REYN AUDIO

TURANDOT Acoustic System Platform

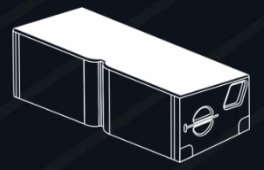
Simulation & Control

TURANDOT Software Systems

Manage & Amplify

REYN AUDIO DSP Amplifier

Sound Output



REYN AUDIO Speaker

REYN AUDIO

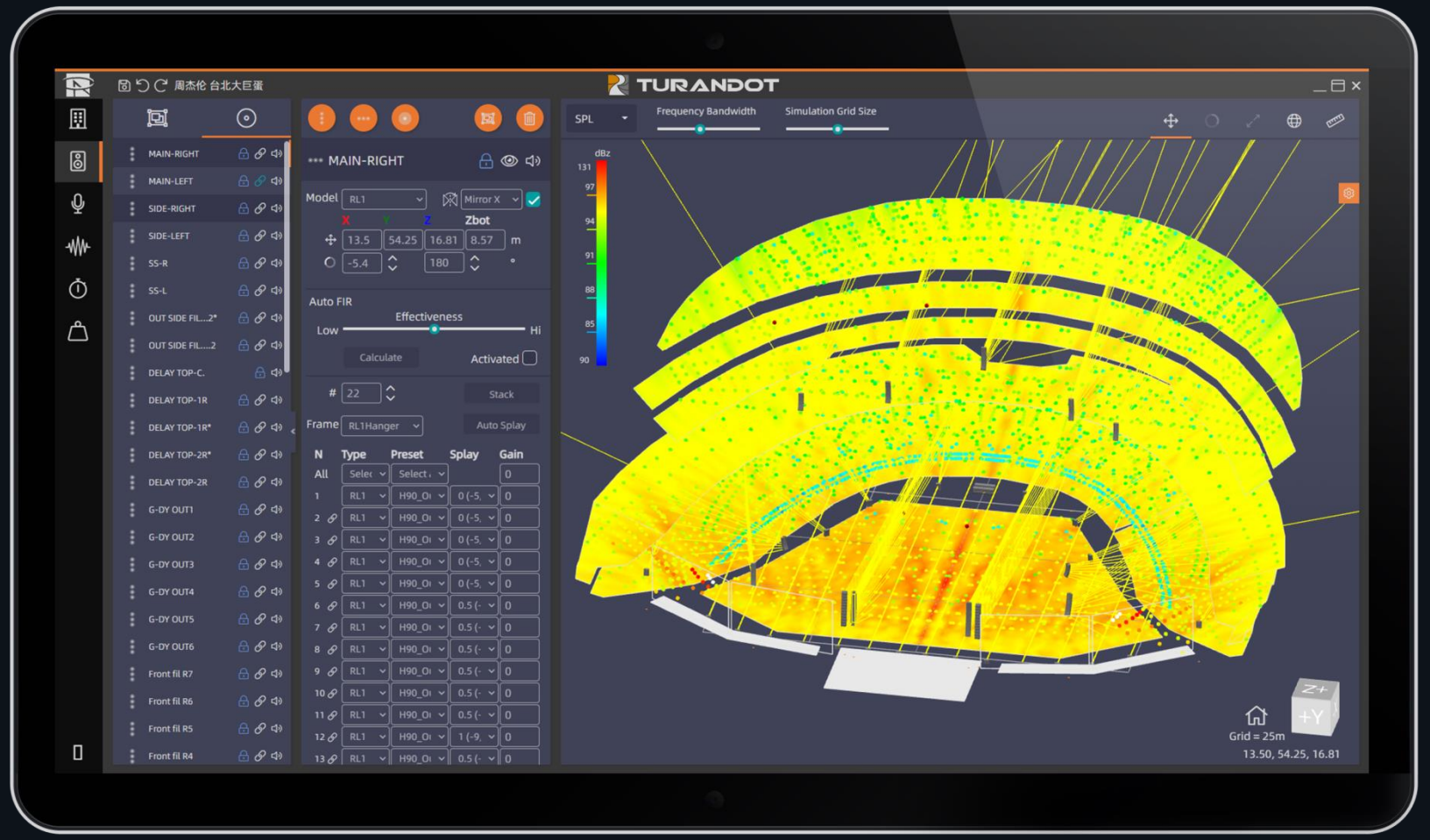
01

Software Introduction

TURANDOT

TURANDOT is a comprehensive acoustic system platform that integrates analog signal management and remote device control. Industry-leading **systems for venue and space modeling, acoustic optimization, parameter prefabrication, and audio control**

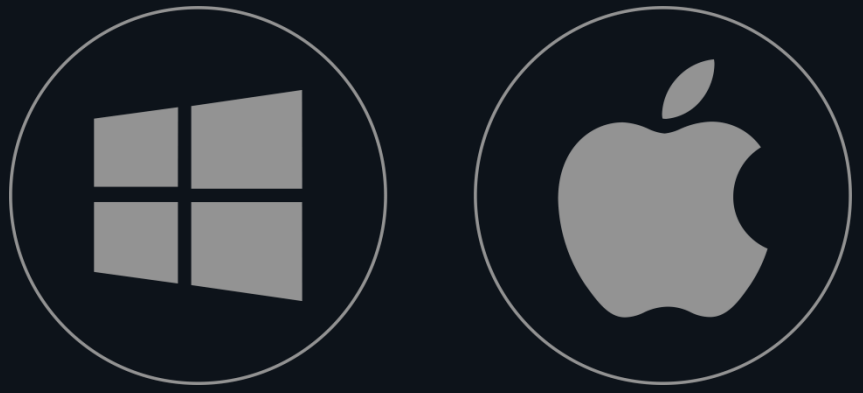
Designed for professional applications such as concert production, indoor arenas and outdoor stadiums sporting events, corporate events, theaters, and clubs.



TURANDOT supports

Windows 10 or above and macOS

operating systems



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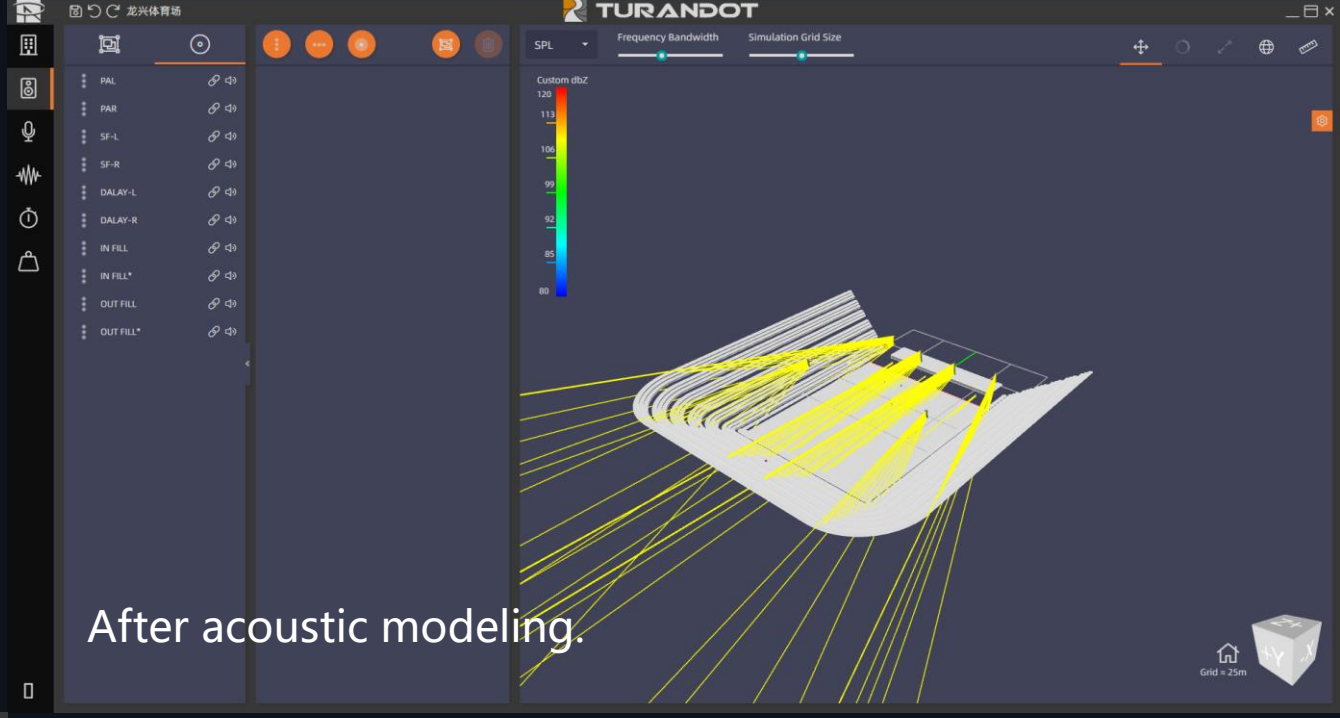
02

