

# NOVASONAR<sup>TM</sup>

Give your building a voice



Invisible flat-panel loudspeakers  
for architectural freedom

# NOVASONAR™

Give your building a voice



## THE PHILOSOPHY

We thought it through

Sound is wonderfully invisible. So why should you have to see loudspeakers?

Architects and interior decorators have been asking this question for generations. There are numbers of approaches to conceal loudspeakers in walls, ceilings and furniture. Up until now, however, they have always resulted in sound being compromised. With the Novasonar system by ML Audio a revolutionary new solution has been found.

The Novasonar system directly converts walls, ceilings or furniture into sound bodies without sound or room design being compromised. A new age of audio technology has been born.

The Novasonar system by ML Audio brings technology and design together like no other architectural component. Thus Novasonar offers revolutionary possibilities in the field of audio technology. We would like to put this potential into service of your creativity.

Give your creative ideas free rein and include Novasonar flat-panel loudspeakers right in the beginning of the early planning and design phases.

Place maximum sound quality invisibly, wherever you want. Whether as a stereo system in your living room in connection with conventional HiFi equipment or as a component of a complex sound network at an airport. In new constructions as well as in extensions, renovations or restorations. Even in protected historical monuments. The surface of Novasonar systems can be freely designed, for example with wallpaper and paint or extensive plaster and stucco work.

Open for the future.

# NOVASONAR™

The concealed technology



Schematic of an installed Novasonar GK loudspeaker

Simple and ready-to-connect. With an integrated ML loudspeaker network the loudspeaker can be used without any additional expensive electronics with conventional HiFi or professional amplifiers.

## THE TECHNOLOGY

Developing systems today for the future

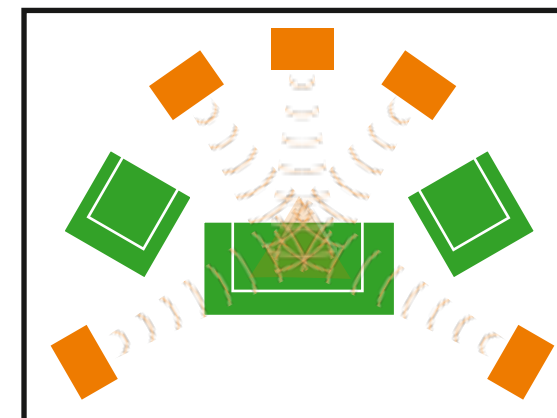
Novasonar flat-panel loudspeakers operate on the principle of a bending-wave transducer. The bending-wave transducer is modeled on such musical instruments as guitars or violins. With these instruments, a vibration is translated to the body through the strings, causing the body itself to vibrate. The surface disperses this vibration as sound.

The instrument is - so to speak - a vibrating sound body.

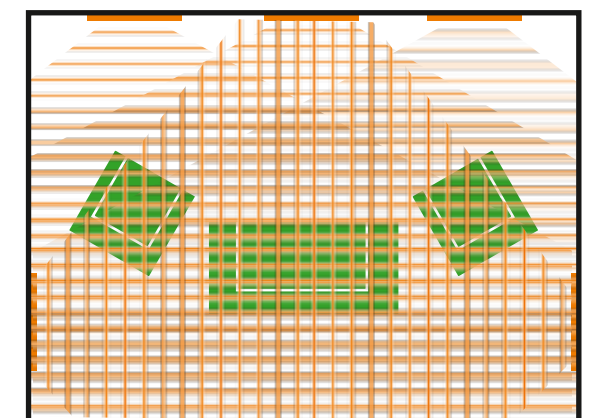
The Novasonar flat-panel loudspeaker by ML Audio is also a vibrating sound body. It is stimulated, however, by an electro-magnetic diaphragm system, the exciter. The frequency range is very broadband and ranges from 100 Hz to 18000 Hz over the entire dispersion angle of almost 180° horizontally and 180° vertically. If necessary, this frequency range can be enhanced with a subwoofer from 30 Hz to 100 Hz. If the dispersion behaviour of a Novasonar flat-panel loudspeaker is compared to a conventional cone loudspeaker,

it could be said that the difference is about equal to the heat distribution of an open fire compared to a central heating system, whereby the dispersion characteristic of the Novasonar flat-panel loudspeaker equals the pleasant and balanced dispersion characteristic of the central heating system.

