

DALI KATCH ONE

WHITEPAPER



IN ADMIRATION OF MUSIC



DALI KATCH ONE
Iron Black

INTRODUCTION

Modern day TV's may look very smart with their ultra thin screens, but they leave very little room for good sounding speakers. Upgrading your TV audio with a soundbar is a very common solution, but finding a soundbar that has both superb sound and excellent looks is not quite as common.

The DALI KATCH ONE combines superior audio reproduction with a fresh and great looking design. Despite its compact visual appearance, it delivers TV and music audio powerful enough to fill even larger living rooms. With an impressive 10 built-in drivers, the KATCH ONE has ample moving surface area, and when combined with its 200 watts amplifier system, it has the power to deliver the audio pressure that is needed.

With several smart and elegant solutions for mounting or placing, the KATCH ONE will blend in perfectly with any TV setup. The leather strap wall mount with built-in cable management completes the unique look of the KATCH ONE. The rear wall mount offers a sleek and elegant mounting solution, and if wall mounting is not possible, the included feet make it possible to stand the KATCH ONE on any surface.

The DALI designed drivers and amplifier adhere strictly to our sound design principles, reproducing the audio just like the creator intended, whether it be watching the evening news, an action movie or listening to music. To accommodate this even further, the KATCH ONE offers the option of two sound modes, making it possible to get the best out of any performance.

The soft dome tweeters ensure that voices are kept clean, detailed and easy to understand. The four large passive drivers work with the four active woofers to help deliver surprising bass performance for the perfect movie experience. Should the room demand even more bass performance, a subwoofer can be connected, extending the deep bass even further.

DALI KATCH ONE offers a wide selection of inputs, ranging from HDMI, 2 x Optical, Analogue, and also includes Bluetooth (AAC and aptX) allowing the KATCH ONE to connect to any TV or audio system. You can use the included remote handset to control every aspect of the KATCH ONE, or you can connect your TV via HDMI (CEC) and simply use the TV remote to regulate the volume of the KATCH ONE.

With the KATCH ONE, DALI is introducing an elegant and exciting soundbar, with high-quality audio reproduction, two unique sound modes, multiple mounting solutions and a range of connections that leaves no audio device behind. Available in Iron Black, Ivory White and Mountain White finishes, the KATCH ONE will match most TV's, and the unique visual design ensures that the KATCH ONE will stand out without stealing the picture.

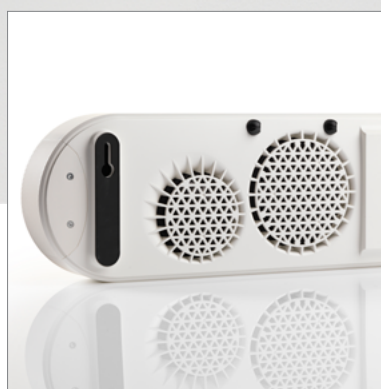
It is with great pride that we introduce the DALI KATCH ONE.

Read on to learn more about the technology working behind the scenes, which make this a great looking and great sounding product.



The three different mounting solutions make it easy to integrate the KATCH ONE with any TV setup to add style to the room

DALI KATCH ONE
Mountain White



DESIGN

Understanding that a soundbar is about so much more than just great sound, we decided to reach out to our main end-user target group to find their desires and wishes. Utilising this feedback, we came up with a visual design that is practical, pleasing and something different from the traditional black box design of many other soundbars.