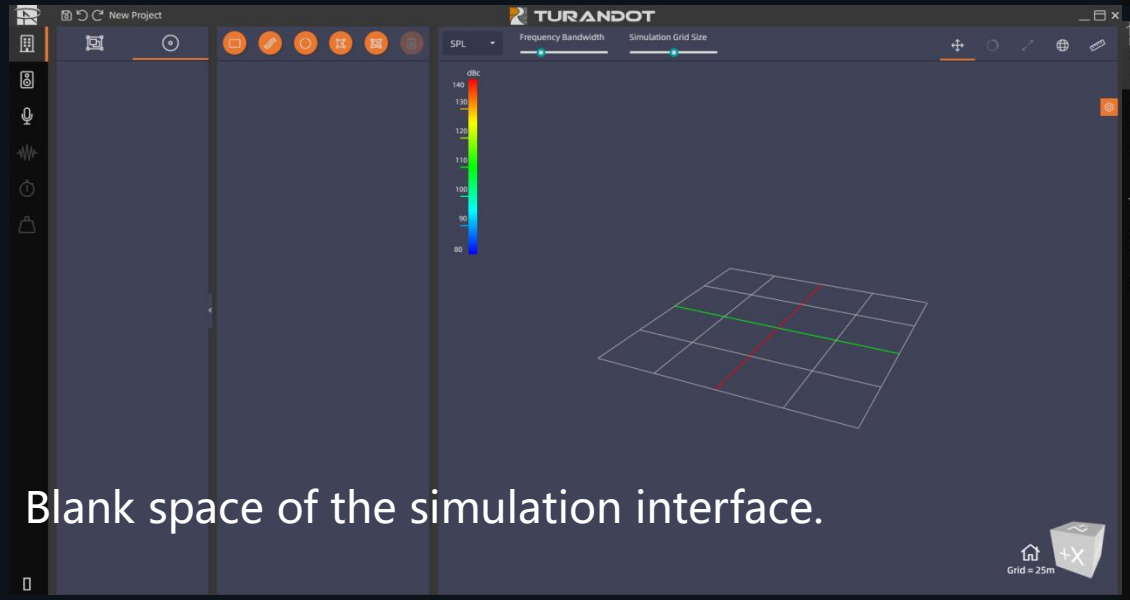
Advantages

Sound Field Simulation

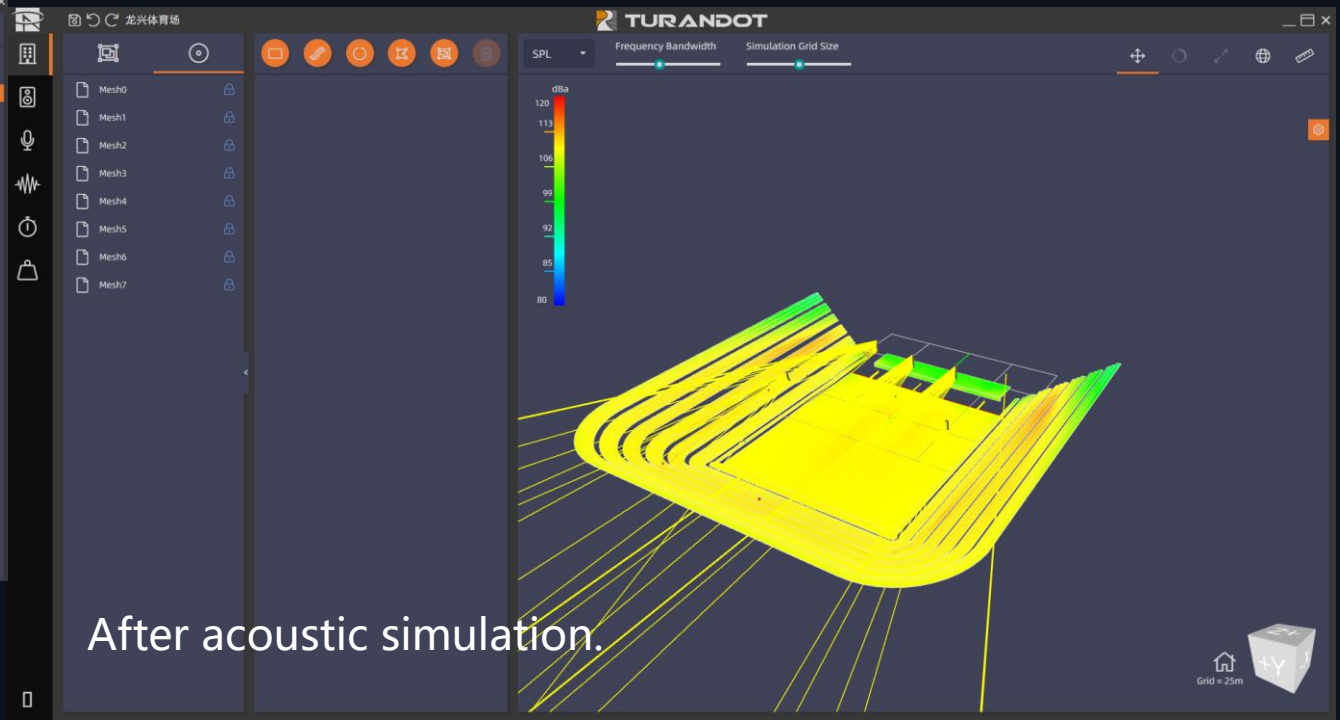
TURANDOT supports sound field simulation and optimization. Integrating functions such as space, sound source, and microphone placements. Quickly and easily generates optimization schemes, and simultaneous output reports.



After acoustic modeling.



Blank space of the simulation interface.



After acoustic simulation.

Flexible Control

Free parameter control, flexible configuration of multi-scene sound effects;
Real-time link between the device and interface with intuitive interaction and instant response. The sound field environment is simulated, the debugging scheme is directly connected to the site, and the deployment is implemented seamlessly.

Straightforward

There is no need to connect to field devices. The interface can be accurately mapped from the device.

The tuning effect can be visualized in real time, and the adjustment of parameters such as gain and frequency can be fed back instantly. What you see is what you get.

Flexible

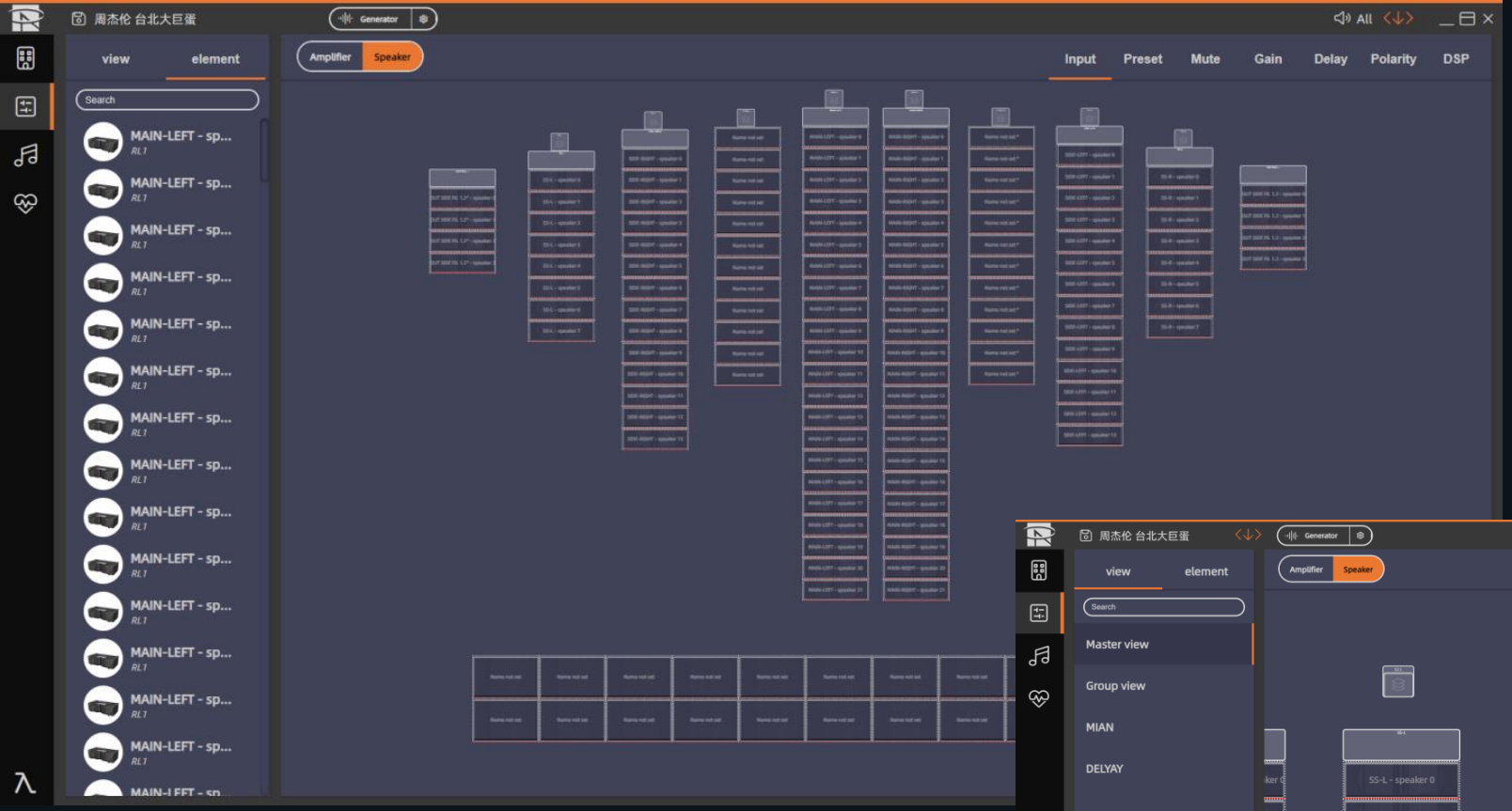
Supports a variety of groups, scenarios, and configuration presets to achieve accurate parameters and can freely combine inputs (Multimodal parameter configuration).

Fast

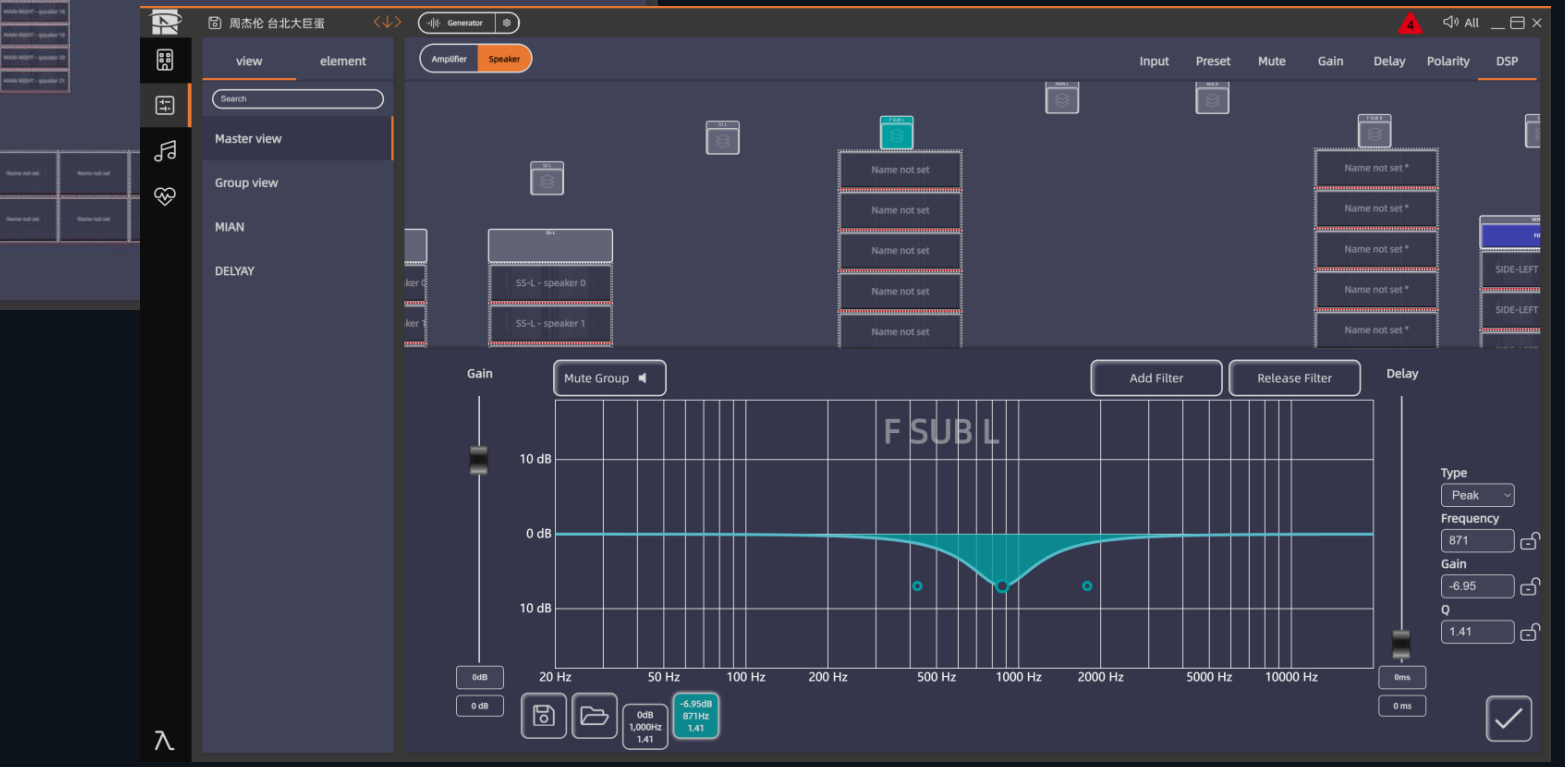
Quick and easy set up of the system with Real-time tuning of application scenario data,
Efficiently deploy field effects.

Presets

Direct import of simulation data,
The sound field modeling and tuning are completed in the system.
Achieve accurate presets of on-site conditions.



Built-in parameters for flexible tuning



Quick and easy tuning for presets.

Unique Innovations For Operation Within The Same Framework

One-click import of modeling and optimized sound field data into DSP power amplifier for monitoring the health status of equipments in real time (synchronous system monitoring function).