With these properties the Novasonar flat-panel loudspeaker offers excellent audio qualities. With the special ML stereo matrix a single Novasonar flat-panel speaker can even be converted into a stereo loudspeaker with unmatched audio quality and space dispersion behaviour.



Conventional loudspeaker solution for Dolby 5.1.  
This supplies only one single listening position optimally.



Novasonar solution for Dolby 5.1.  
Improved, space-filling acoustics without visible loudspeakers.  
All listening positions are optimally supplied.



# NOVASONAR™

Always keeping up with the times



Exhibition of Mercedes-Benz during IAA Frankfurt



## YOUR REQUIREMENTS

Our solutions

### DESIGN OPTIONS

Novasonar flat-panel loudspeakers can be freely designed, exactly as needed by you. Size, surface and form (in a two-dimensional sense) are almost endlessly variable.

Specify size, surface and shape of your Novasonar flat-panel loudspeaker and we will produce it according to your request.

We look forward to bringing your ideas to life.

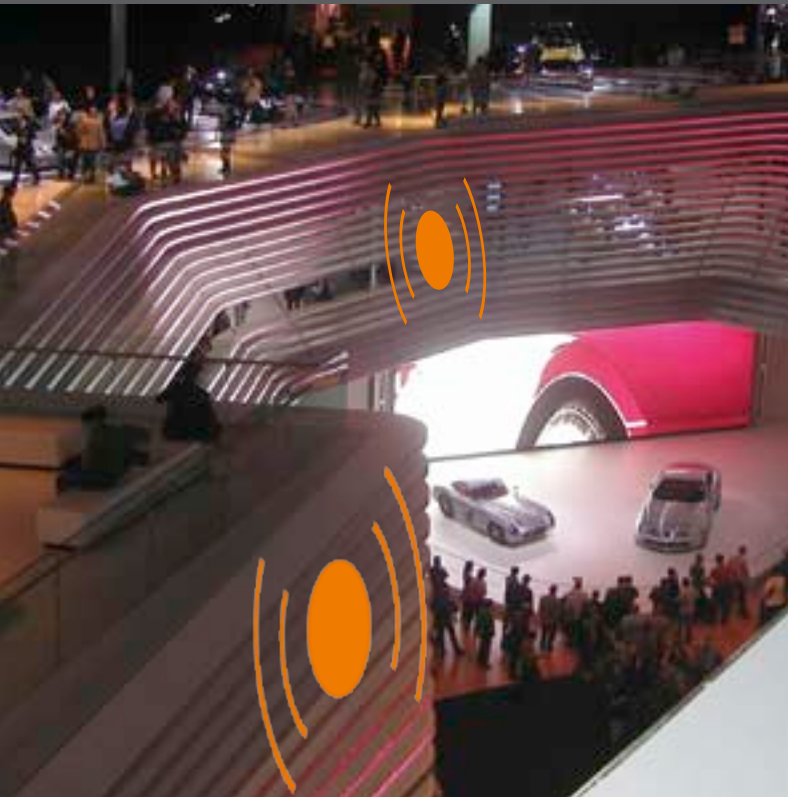
The following surface designs are available:

- Artistic designs painted directly on the surface
- Laquered surfaces
- Wallpapered surfaces
- Surfaces painted with dispersion paints, etc.
- Plastered surfaces
- Surface reconstructions
- Real wood veneer
- Laminates
- Permanently or reversibly laminated prints
- Poster laminations
- Lettering
- Self-adhesive surfaces
- Screen coatings
- Hygienic surfaces
- Metal surfaces
- And numberless other surface designs

