

Selection Guide

APPLICATION NOTE

REV. 1.1 | 15-07-2022



Introduction

Considering the permanent nature of plaster-in loudspeakers, it's important that we choose the right model to ensure their performance meets expectations for the intended application for years to come.

Without an in-depth understanding of the many performance parameters published on loudspeaker datasheets, this can be a challenging task. Ideally the application should be discussed with AV integrators who can help with balancing the performance and cost options you may wish to consider.



During the conceptualisation of a project however - prior to the involvement of AV specialists - it can often be helpful to have a ballpark idea of the model and quantity of speakers that are likely to be required. This guide intends to consider some popular residential applications for invisible speakers, explaining the choices and performance levels that have been satisfied.

The Amina Range

Installation Technology

Amina offers two ranges of loudspeakers, aimed at different installation types: **Mobius** speakers are suitable in projects that will receive a full plaster skim (or other covering material), and the **Edge** range is designed for installation into drylining (which is taped and joined rather than skimmed with plaster), or as a post-plaster retrofit.

Performance Level

Each speaker range has three main price/performance levels: **Mobius and Edge 3i** speakers are Amina's most cost effective offering, **Mobius and Edge 5i** speakers offer the best balance between price and performance, and **Mobius and Edge 7i** speakers are Amina's loudest and highest performing offering.

The Application

Whether you are discussing your project with an AV integrator / project manager or embarking on the speaker selection process yourself, by far the most important factor is defining how the system will be used, as this is the critical parameter for speaker selection. Common examples are listed in the table below alongside suitable speaker models as a starting point, but do keep in mind there are always exceptions, especially where subwoofers or bass enhancers are used to augment the speaker system.

	Mobius3i	Mobius5i	Mobius7i	Edge3i	Edge5i	Edge7i
Background / Ambient	x	x	x	x	x	x
Louder Music	with sub	x	x	with sub	x	x
Party Music		with sub	with sub		with sub	x
TV reinforcement	with sub	x	x	with sub	x	x
Multichannel Surround	with sub	with sub	with sub	with sub	with sub	with sub

Amina Technologies Limited

Cirrus House, Glebe Road, Huntingdon, Cambridgeshire, PE29 7DL, England
+44 (0) 1480 354390 | info@aminasound.com | www.aminasound.com

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Often one of the most significant spaces in a home for media consumption, we see a very wide range of different applications used in living rooms. Examples of 'multichannel surround sound', 'background / ambient music' and 'dual-purpose louder music listening / TV reinforcement' are amongst the most common, each illustrated on the next page.

Modern multichannel surround systems are very flexible, accommodating nearly any number of loudspeakers. On the entry-level end of the scale is 5.1 surround, which can be achieved using a minimum of 4 loudspeakers and a single subwoofer. In dedicated cinema rooms this number can increase exponentially, sometimes to dozens of speakers and multiple subwoofers, but for a multi-purpose space like a living room / media room this would usually be overkill. The higher end of the scale for a room like this would usually be a 3D surround system like Dolby ATMOS, with 9 loudspeakers and a single subwoofer. For more information on Dolby ATMOS speaker configurations please see <http://www.dolby.com/us/en/technology/atmos-home-theater-installation-guidelines.pdf>. Dolby recommends that surround systems types would ideally use the same speaker model for all channels, but it is possible to use more powerful front/main channels with less powerful surround channels (within the same speaker range) to reduce the system cost.

Mobius speakers have been selected based on the assumption that the space was a new development / refurbishment which received a full plaster skim. In the case of a retrofit into an already-plastered surface or if the finished surface is drylining, Edge speakers can be considered as an alternative in all the options given below.