Integration of simulation and control

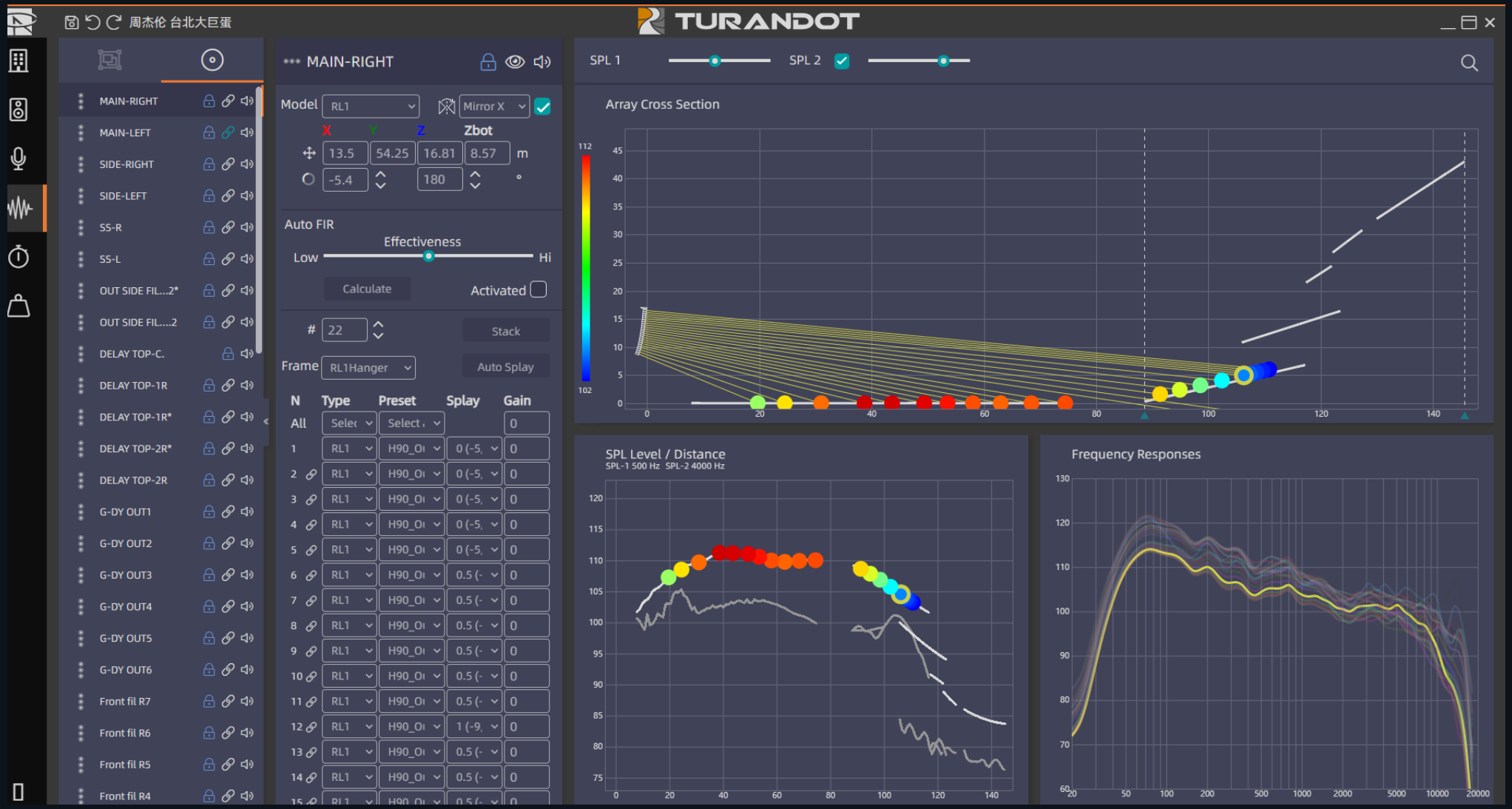
Proprietary acoustic simulation software integrates with the control software on a single platform,
Supports one-key mode switching,
There's no need for cross-platform data migration.

One-Click Import of Analog Data

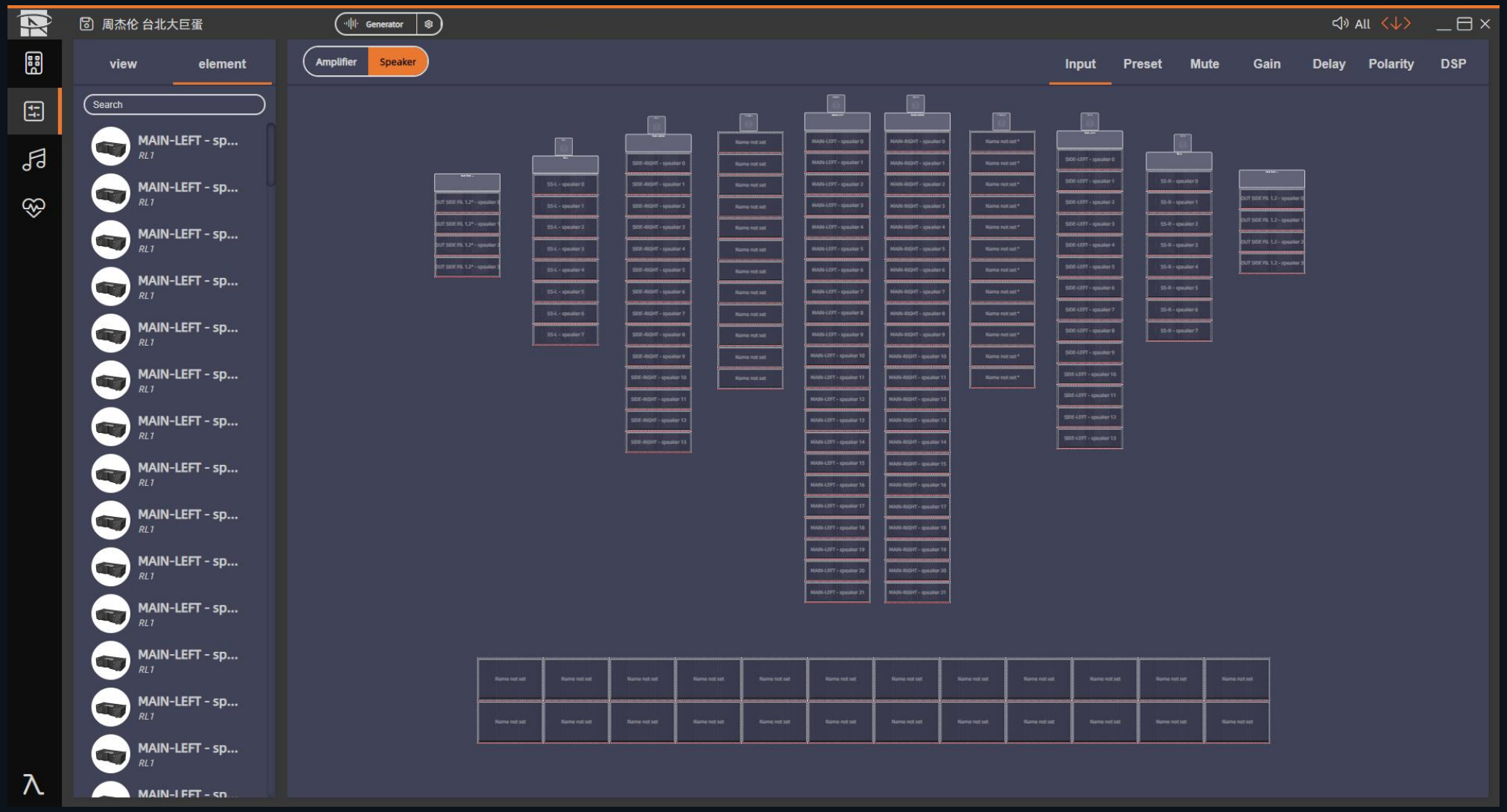
The software supports one-click import synchronization of simulated data,
And streamlined operations.

Real-Time Health Status Monitoring

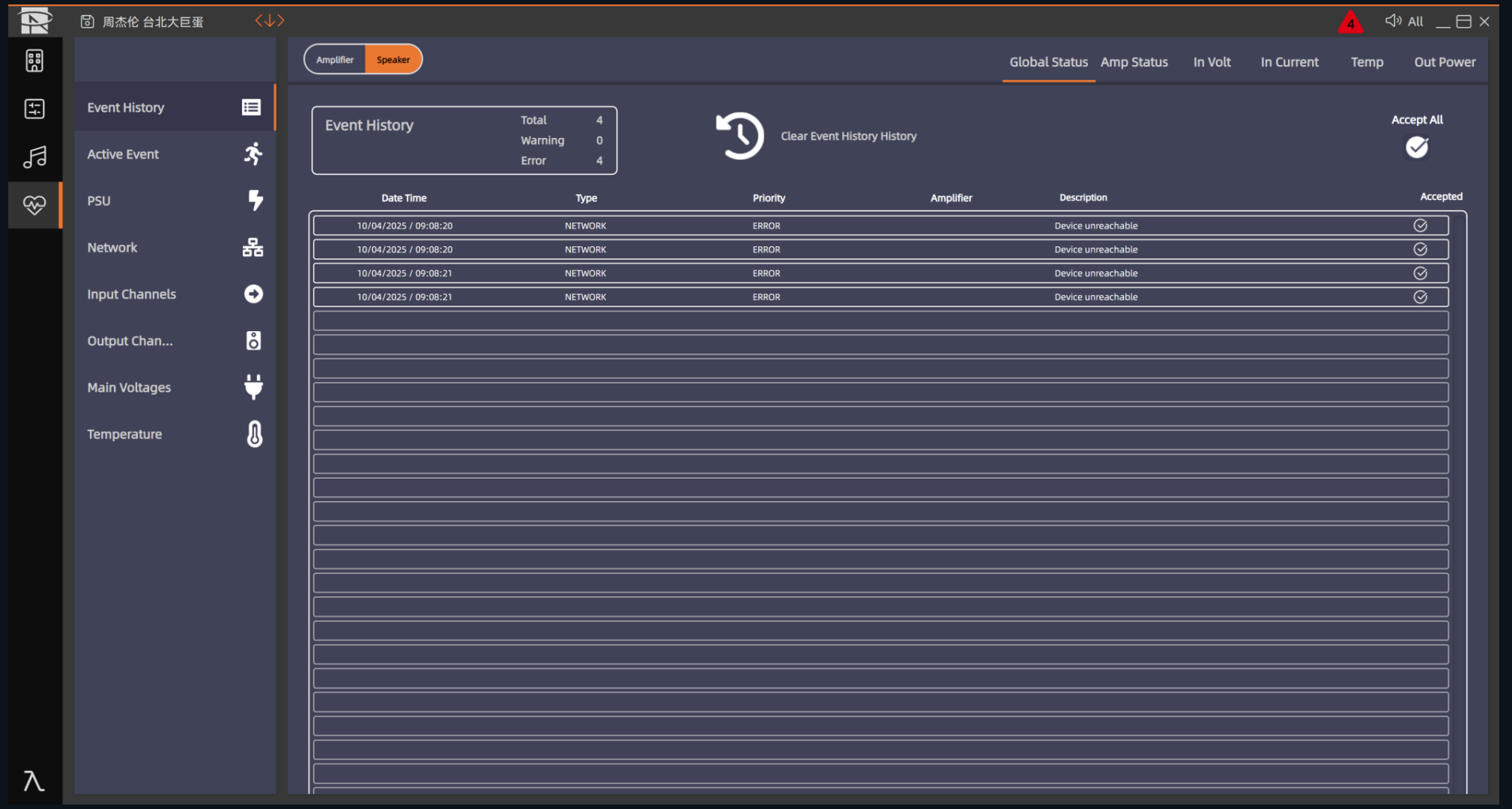
Turandot is synchronized while running Health status monitoring and other functions,
closed-loop management of design, tuning and monitoring.