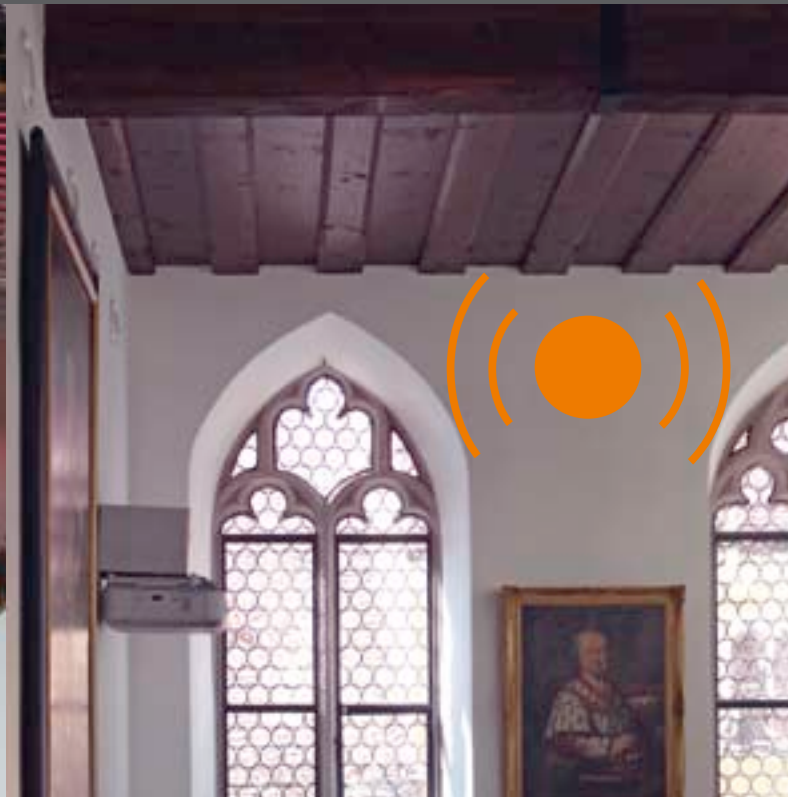


# NOVASONAR™

The invisible solution



IAA Frankfurt, exhibition of Mercedes-Benz



Historical City Hall

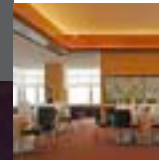


Novasonar offers customised solutions no matter what environment or installation situation you want to hear invisible sound in.

## YOUR APPLICATIONS

Novasonar sets the tone

### SHOPS, HOTELS AND HOSPITALITY



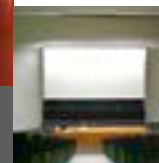
Chip boards or MDF boards in a shop building or a solid wood lining in a cosy hotel lobby can be a flat-panel loudspeaker. Novasonar opens up entirely new possibilities for presentation, information and interactive communication. At a high-quality shop in Munich for example, the table top of an interactive table is fitted with Novasonar flat-panel loudspeakers. At Delmenhorst train station, the front of a multifunction terminal was designed as a Novasonar flat-panel loudspeaker and matched to the shop interior.

### HOMES, ART, HOME CINEMA AND DISPLAYS



The Novasonar flat-panel loudspeaker can be installed in walls, ceilings and furniture in your home or designed directly artistically with oil or other paints as a painting. Also coming as permanently laminated digital prints, reversible laminations of ads or graphics (e.g. company logos), poster laminates, etc..

### PROJECTION, CONFERENCE AND PRESENTATION TECHNOLOGY



The Novasonar flat-panel loudspeaker designed as a projection screen is provided with a washable screen surface. In the large auditorium of the Zoological Institute in Munich with space for an audience of 400, Novasonar flat-panel loudspeakers are integrated into the projection screen measuring 40 square metres. Sound for this auditorium is realised exclusively with Novasonar flat-panel loudspeakers.

### DRY CONSTRUCTION AND FAIR BUILDING



Because of the troublefree installation of the Novasonar flat-panel loudspeakers it is easy for the dry constructor or carpenter to integrate them directly and smoothly into the wall or ceiling, matching it to the interior decoration, as was done at IAA Frankfurt and Geneva's Car Fair at the booth of Mercedes-Benz.

### HIGH-TECH CEILINGS



Novasonar flat-panel loudspeakers can be integrated into many different commercially available grid ceilings. To accomplish this, the original boards are converted to Novasonar flat-panel loudspeakers. Using the original boards prevents colour or structural differences to the surrounding ceiling.

