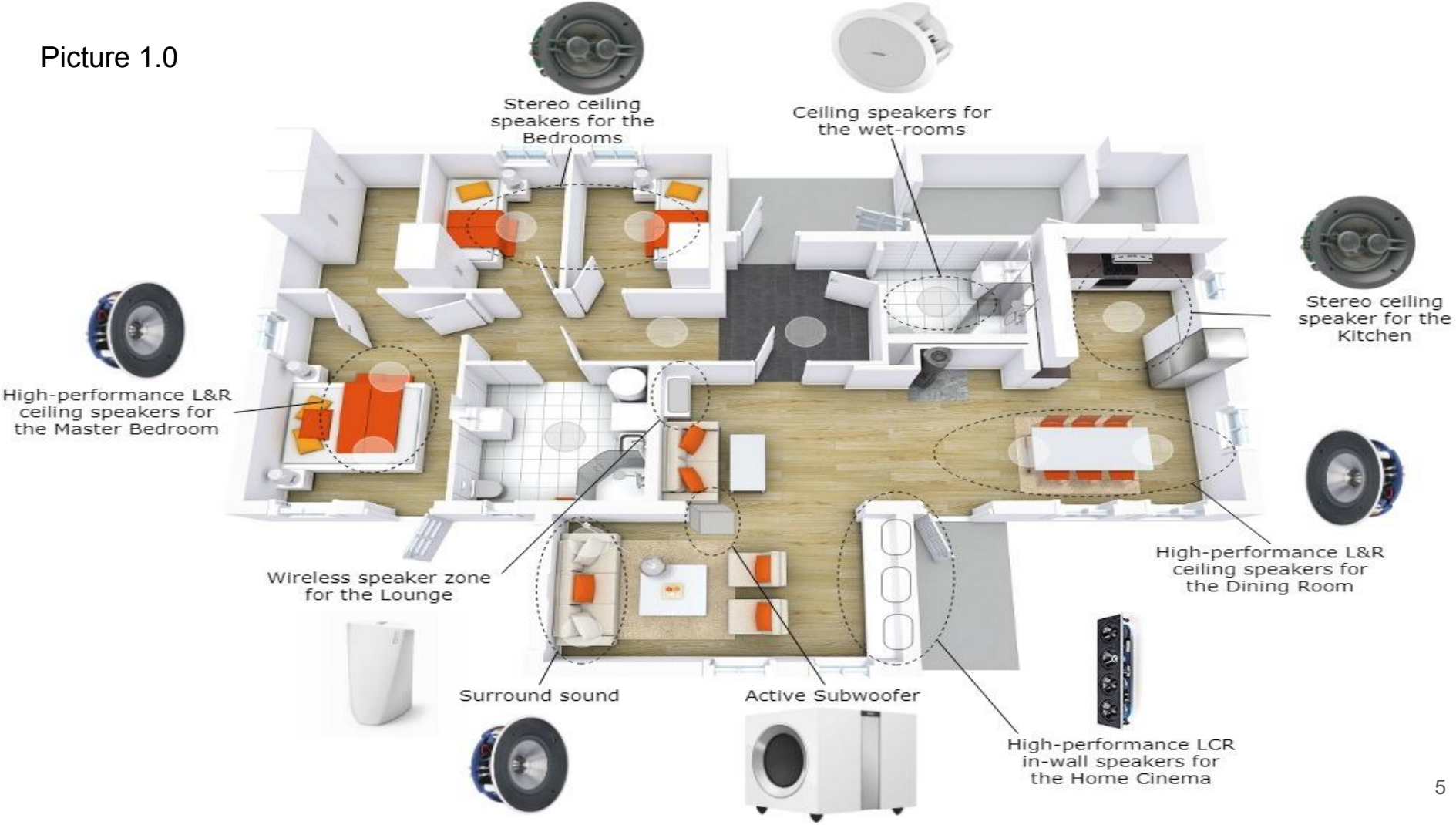
Specialized wet-room speakers, like Bose 791 series

Wi-Fi active speakers, which can turn any space into an audio zone, like Sonos, Bose, Denon, B&O, etc.