Simulation Mode



Control Mode



Health Monitoring Report In Control Mode

Industry-Leading, Independently Developed AUTO FIR Exclusive Acoustic Optimization

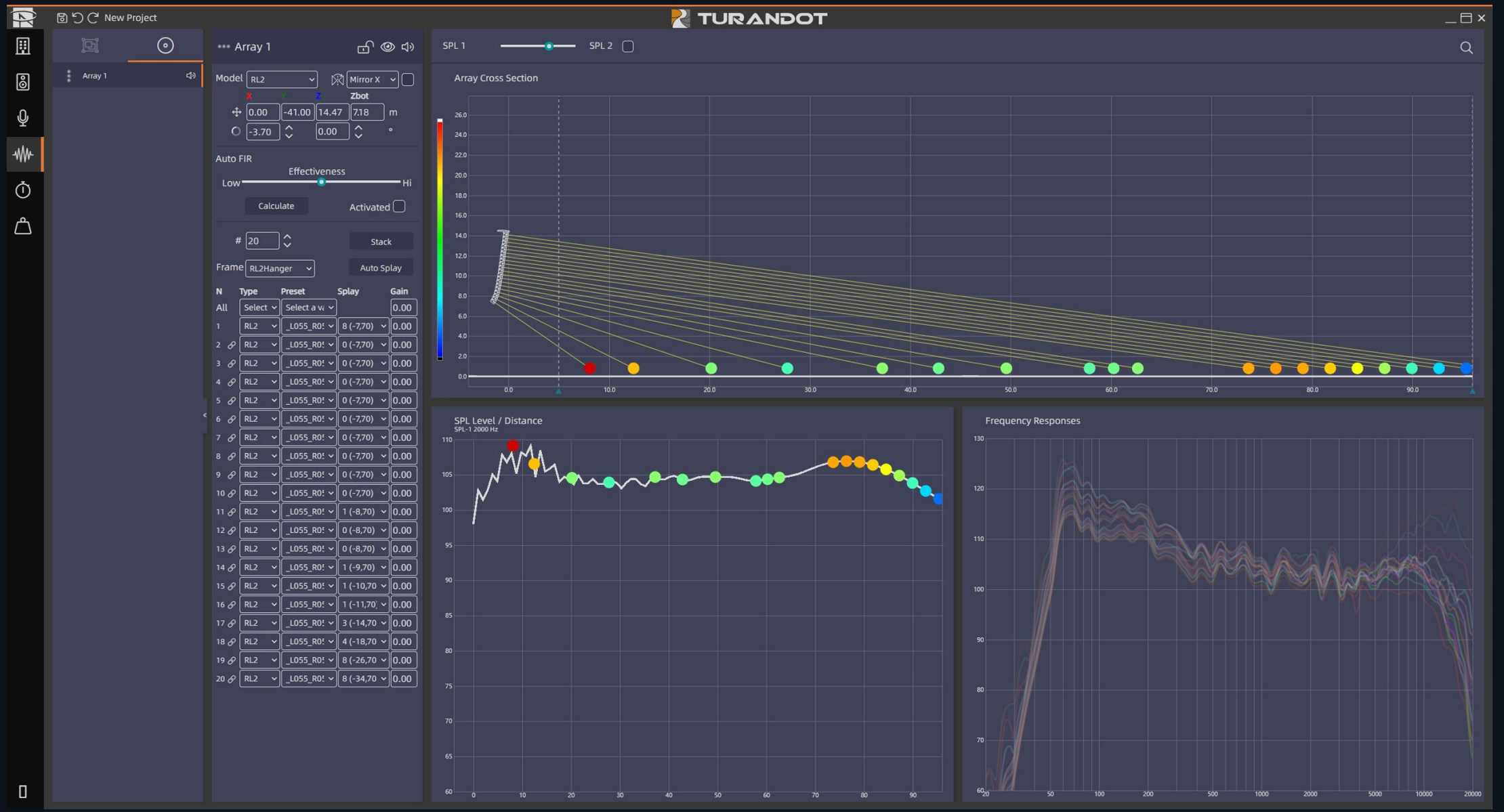
What is AUTO FIR

AUTO FIR (Adaptive Line Array Acoustic Field Optimization Technology) is a TURANDOT's unique precision filtering algorithm.

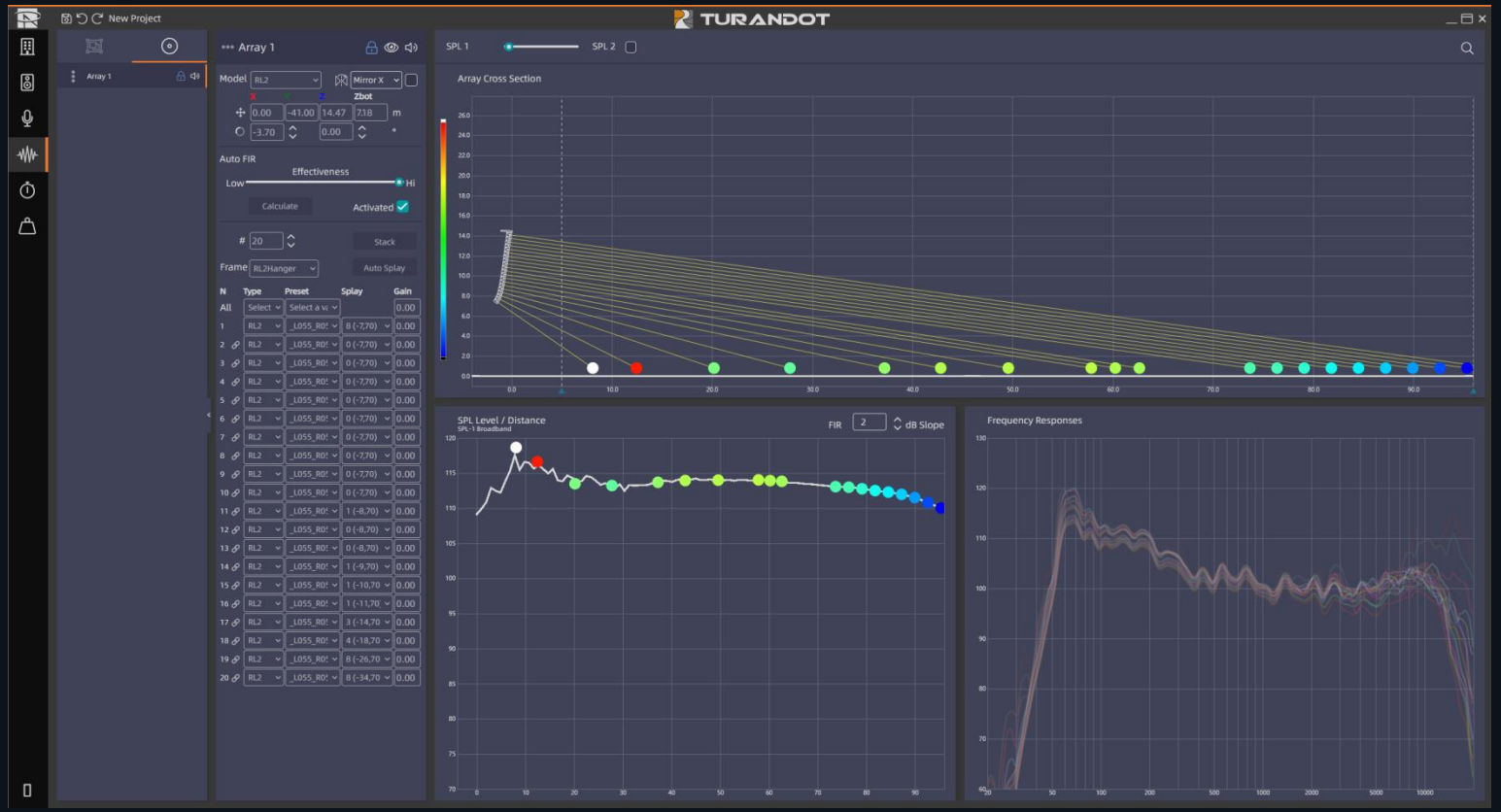
When Line Array systems are deployed, there are significant differences in hearing perceptions at different positions.
AUTO FIR independently calculates the FIR filters of each speaker to balance the hearing perceptions of the front and rear areas, similar sound pressure, frequency, phase, overall listening experience, and controls the sound pressure attenuation

Advantages of AUTO FIR

- Closely Matched Sound Pressure
- Closely Matched Frequency
- Closely Matched Phases
- Closely Matched Hearing Perceptions
- Flexible customization

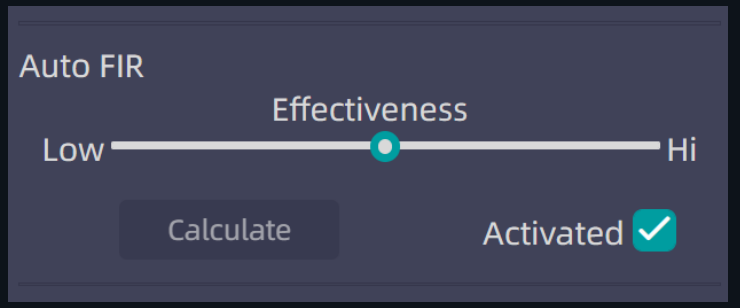


The image shows an example of a created RL2 line array with the speaker cabinet spacing set and the AUTO FIR not calculated or activated.