### PROTECTED HISTORICAL MONUMENTS, RESTORATIONS, MUSEUMS AND CHURCHES



Because of the numberless possibilities for surface designs and its ability to remain invisible while providing maximum sound quality Novasonar opens up completely new design concepts. Thus the original character of a room under historical monument protection can be retained with the use of Novasonar flat-panel loudspeakers. The Novasonar flat-panel loudspeakers for the "Hodler-Saal" of the "New Town Hall" in Hanover for example were veneered in mahogany.



## NOVASONAR™

Examples of solutions and applications

### Novasonar Installation Kit



#### Chipboards, MDF boards or solid wood simply converted into sound bodies.

The Novasonar KIT is used to convert prefabricated chipboards, MDF boards or solid wood, regardless of whether they are veneered, painted, laminated, covered with aluminium or laminate, etc. into premium loudspeakers in a matter of minutes. Simply remove the silicone paper from the front of the Novasonar KIT module and attach the self-adhesive front of the module to the back of the prepared board material. With these simple steps the Novasonar flat-panel loudspeaker is integrated into the boards invisibly and without grooves. The loudspeaker can be operated with a conventional HiFi amplifier with excellent sound quality using the ML loudspeaker network.

#### Universal module

Open to your creativity. Talk to us.



#### Projection screen

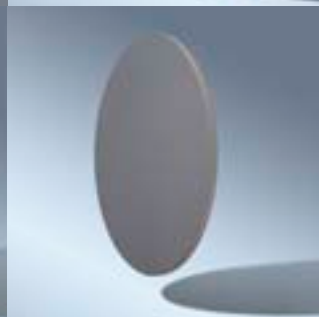
The sound comes directly from the projected image.



#### Laminating picture loudspeaker

Paints or Prints.

#### Special shapes



#### Grid ceilings



This loudspeaker suitable for direct integration into ceiling grids consists of a conventional ceiling board. You supply your ceiling board to us, new or used, and we will integrate our Novasonar flat-panel loudspeaker into it. Differences in colour or structure to the surrounding ceiling outside the manufacturer's tolerances for the boards can thereby be excluded. With the ML loudspeaker network, the loudspeaker can be operated with excellent sound quality using a conventional HiFi amplifier.

### Model Novasonar GK



The Model GK is installed in a matter of minutes. The Novasonar flat-panel loudspeaker is already mounted in a conventional gypsum plasterboard. Surface, material texture and installation thickness of the Model GK do not differ from the original gypsum board.

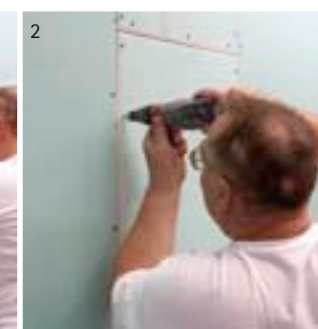
Decisive benefits for dry-construction installation:

1. Due to the high degree of prefabrication, the Novasonar flat-panel loudspeaker can be installed and used in a matter of a few minutes.
2. By using a simple installation guide sheet the dry constructor is able to install the loudspeaker system faultlessly without prior training.
3. Plastering of the loudspeaker membrane is not required.
4. There is no danger of cracks around the edges because there are no different materials used.
5. No additional installation frame is required.
6. Since the membrane does not have to be plastered, the sound quality of the loudspeaker can no longer be influenced by incorrect installation, e.g. plaster that is applied too thickly or not evenly, or incorrect levelling. Especially with light wall coverings, such as wallpaper, paint, etc., this characteristic makes it possible to operate an installed Novasonar flat-panel loudspeaker with integrated ML loudspeaker network on a conventional HiFi amplifier with excellent sound quality without additional expensive electronics being necessary.
7. The loudspeaker can also effortlessly be installed in a gypsum board construction subsequently.

Additional executions, e.g. plaster fibre etc. are possible.