Active subwoofers, allowing deep and defined low frequency playback, like KEF R400 or Triad OmniSub 12

navas residential

Picture 1.0


Stereo ceiling speakers for the Bedrooms
Ceiling speakers for the wet-rooms
Stereo ceiling speaker for the Kitchen
High-performance L&R ceiling speakers for the Master Bedroom
Wireless speaker zone for the Lounge
High-performance L&R ceiling speakers for the Dining Room
Surround sound
Active Subwoofer
High-performance LCR in-wall speakers for the Home Cinema

WHAT IS MULTI-ROOM AUDIO? continued

Loudspeakers in different rooms/audio zones can be:

- **Bookshelf** - Best for surround sound set-up in smaller rooms
- **Floorstanding** - These speakers can achieve the best quality audio reproduction, but can sometimes “clash” with the furniture design
- *“***Invisible***”* - These speakers can be plastered over, so they become completely concealed: please refer to picture 2.0
- **In-Ceiling** - Best for high-quality audio when floor space in limited
- **In-Wall** - These speakers have the same high-end drivers like the floorstanders, but do not use floor space: please refer to picture 3.0
- **Motorized** - These ceiling speakers can automatically transition into the best listening position: please refer to picture 4.0
- **Wireless** - These speakers require local mains supply and receive audio signals over your Wi-Fi network, so they can transform any space into an audio zone instantly, without additional cabling

Picture 2.0

Listening to music while in the bath has to be one of life's little luxuries. Here the “invisible” ceiling speaker (highlighted in blue, is designed to be plastered over - ideal for when you don't want your tech to show.

When you are listening to the background music, these speakers lie flush with the ceiling, but when you want to watch the movies, they automatically position themselves downwards, enabling direct sound radiation towards the listener.

Picture 4.0

Picture 3.0

High-performance in-Wall full range speakers, for the Left, Right and Centre channels, in a home cinema audio setup. These can be supplemented with multiple surround sound speakers and an active subwoofer, for the real cinema-style experience

WIRED OR WIRELESS?

Table 1.0 - Multi-room audio installations

Features / Type	Best for	Home automation integration	Quality	Installation cost
Wired systems	New builds or major refurbishment work, where new cabling can be installed	Full integration, with home automation platforms, like Control4	High - no connection delay, no latency or drop outs; High Resolution Audio possible;	High - includes professional design and installation fees and new cabling cost
Wireless systems	Retrofits	Limited to No integration	Medium/High, but unpredictable	Low - could be done DIY
Hybrid systems	Mixed setup: Home cinema room can be hard-wired, while the bedrooms could be Wi-Fi audio zones	Possible, depending on components	Medium/High, depending on the ratio of wired/wireless components	Medium - could be done by expert DIY