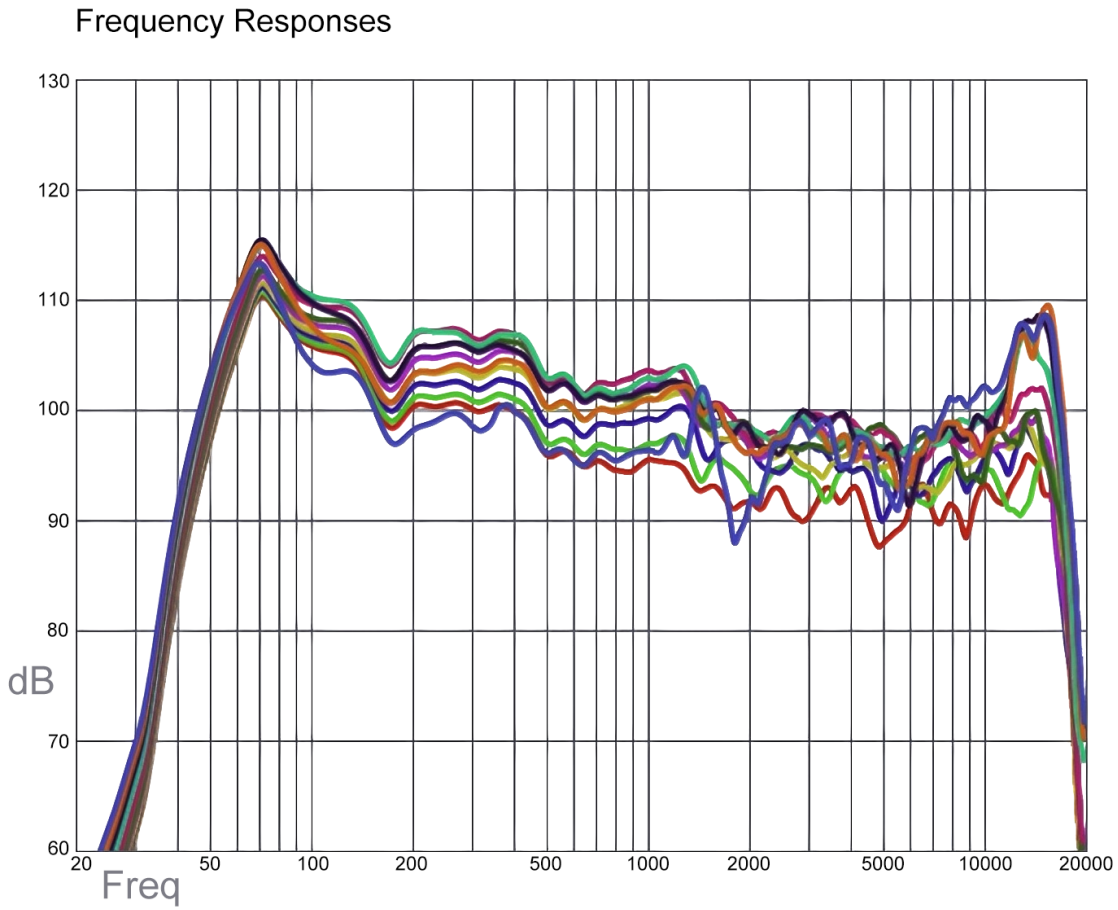
Decibel slope

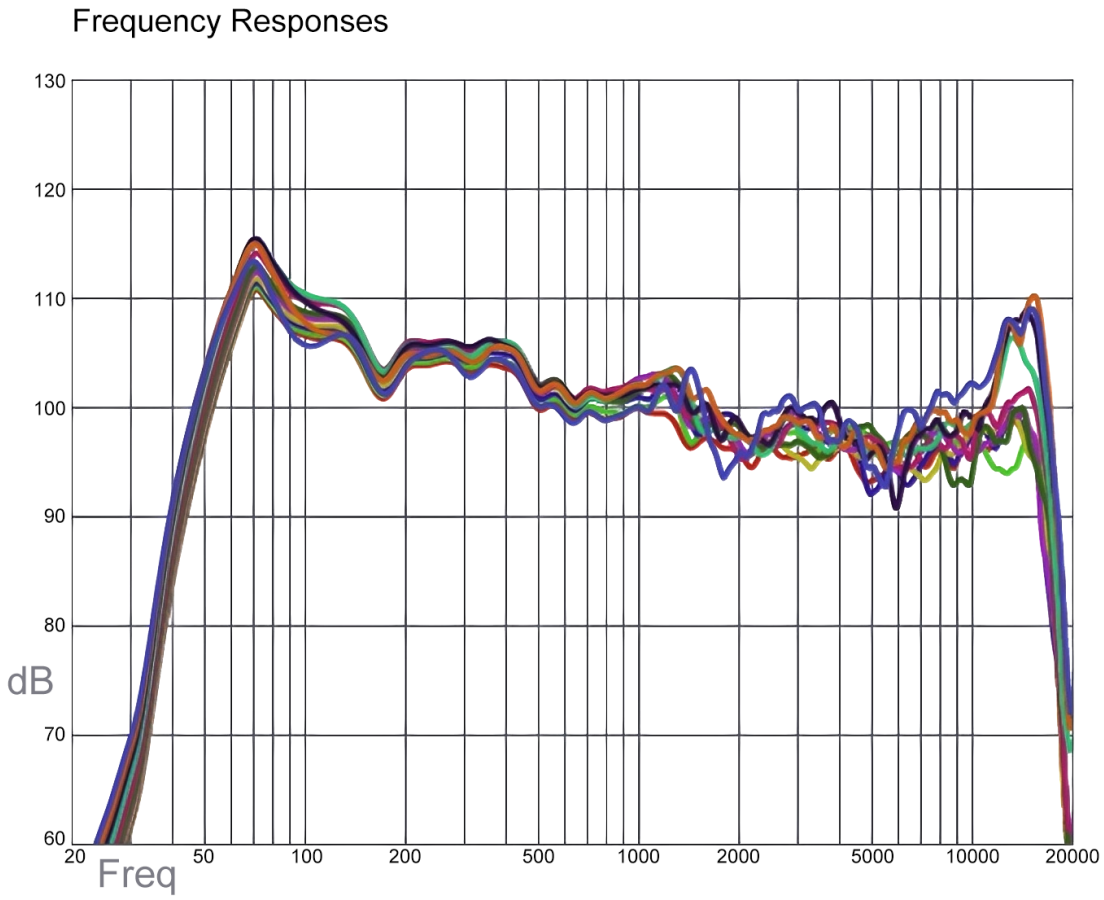
The user can set the decibel slope to control loudness attenuation, and adjust the Effectiveness slider to adjust the target curve compliance to achieve a balance between uniformity and output level.



Effectiveness

The automatic FIR "effectiveness" adjustment mechanism dynamically balances acoustic optimization and system energy efficiency to achieve adaptive scene control. The continuously adjustable parametric design allows an inverse relationship between the uniformity of the sound field and the output power to be established through the quantization control interface.





AUTO FIR

(Adaptive Line Array Acoustic Field Optimization Technology)

Illustrated is an example of different attenuation targets that use a medium attenuation effect. The image on the left shows the target attenuation of 12 decibels, while the image on the right shows the target attenuation as:

2 dB case. As distance increases, the sound pressure level (SPL) drops less, resulting in a better experience.

Listeners in different locations of the soundfield have the same hearing perception with each other.

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03

Acoustic Simulation

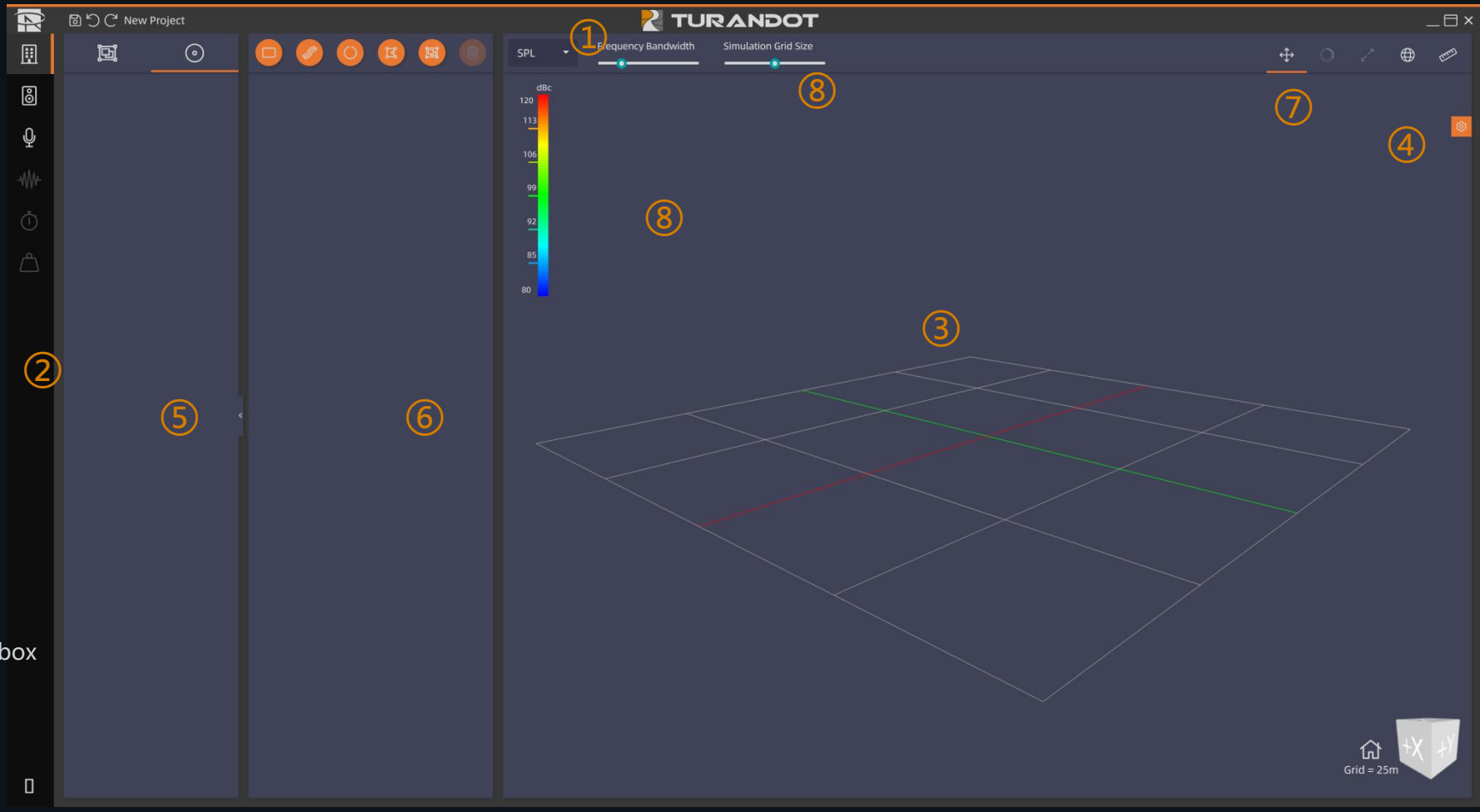
Basic Information

The interface of the simulation mode consists of three panels each with its own toolbar:

-3D workspace panel

-Toolbar panel

-Settings panel



① Main Toolbar

② Work selectors tabs

③ Workspace

④ Tools/Report settings

⑤ Surface, Source or Microphone list panel

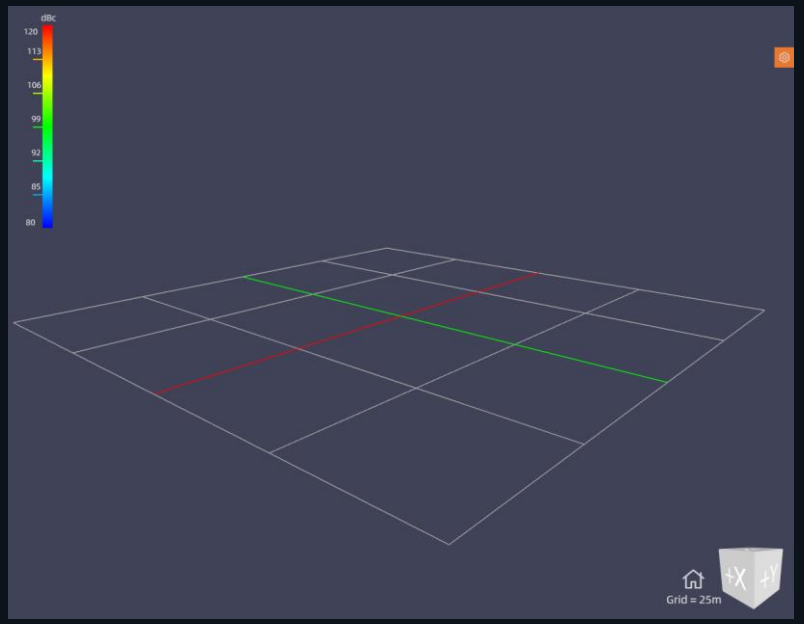
⑥ Property and Editing panel

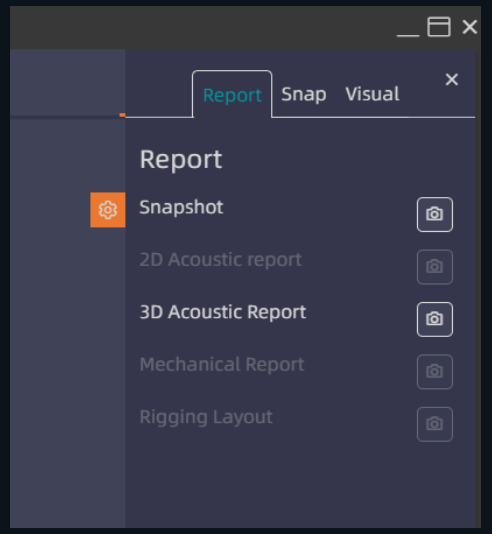
⑦ Object movement and dimensional modifier toolbox