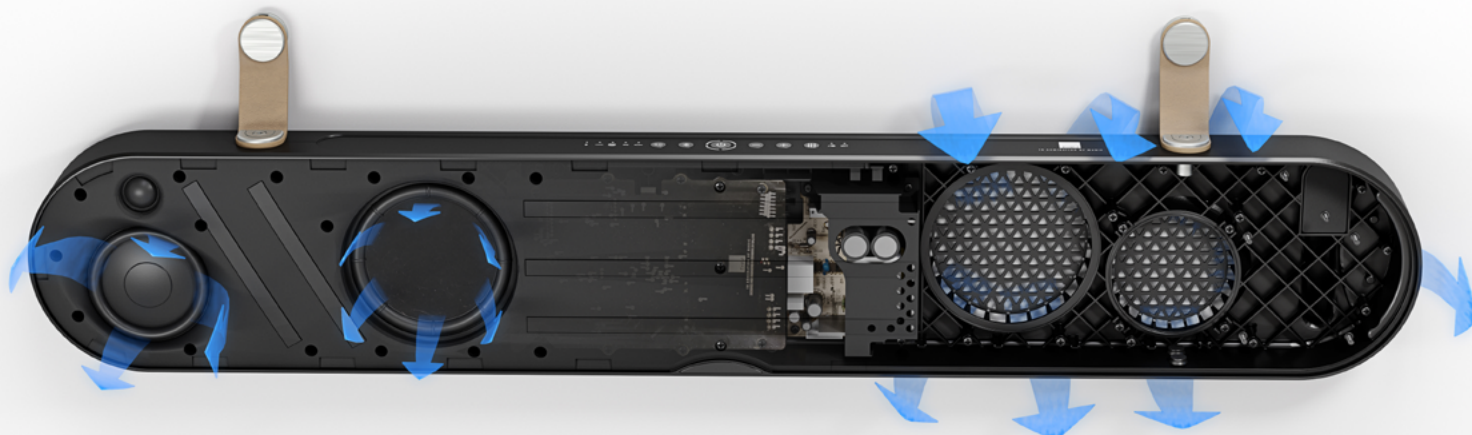
The rounded design and the three carefully selected colour variants make the KATCH ONE stand out from the rest. The Iron Black finish with its elegant combinations of black and grey integrates perfectly with most modern TV's without losing its own identity. The white finishes blend different shades of white into a discrete look that easily integrates with many living rooms, or other areas with the need for a TV or elegant stereo solution.

The front of the KATCH ONE is covered with a matching fabric that serves as both an important part of the look and feel, but also helps the KATCH ONE fit in with the rest of the room. The front fabric is picked for its very good acoustic properties, ensuring that the sound slips through without losing energy or details.

An important part of the visual design is the mounting solution. No matter if the KATCH ONE will be mounted on the wall, or standing on a TV unit, it should do so in style. With no less than three different solutions, the KATCH ONE has a look for everybody. Where the space under the TV allows for it, the leather strap mounting solution truly completes the look and feel of the KATCH ONE. This mounting solution also includes an elegant cable management system, which hides the cables running from the TV to the KATCH ONE.

If space is tight and it is necessary to get the KATCH ONE very close to the TV, the keyhole mount on the rear of the KATCH ONE is the perfect solution. Placing the KATCH ONE on a shelf or on top of furniture is also possible with the use of the supplied real wood feet. These feet match the overall look and feel of the KATCH ONE, and serve to decouple the KATCH ONE from the placement surface, thereby limiting unwanted vibrations and elevating the KATCH ONE to give it a lighter look.

Air-flow guides integrated in both front baffle and fixed rear grille secure an optimised distribution of the audio signal



CABINET

Both the casing and the front baffle of the KATCH ONE are moulded from a glass fibre reinforced ABS compound. This material enables us to construct a platform for the drivers that optimises the flow of air, widens the stereo image, and guides the sound towards the listener. This allows us to bring many large and small visual design features to the KATCH ONE, and it forms the base for an extremely rigid structure that ensures that the movement of the drivers does not cause unwanted resonances in the cabinet structure that could result in distortion of the audio signal.

The physical controls for the KATCH ONE are hidden away, but easily accessible in a slight depression on the top of the cabinet. From here you can control every function of the KATCH ONE. The placement of the different buttons and functions follows the thoroughly tested layout from the DALI KATCH, making the use of the physical controls of the KATCH ONE instantly recognisable.

All of the available inputs and outputs are placed on the rear of the cabinet in a connection bay that hides the plugs from view and gives easy access to the cable management system along the upper back of the KATCH ONE. It is possible to have the connected cables run either up or down from the connection bay, depending on the type of placement chosen.

Both the fixed grille on the rear of the KATCH ONE and the front baffle have built-in air-flow guides to optimise the distribution of the audio signal. With woofers placed both on the front and the back of the unit, directing and optimising the flow of air becomes very important. The rear woofers are designed to integrate with the wall to expand the bass performance, also utilising the wall to widen the stereo image. In the same way, the front woofers are placed on the front baffle surrounded by a wave guide that helps control and aid the air flow for optimised dispersion.