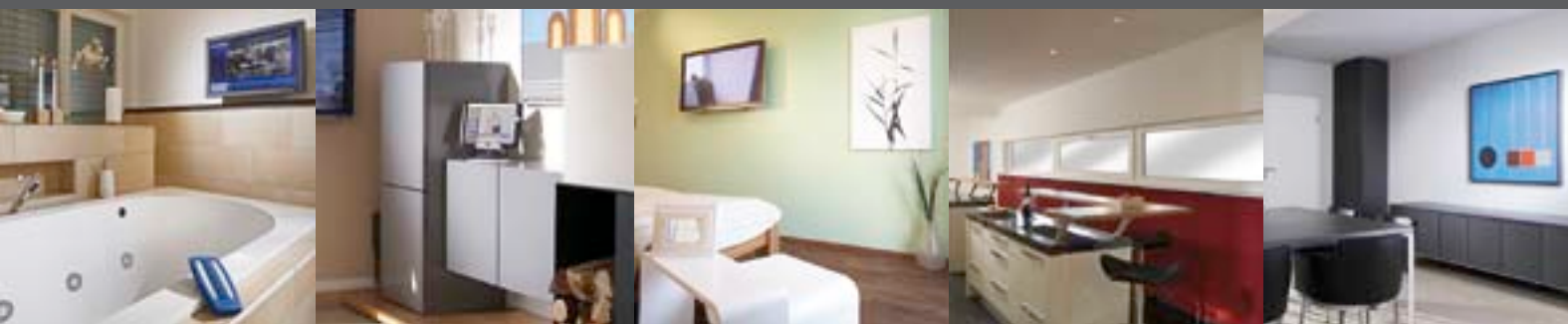
Easy to install in just a few minutes in dry constructions.

1. Connect the speaker cables and place the loudspeaker into the provided cut-out.
2. Attach the loudspeaker to the subconstruction.
3. Fill the gap.
4. Finished!



# NOVASONAR™

Proper acoustic irradiation



**BASED ON EXPERIENCE** Your satisfaction is our aim

“Experiencing space and sound in a revolutionary new way – that is phenomenal. Novasonar makes rooms appear completely different, because there is no more unattractive technology to be seen. Excellent effects can be achieved with this technology in professional as well as in private settings.”



Ilse Schmidt – excited Novasonar customer

“The only thing you should see while using modern media technology is our touch panel. All other components are subject to our customer’s individual needs. Novasonar by ML Audio is the optimal system to bring together sound and architecture.”



Siegfried Hermann – CRESTRON Germany  
Professional media technology

“Installing loudspeakers flush with the surrounding surface in dry construction is easier than you may think. The Novasonar systems are pre-fabricated so that they can be installed just like any conventional gypsum plasterboard. Connected, screwed in and joints plastered in just a few minutes. It couldn’t be easier.”



Mathias Huprich – successful dry constructor

“This technology complies with aesthetical requirements without sacrificing function. Novasonar helps me realise even sophisticated design ideas without compromises, because the design is not flawed by visible technology.”



Michaela Voß – interior decorator



# NOVASONAR™

The ML flat-panel loudspeaker



Picture loudspeaker  
with stereo matrix



## SYSTEM BENEFITS at a glance

- Completely invisible
- Almost endlessly variable in size, surface and shape (in a two-dimensional sense), which provides numerous possible designs in public, semi-public and private sectors
- Almost unlimited possibilities of integration
- Extremely flat installation depth
- Easy installation
- Fantastic spatial acoustic pattern
- Highest audio quality (with integrated ML loudspeaker network even operatable with commercially available HiFi equipment without additional expensive electronics)
- Compatible with almost any conventional amplifier
- Broad dispersion angle even with in high frequencies (180° h x 180° v)
- Wide-coverage sound dispersion
- Excellent speech intelligibility
- Few reflexions
- Particularily suitable for rooms with difficult acoustics
- Maximum capacity due to high-performance exciter
- Membrane materials selected according to acoustics
- Integrated 100 V transformer on request
- Very low feedback tendency when using microphones

Your creativity designs rooms and spaces. For this, Novasonar offers optimum sound quality without limiting your architectural freedom.



# NOVASONAR<sup>TM</sup>

Invisible flat-panel loudspeakers  
for architectural freedom

Available from your authorised dealer

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