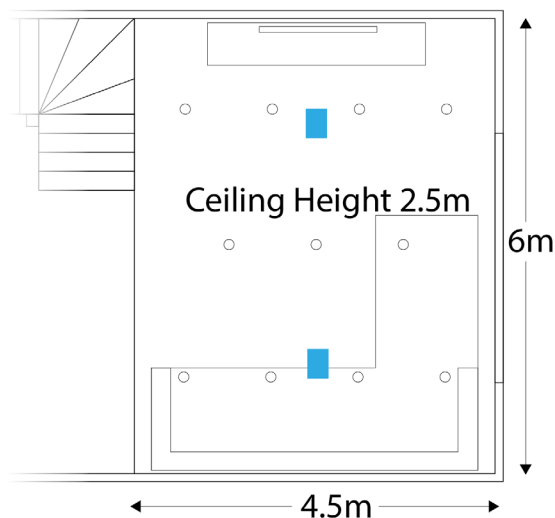
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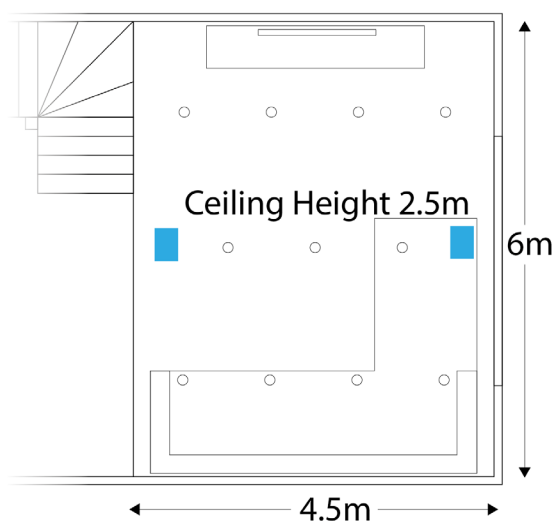
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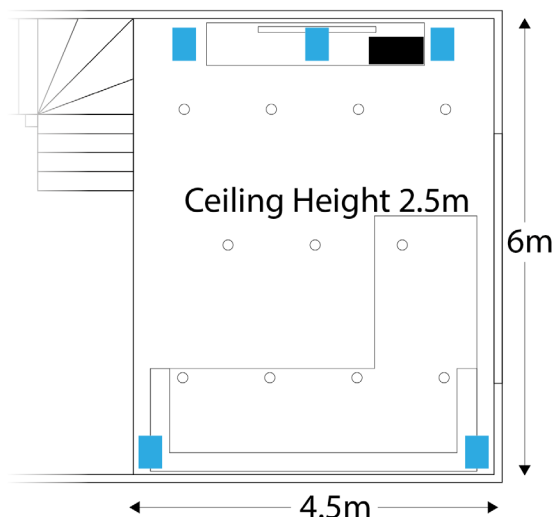
Ambience / Background Music

- Speakers positioned for even coverage in the space,
- Speaker model: Mobius3i



TV reinforcement & music listening

- Speakers positioned for correct stereo image from sofa
- Speaker model: Mobius5i/7i
- May wish to consider addition of subwoofer for increased bass presence



Multichannel '5.1' surround sound

- Speakers positioned as close as possible to Dolby recommendation.
- Ceiling positions shown, but speakers may also be positioned in-wall if space and construction allows.
- Speaker model: Mobius5i/7i + subwoofer.
- Subwoofer concealed in TV cabinet

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Audio in kitchens is usually used for background music, or louder music listening if the space is used for occasional entertaining.

The example room above is a relatively large open-plan space, and our aim for both ambient and louder music is to provide even coverage throughout the room, with as little variation in volume as possible. The quantity of speakers required to achieve this is of course dependent on the size of the room, in particular the ceiling height. In rooms of equal floorspace, higher ceilings will require fewer speakers to achieve even coverage. This is illustrated in the floorplans overleaf, showing the number of speakers required for even coverage for two different ceiling heights. For help estimating speaker quantities for even coverage in larger spaces, Amina have provided a detailed video guide on how to specify speakers as well as a quick reference chart showing correct speaker spacing for different ceiling heights. Please contact technical support for further information.

In terms of the application, the speakers selected should be capable of the performance level required, and this does not affect the quantity of speakers required for even coverage at all. The only change to the speaker layout for a very high performance system would potentially be the addition of a subwoofer, in this case under the kitchen island.

Mobius speakers have been selected based on the assumption that the space was a new development / refurbishment which recieved a full plaster skim. In the case of a retrofit into an already-plastered surface or if the finished surface is drylining, Edge speakers can be considered as an alternative.