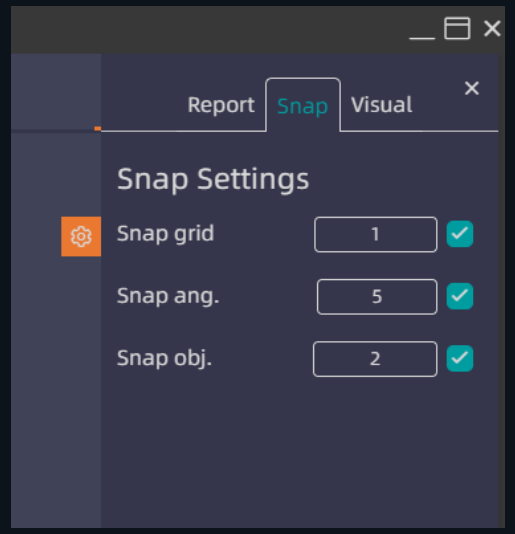
⑧ SPL maps functions

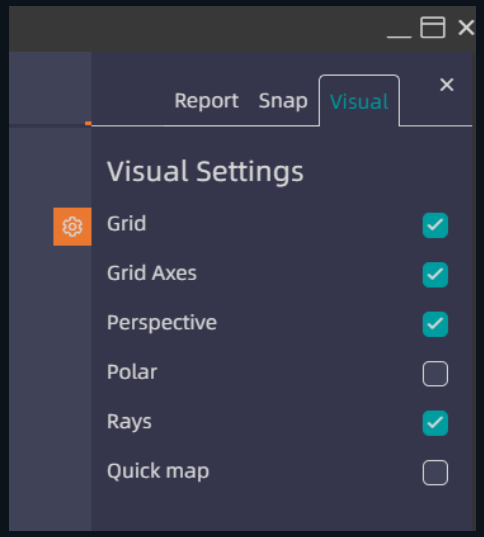
Workspaces

Work Reports/Settings

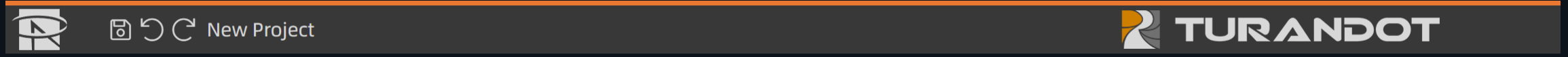




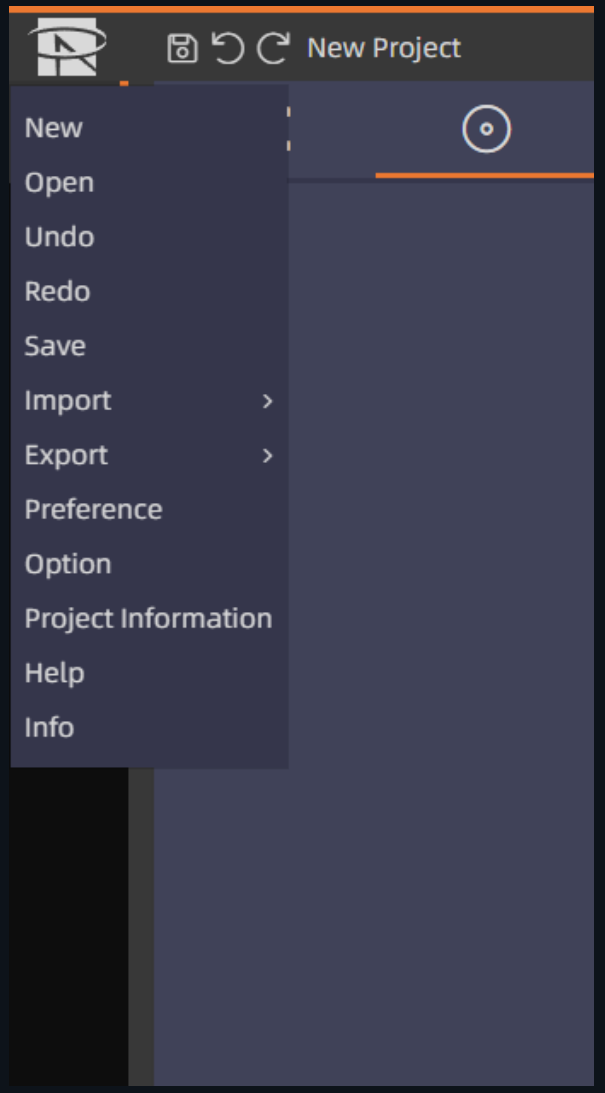


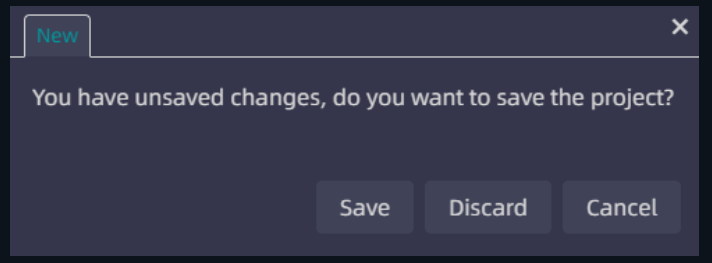


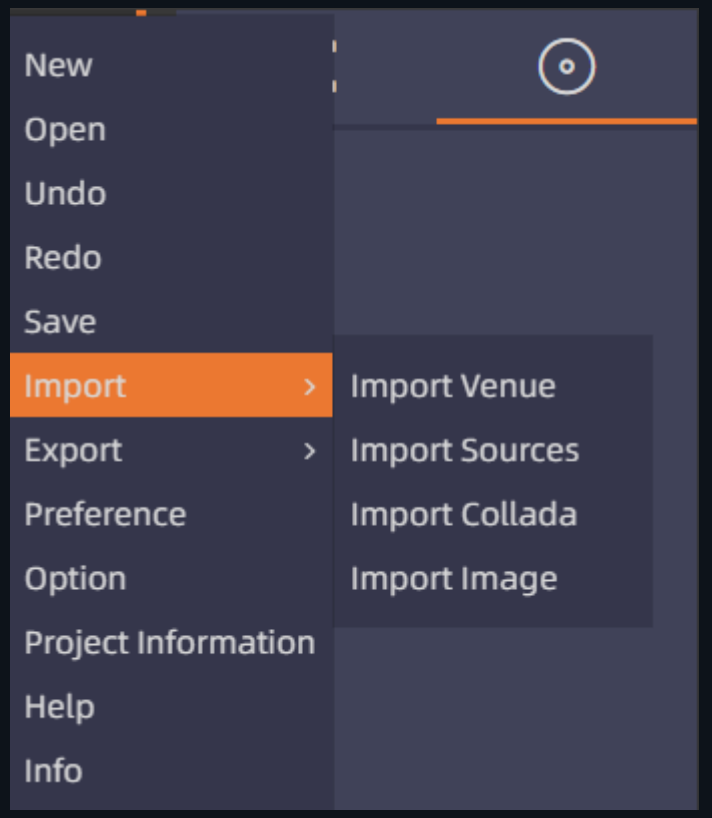
Main toolbar

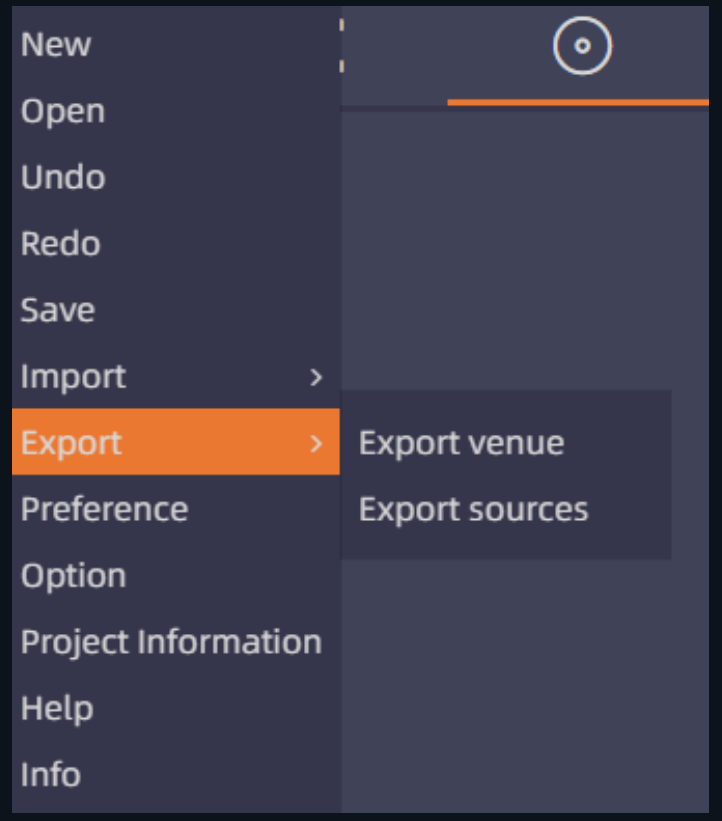


Menus


New Project
New
Open
Undo
Redo
Save
Import
Export
Preference
Option
Project Information
Help
Info

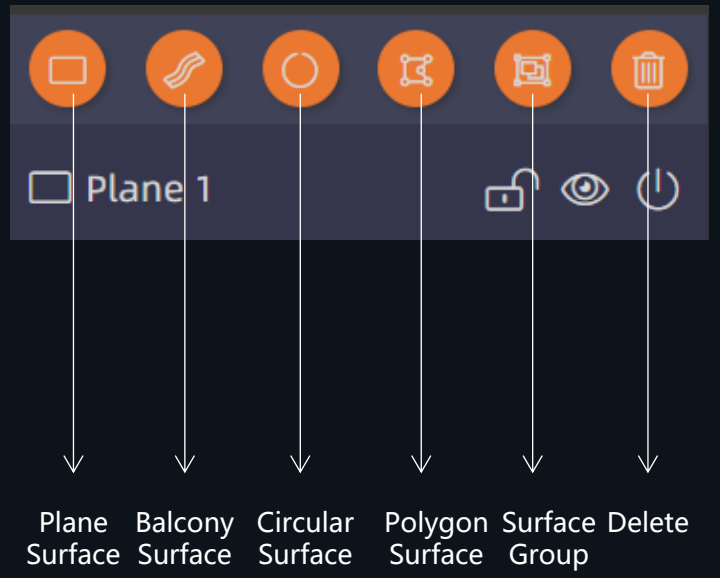

New
You have unsaved changes, do you want to save the project?
Save
Discard
Cancel