No less than ten drivers enable the KATCH ONE to deliver a clean and detailed audio experience

DRIVERS

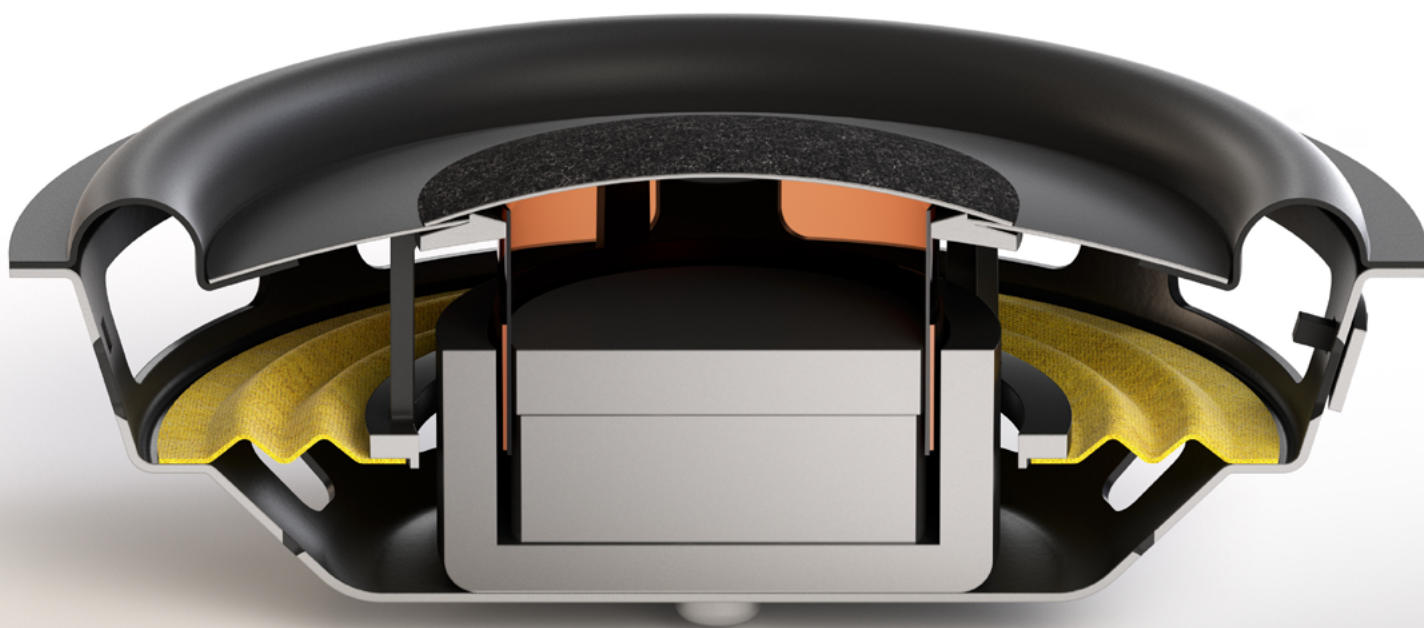
Expanding on the technological experiences we gained from designing the DALI KUBIK ONE and the DALI KATCH, we already had the elemental building blocks required for the DALI KATCH ONE.

We had already developed a very shallow, well performing woofer for the DALI KATCH, and the compact size of this unit enabled us to construct a slim cabinet, but still make room for no less than four active woofers. Another technology introduced in the DALI KATCH was the use of large passive diaphragms to aid as a bass reflex system, utilising the larger moving surface area. Both functions enable this very compact speaker to generate surprising amounts of bass for its size. Experience gained from working with DSP based active crossover in the DALI KUBIK ONE and more recently in the DALI CALLISTO speaker system, has given us insights into the optimisation of drivers and amplifiers. This knowledge enabled us to maximise the use of the driver to an extent not possible with traditional speakers.

Completing the package are the two 21 mm ultra-light weight soft dome tweeters, truly bringing the high-end and upper mid-range to life. Together, the 6 active drivers and the 4 passive drivers render a clean, detailed and coherent audio signal, rarely experienced in a soundbar.