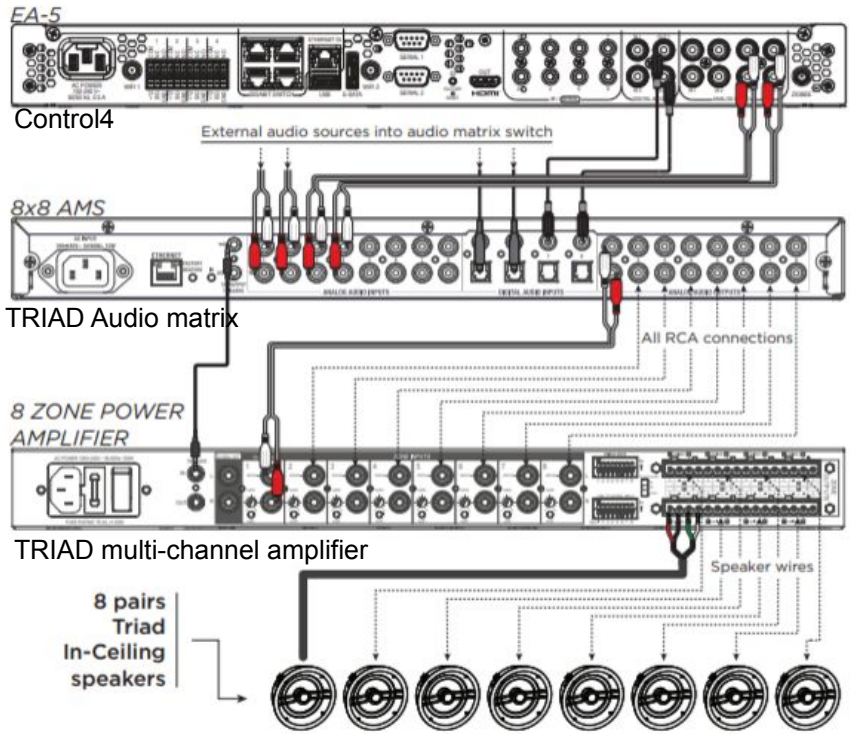
WIRED OR WIRELESS? - continued

- Typical **wireless** system is based on multiple active speakers connected over your home WiFi network - please refer to picture 5.0. These speakers can be paired for L&R stereo setup, or even as surround sound speakers when used with a wireless soundbar.
- Some manufacturers offer WiFi amplifiers, so you can connect your choice of loudspeakers and still use smartphone app for control.
- In **wired** systems, a music server is connected to a matrix audio switch/preamplifier which, in turn, is connected to a multichannel power amplifier - please refer to picture 6.0. This hardware is housed in an equipment rack, located in a well ventilated location, to facilitate heat dissipation.
- Wired systems can accommodate surround sound installations and the typical power per channel is either 50W/8ohm or 100W/8ohm, while powerful active subwoofers can reach 400W - 700W.
- **Hybrid** multi-room audio systems typically use wired connections for the few connected rooms, like the Kitchen/Dining Room/Bedroom, while audio is distributed to the Home Cinema via WiFi - please refer to picture 7.0

Picture 5.0 - Wireless multi-room audio systems

Speaker types \ Brands	SONOS	HEOS BY DENON	BANG & OLUFSEN	YAMAHA MusicCast YOUR HOME OF SOUND
Small wireless speaker	 PLAY1	 HEOS 1	 BEOPLAY 5	 MUSIC CAST 20
Medium wireless speaker	 PLAY5	 HEOS 5	 BEOSOUND 2	 MUSIC CAST 50
Wireless soundbar	 PLAYBAR	 HEOS BAR	 BEOSOUND 35	 BAR 400
Wireless subwoofer	 SUB	 HS2	 BEOLAB 19	 SUB100

Picture 6.0 - Wired multi-room audio systems

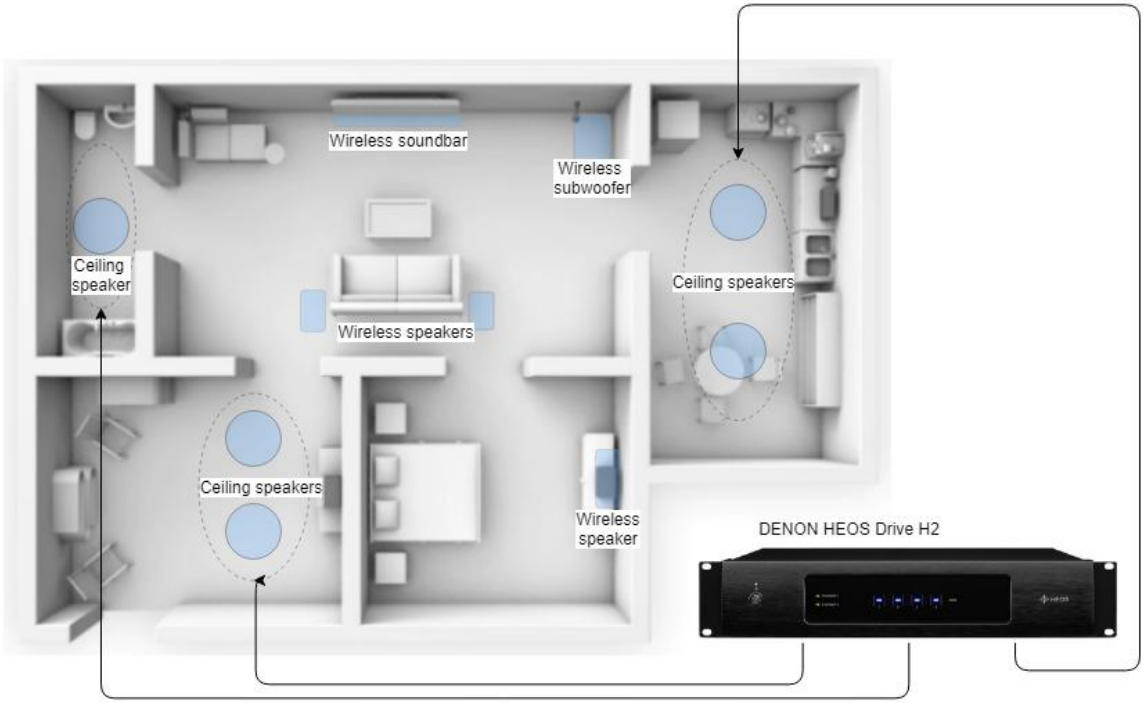


This system will give you four simultaneous streams of Internet music streaming services, like Spotify, Tidal, Qobuz, Apple music, Deezer, etc. together with any additional audio sources you might have, like Hi-Res audio player, Apple TV, network audio player, etc.