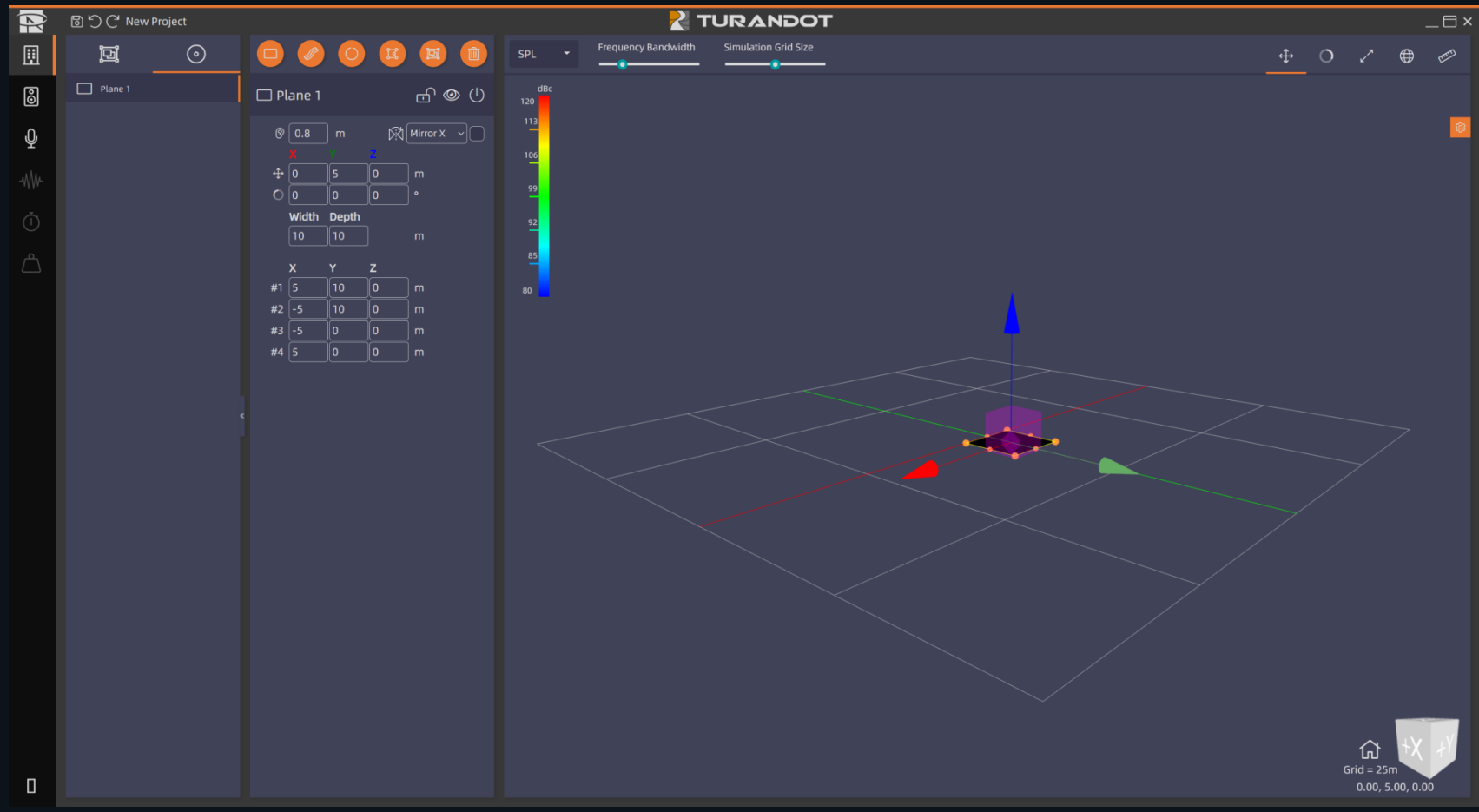

New
Open
Undo
Redo
Save
Import
Export
Preference
Option
Project Information
Help
Info
Import Venue
Import Sources
Import Collada
Import Image


New
Open
Undo
Redo
Save
Import
Export
Preference
Option
Project Information
Help
Info
Export venue
Export sources

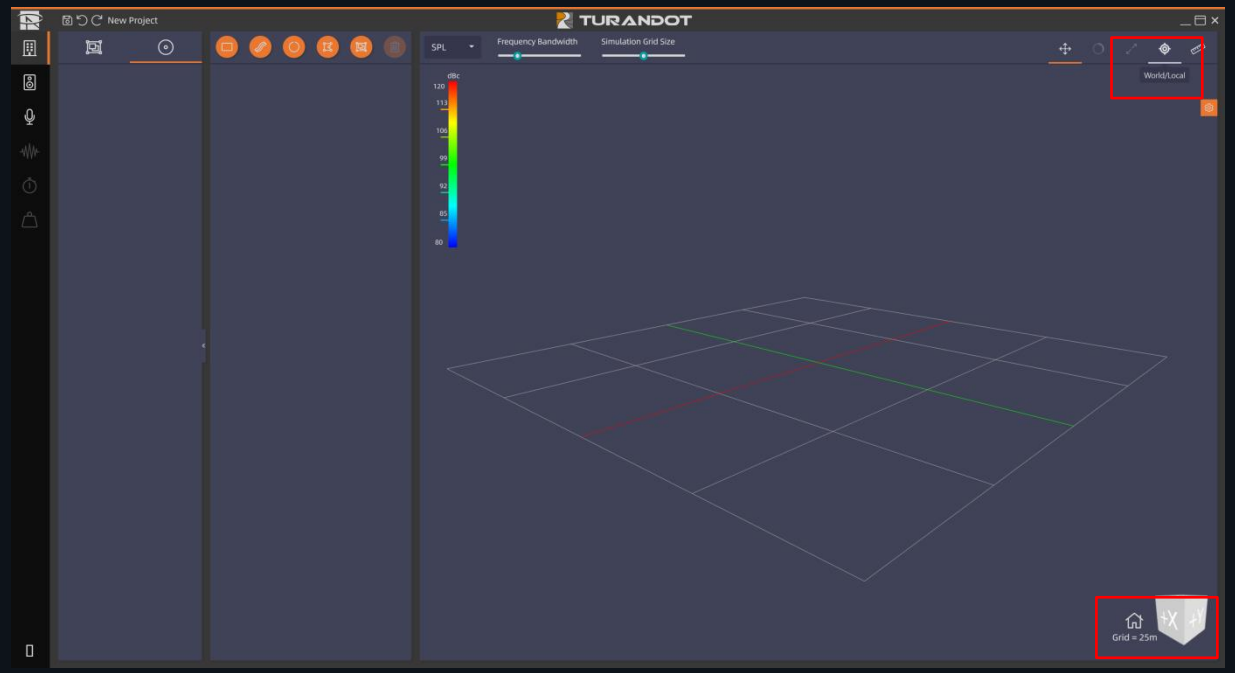
Space Design

The Work tab supports site structure drawing; ProvidING a variety of surface creation tools and supports 3D space direct editing and direct; Supports direct import of external professional modeling software drawings to reduce modeling time.

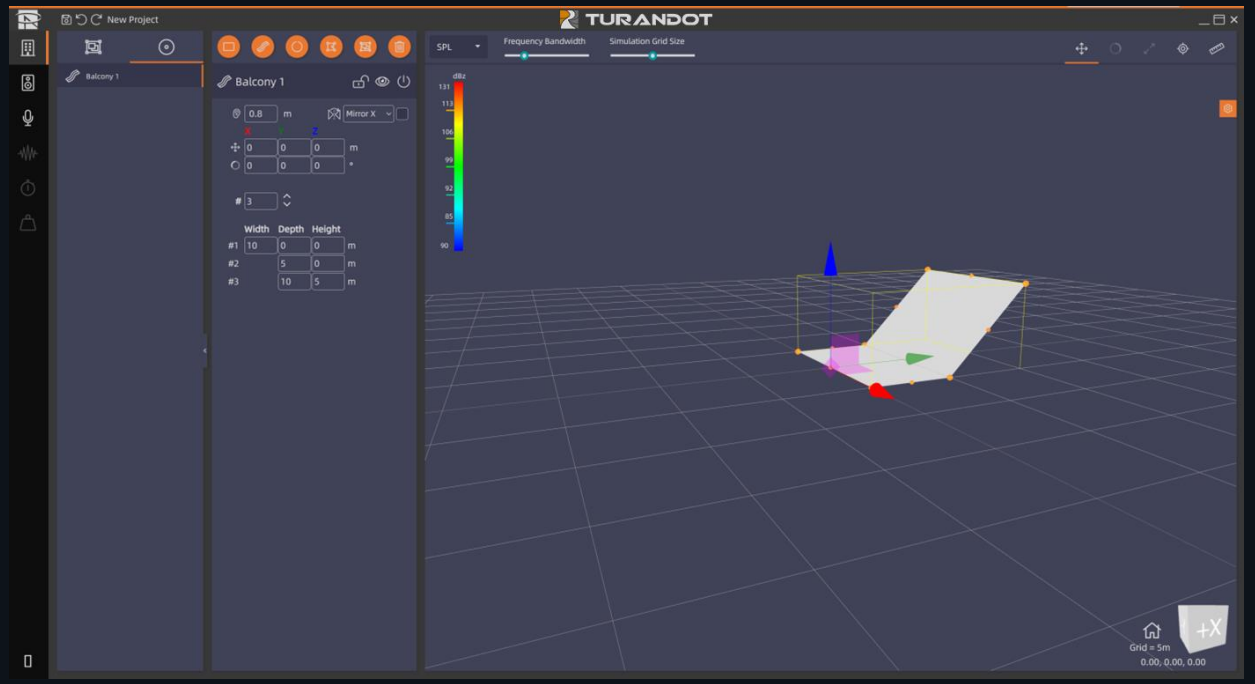




Coordinate

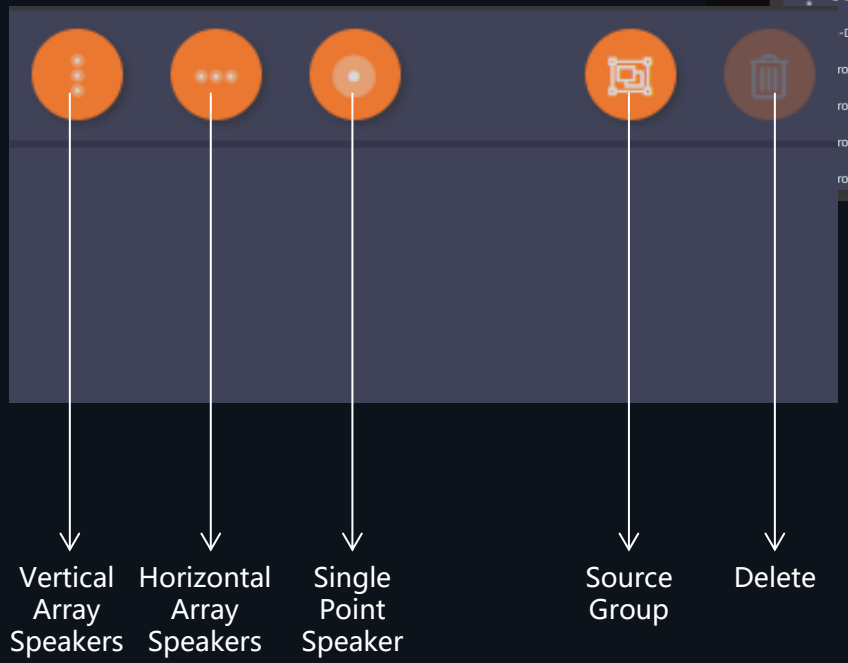


3D Modeling



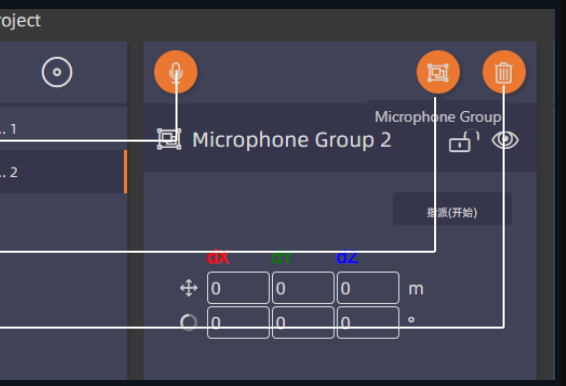
Sound Source Design

The work tab simulates the site speaker system. A variety of audio source creation tools are provided,
and supports the addition and editing of audio sources/groups in 3D space, as well as delay and frequency response analysis.



Microphone Placement Design

Work tab supports inserting a virtual microphone for audio system tuning; It provides a virtual microphone creation tool and support for 3D space editing. The virtual microphone can be used to measure the position of the sound source and acoustic characteristics, while the software calculates the frequency response and phase (with the origin in the center).



Optimization

The work tab supports the editing and optimization of the properties of the inserted speaker.