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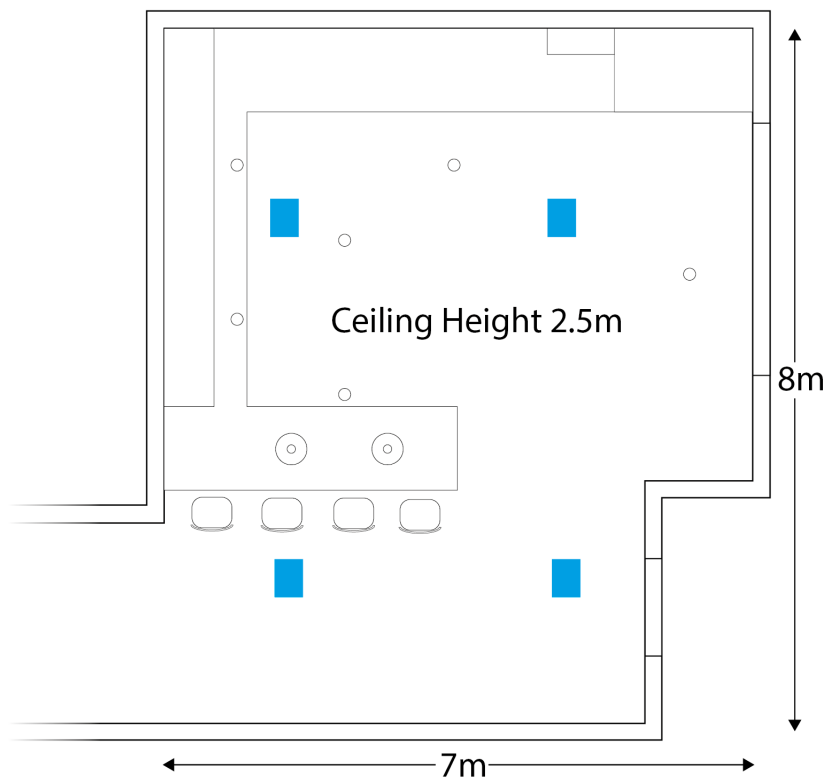
Selection Guide

APPLICATION NOTE

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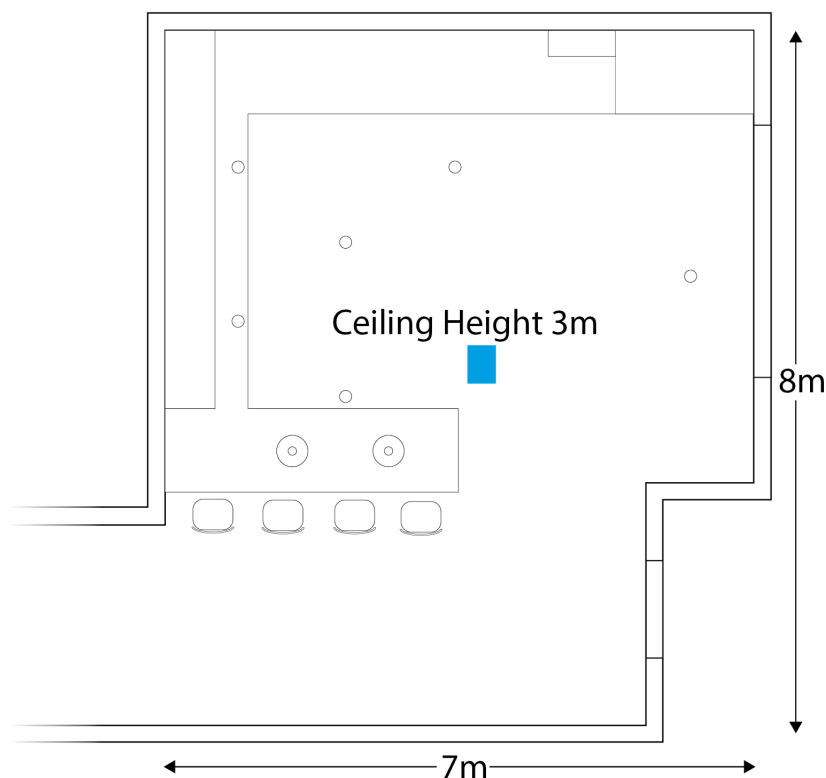


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Ambient / background music I

- Speakers positioned for even coverage throughout the room
- Speaker model: Mobius3i
- Higher performance speakers can be substituted in
- Subwoofer can be added for further performance increase



Ambient / background music II

- Speaker positioned for even coverage throughout the room (with higher ceiling)
- Increased ceiling height means fewer speakers are required for the same evenness of coverage.
- Speaker model: Mobius3i
- Higher performance speaker can be substituted in
- Subwoofer can be added for further performance increase