You could play any of these audio sources in any of the eight stereo zones, simultaneously or independently.

Ceiling speakers can be replaced with bookshelf, floorstanding or even invisible speakers.

Picture 7.0 - Hybrid multi-room audio systems



This system will give you four simultaneous streams of Internet music streaming services, like Spotify, Tidal, Qobuz, Apple music, Deezer, etc. driving wired speakers in up to four audio zones.

In addition, you can have multiple rooms equipped with wireless speakers and connect them to the same audio sources as the wired ones.

HIGH - RESOLUTION AUDIO

Definition for the high-resolution audio is: "*Lossless audio that is capable of reproducing the full range of sound from recordings that have been mastered from better than CD quality music sources*".
The CD quality audio is referred to as having a sampling frequency of 44.1kHz and a bit depth of 16 bits.

Glossary:

Lossless - Compression algorithm which preserves the original music data, making audio files smaller;
Lossy - Compression algorithm which removes parts of the original music data, making smallest audio files, but sacrificing on audio quality;
MP3 - Lossy compression with bitrates of 96kbps, 128kps, 192kpbs, 256kbps and 320kbps (best quality);
FLAC - Lossless compression, with 24bit/96kHz and 24bit/192kHz audio files
Ogg Vorbis - Lossy compression with bitrates up to 320kbps

HIGH - RESOLUTION AUDIO - continued

- Table 2.0 below compares music streaming services, with few offering Hi-Res audio streams
- A Hi-Res audio capable network player, like Denon DNP-800NE, could be included in the multi-room system design, if the highest quality audio distribution is required.

Table 2.0 - Music streaming services

Streaming Service / Features	Google Play	Amazon Prime Music	Tidal	Qobuz	Deezer	Spotify	Apple Music iTunes	YouTube
Compression	Lossy	Lossy	Lossless	Lossless	Lossless	Lossy	Lossy	Lossy
Type	MP3	MP3	FLAC	FLAC	FLAC	Ogg Vorbis	AAC	AAC
Bitrate (Max)	320kbps	256kbps	1141kbps	9216kbps	1141kbps	320kbps	256kbps	320kbps
Hi-Res option	No	No	16bit 44.1kHz	24bit 192kHz	16bit 44.1kHz	No	No	No

DIY OR PRO?

Most of the wireless, or even hybrid multi-room audio systems can be installed by DIY enthusiasts, which can definitely reduce the cost of the installation, but if the idea of doing light building work and/or configuration of your systems is not appealing, or you want a cohesive, holistic approach in an area of technology that remains incredibly fractured on the consumer level, experts from navas can help.

The two categories which ultimately determine the overall cost of the multi-room audio installation project are the choice of hardware and the scope: any premium series of hi-fi speakers will probably attract the same level of pricing and knowing the limitations of the system will meet the customers` expectations - if full home automation system is required, with lighting/HVAC/4K video/security control included in the same smartphone app, then a meticulous planning of components is needed, to avoid any compatibility issues.

Should you need assistance with the design, procurement, installation or configuration of your system, please do contact us on info@navas.global - we will be happy to help!

WHY navas ?

“navas” is an innovation driven audio visual integrator which combines the latest trends in home automation, audio and video equipment and control with years of experience and passion for AV excellence. We are “Control4” accredited dealers/installers and we only supply AV equipment from the world's most renowned brands.

We do our best to ensure seamless fulfilment of your needs: from the initial concept, through design and expert project management, to training and after sales support, we make sure all your projects are completed to your full satisfaction. Founders of “navas” have 20+ years of experience in AV consultancy and project management, so you can be assured your projects are in good hands.

With “navas”, you can have the future... now.

For all inquiries, please contact info@navas.global,

or give us a call on +44203 969 9694

Thank you! Your team “navas

www.navasresidential.com

AQUAVISION LUTRON YAMAHA future automation LG ARCAM SAMSUNG Control4 SAVANT BANG & OLUFSEN BOSE Better sound through research

navas residential