TWEETER

Based upon a very strong neodymium magnet, the 21 mm ultra-light weight soft dome is extremely compact, but at the same time retains a large diaphragm area. Both factors are vitally important in the KATCH ONE. The compact structure of the soft dome tweeter helps keep the inner volume of the cabinet as large as possible. The large surface area of the soft dome ensures that it will reach deep down into the mid-range frequency region without any break up or attenuation, and integrate seamlessly with the woofer. The strong neodymium magnet delivers high power handling and a high sensitivity to the soft dome tweeter, thereby bringing detail, accuracy and speed to the high frequencies.



The specially designed shallow 3.5" woofer retains the maximum excursion of a traditional sized woofer

WOOFER

A shallow bass/mid-range woofer with long excursion sounds like a contradiction in terms. Nonetheless, this was achieved by using a specially designed chassis, inverted diaphragm and special spider suspension. The result is a woofer with the same maximum excursion as a similar sized traditional woofer. Every extra millimetre gained in internal depth is turned into true low frequency reproduction, letting the woofer generate bass with as little help from the DSP as possible.

The convex cone is constructed from an aluminium diaphragm with a soft fabric dust cap. The stiff aluminium cone allows the woofer to move as much air as possible, even at mid-range frequencies, and the combination of aluminium and fabric works to lower surface resonances, retaining detail and clarity.



Select one of the two sound modes for great TV experiences, whether it be movies, news or music

DALI KATCH ONE
Ivory White

AMPLIFIER & PSU

Driving the KATCH ONE are four, 50 watts peak, closed loop Class-D amplifiers. Utilising DSP for active crossover, the amplifiers are directly connected to the drivers, maximising the performance. The low Signal to Noise ratio (100dB) of the amplifier module ensures that even the smallest detail in a quiet passage is passed on to the drivers, clear and undistorted. Feeding the amplifier is a 200 watts peak switch mode power supply, with ample power delivery to handle everything from a concert to a powerful explosion. The dual transformer design ensures that the standby power is kept very low, and headroom to handle the power requirements of the amplifiers is always available.

DSP

The KATCH ONE DSP is chosen for its high processing power and its ability to handle any digital input. While able to handle any signal up to 24 bit/192 kHz, it operates internally at 24 bit/96 kHz. With 3,072 Instructions per audio sample, the DSP has the processing power to expertly handle all 6 active woofers and act on any challenge the audio signal throws its way. The surplus of computing power lets the DSP step in before the amplifier or the drivers get over extended, and at the same time giving it the ability to go completely hands-off, allowing the drivers to deliver a coherent and undistorted audio signal. This optimisation between amplifier, drivers and DSP is one of the reasons why the KATCH ONE performs like no other soundbar of comparable size.

The KATCH ONE offers two different sound modes. They are designed to let the KATCH ONE perform with the widest selection of movies, documentaries, news and music. The first setting offers a focussed and very linear audio reproduction that serves to draw out the often elusive midrange frequency area. The other setting offers a wide, impressive and very dynamic audio rendering. This sound mode puts the emphasis on bringing a room filling, surprisingly powerful experience. Both sound modes deliver perfectly on the main goals of a high-quality soundbar - improving the TV experience through great sound.



CONNECTIONS

With 5 different audio inputs, the KATCH ONE will connect to any audio device. With a focus on TV connections, there are no less than four ways to connect a TV, but there are also ample possibilities to connect music streaming devices also.

The KATCH ONE has auto signal detect on all inputs. Just turn on the TV or audio source and the KATCH ONE will automatically power on and select the correct input, even if it is Bluetooth. If there is no signal for 20 minutes, the KATCH ONE will automatically power off, saving energy.

HDMI

The HDMI input on the KATCH ONE is an audio only input. It uses the ARC standard to receive a stereo PCM signal from the TV. The HDMI connection also supports CEC allowing for the use of the TV remote control to adjust the volume, mute and power on and off the KATCH ONE along with the TV.

Optical In (TV)

This optical S/PDIF input is designed with TVs in mind. The auto power on function on this input is activated by the carrier light on the optical output from the TV. This will ensure that the KATCH ONE is on and ready to play the TV signal as soon as the TV is ready.