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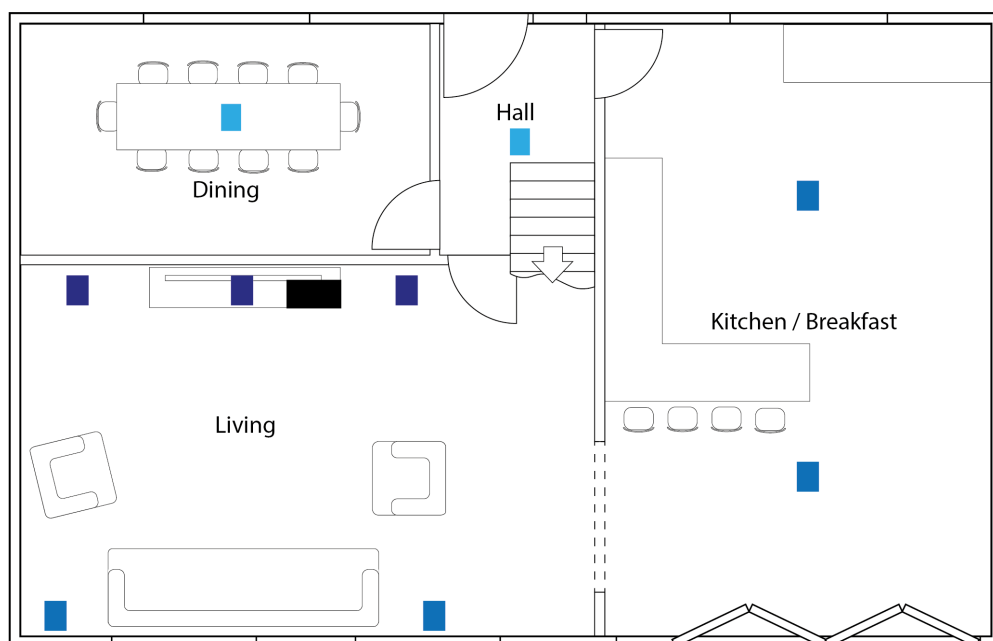
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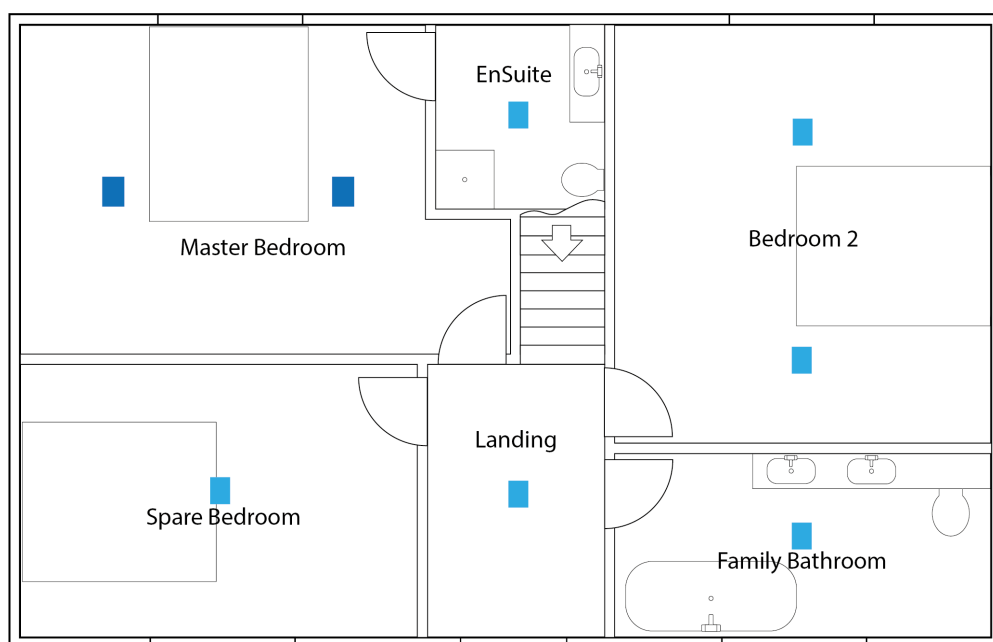


Whole Home Solution

The final example floorplan shows a whole-home solution in a new development where walls and ceilings will receive a full wet plaster skim, meaning the Mobius installation technology is the most appropriate. The rooms are specified for typical applications, which are noted in the legend. Other than the subwoofer (which is concealed in the TV unit) all speakers are shown in-ceiling, as in most cases this provides the most efficient distribution of sound in a space. The only exception is the surround system in the living room, where speakers could equally be positioned in-wall if the construction allows.



Ground Floor - Ceiling Height 2.8m



First Floor - Ceiling Height 2.5m

Legend

 = Mobius7i, used for front channels in surround system to provide ample volume for watching films with immersive sound.

 = ALF80 subwoofer, used to provide added low frequency impact for watching films with immersive sound, where the bass ultimately needs to be felt as well as heard.

 = Mobius5i, mainly used for background music (other than in the living room where they are being used for rear surround channels) as well as providing louder music occasionally.

 = Mobius3i, used for background / ambient music in small and infrequently used rooms. In many cases a single speaker has been used, requiring the stereo source to be summed to mono.