Bluetooth

KATCH One's Bluetooth connection offers two different connections scenarios. The AAC or aptX connections allow the connection of your phone or tablet for easy music playback of either locally stored or streamed music. The Bluetooth input also supports a connection from a TV that supports Bluetooth output, making the KATCH ONE soundbar a completely wireless TV solution.

Optical in

This optical S/PDIF input is designed for use with audio playback devices. Many CD players and audio streamers do not turn off the carrier light when put in standby. Therefore, this input detects on the audio signal, enabling auto power on/off even if the carrier does not turn off.

Analogue In

If your TV does not offer either HDMI ARC or Optical Out, then using the analogue output on the TV is still an option. You can also use the stereo mini-jack input to connect a phone, tablet or PC directly to the KATCH ONE.

SUB Out

Seeking that truly deep bass feeling when watching a movie or listening to music? Connecting a subwoofer to the KATCH ONE is easy and rewarding. When connected, all deep bass audio will be sent directly to the SUB Out by the DSP, letting the KATCH ONE handle the remaining frequency range. Not having to contend with the deep bass also gives the amplifier more headroom, allowing the KATCH ONE to extend even further up the volume scale.

USB Service/Power

The built-in USB port is mainly a service port for firmware upgrades. It does not allow for music playback. Another important feature is its ability to power an Amazon Echo Input. Using an Echo Input gives you complete voice control and works with Tune In and Spotify amongst other services.



DALI KATCH ONE
Ivory White

APPLICATION

Living rooms are still one of the most frequent places to listen to music and enjoy movies. The DALI KATCH ONE offers a perfect way of improving your TV audio, getting rid of complicated and bulky audio systems, and doing it all in style. The KATCH ONE gives back the full enjoyment of all TV moments by delivering controlled bass in movies, clear and understandable voices when watching the news, and a perfect harmony of both when enjoying any type of concert or musical performance.

The KATCH ONE integrates completely with any TV that supports HDMI ARC, controlling the KATCH ONE volume using the TV remote. The built-in auto sensing input selection limits the need for using the KATCH ONE remote control if any other input is needed.

Using the KATCH ONE with a Bluetooth connection from a phone or tablet makes playing music extremely convenient, and the KATCH ONE even supports Bluetooth connection from supported TV's.

DALI KATCH ONE is a soundbar made for the modern living room, and it blends good looks with superior audio quality. Multiple mounting solutions make it easy to integrate with your current TV setup, and the Iron Black, Mountain White and Ivory White colour options make it even easier.

TECHNICAL SPECIFICATIONS

Frequency Range (+/-3dB) [Hz]	46 - 25,000
Maximum SPL [dB]	101
Crossover Frequency [Hz]	250 / 2500
Crossover Principle	2½-way
High Frequency Driver	2 x 21 mm Soft Textile Dome
Low Frequency Driver	4 x 3.5" Aluminium Cone with Textile Cap
Low Frequency Passive Driver	4 x 4.5" Steel Cone
Enclosure Type	Passive Radiators (4 pcs)
Max Amplifier Power Output [watt]	4 x 50
Connection Input(s)	HDMI Arc 2 x Optical/Toslink 3.5 mm Mini-jack Stereo
Wireless Input(s)	Bluetooth™ 4.0 AAC™ & aptX™
Connection Output(s)	Sub Out USB Charge (5V/1A)
Amplifier Type	Fully Digital Class-D Amplifier
Recommended Placement	Wall Table close to wall
Functions	Dual Sound Mode (Wide/Focus) Auto Source Select Stand-by (Auto Power) Off Mute Power On/Off Volume Source Select Bluetooth Release
Standby Power Consumption [W]	<0.5 (Mains Adapter)
Dimensions (HxWxD)	164 x 860 x 69 mm / 6.5 x 33.9 x 2.7 inches
Weight	3.7 kg / 8.2 lbs
Accessories Included	Wall Bracket (Leather Mount) Feet (Solid Wood) Remote Control Mains Cable (2m Wire Length) Quick Start Guide
Finish	Iron Black Ivory White Mountain White