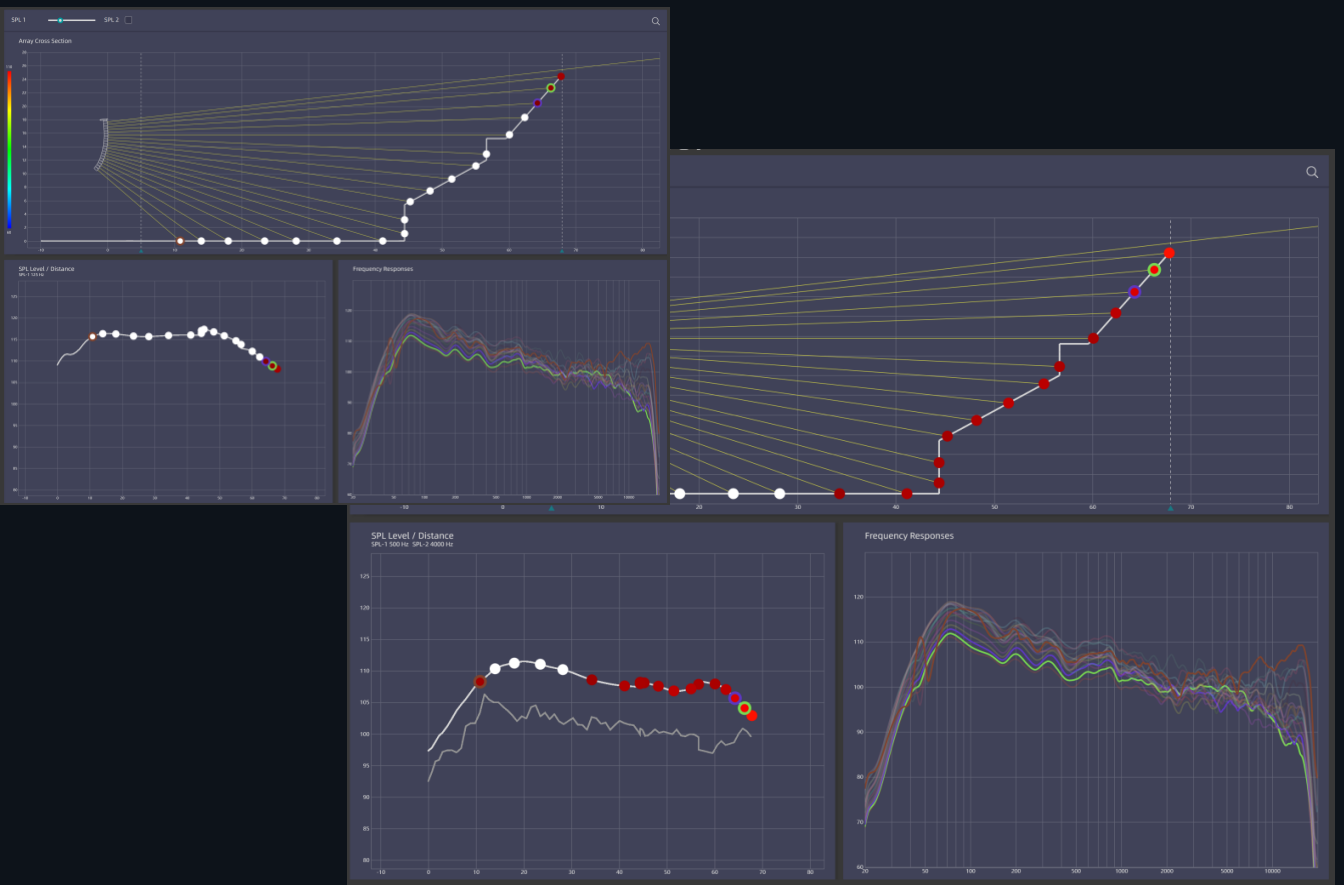
The list and properties panels follow the source design tab, and the workspace integrates charts to support editing sound sources and optimizing responses.

Visualization Of Sound Pressure Distribution

SPL volume level/distance: The sound pressure distribution of the field is presented as a topographic map of color temperature difference. The center of the energy field (white) decreases towards the edges.

Supporting:

- Single custom sound pressure value
- Intuitive display of high, medium and low frequency energy distribution.
- OCT function analyzes the sound field distribution across sound layers.



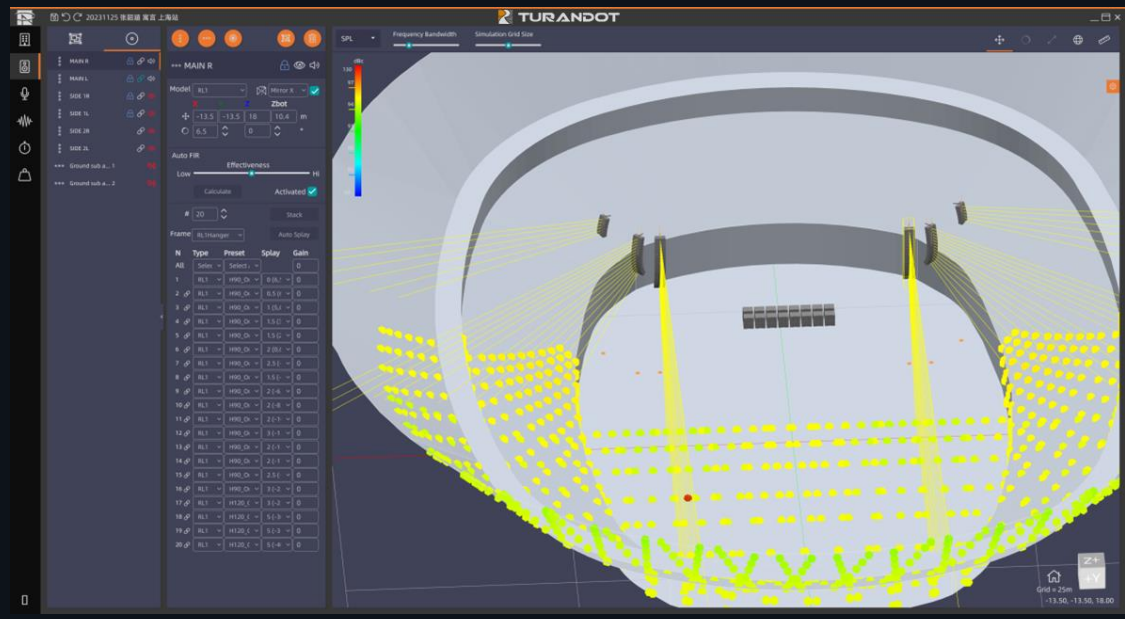
Speaker Sound Field Simulation

Simulates the sound energy effect of the speakers on site.including:

- Vertical height,

-Group setting

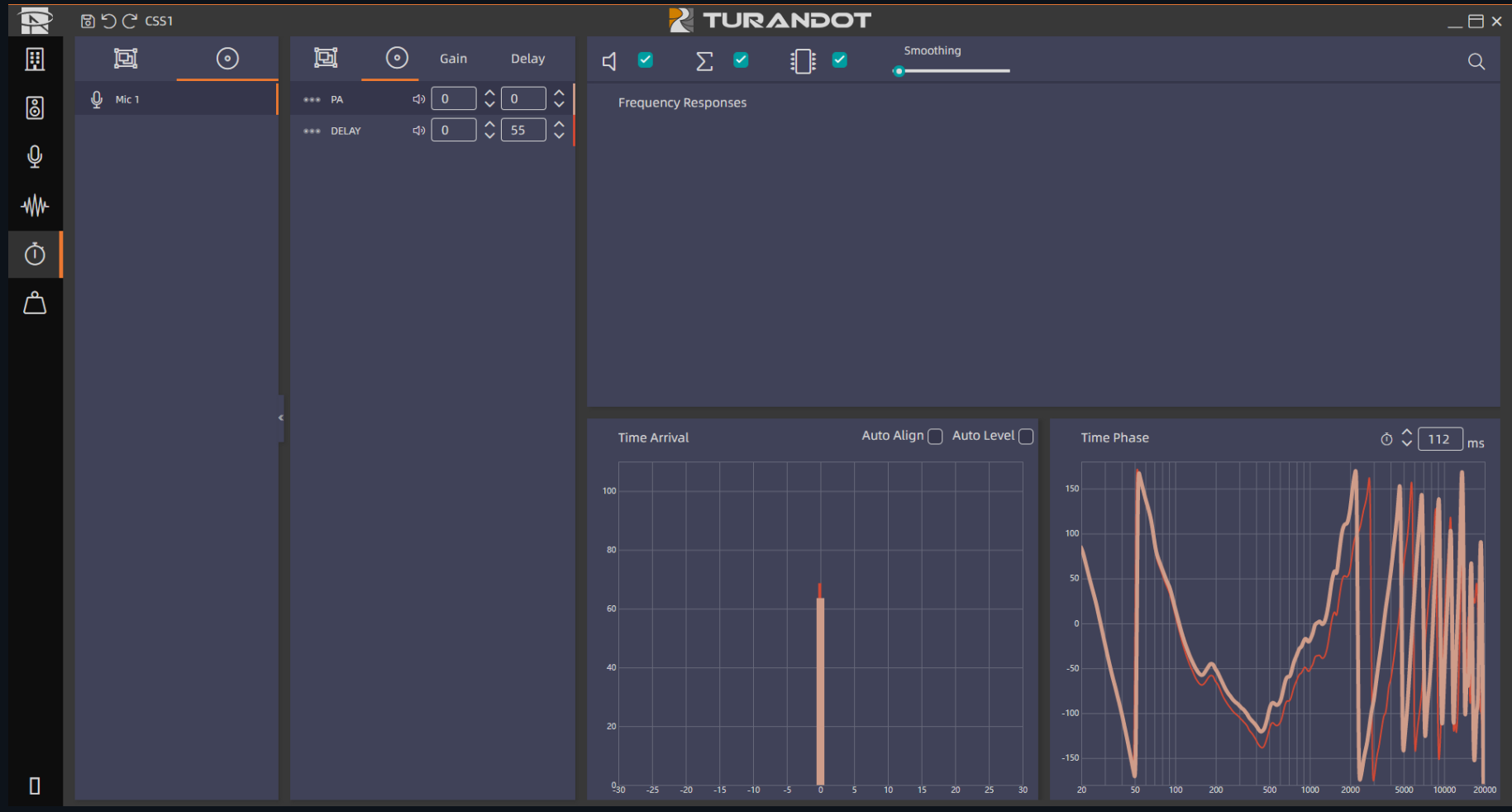
-Tilt shift adjustments.



Calibration of Delay and Gain

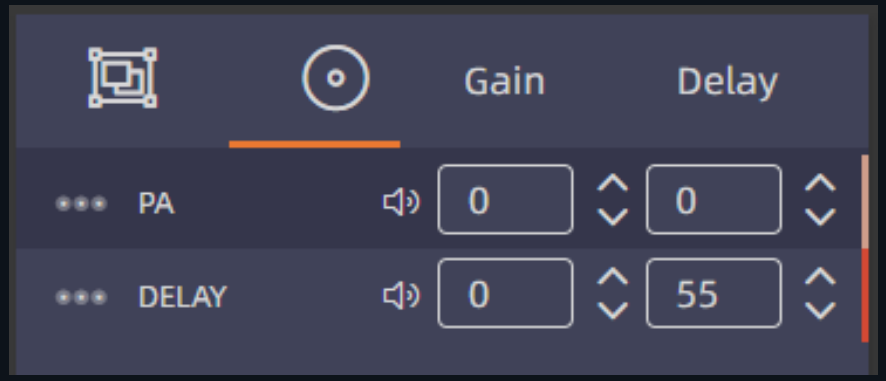
When multiple speakers or arrays are inserted into a project engineers can use this working tab to align all speakers as well as verify and optimize the level, time, and phase alignment of the audio system.

Each window has a variety of tools and options to for virtual microphones. The microphones created in the project are used as inputs to derive the results of the analysis. The Alignment List panel functions the same as the panel in the Microphone Design tab, containing a list of microphones and microphone groups that have been created.



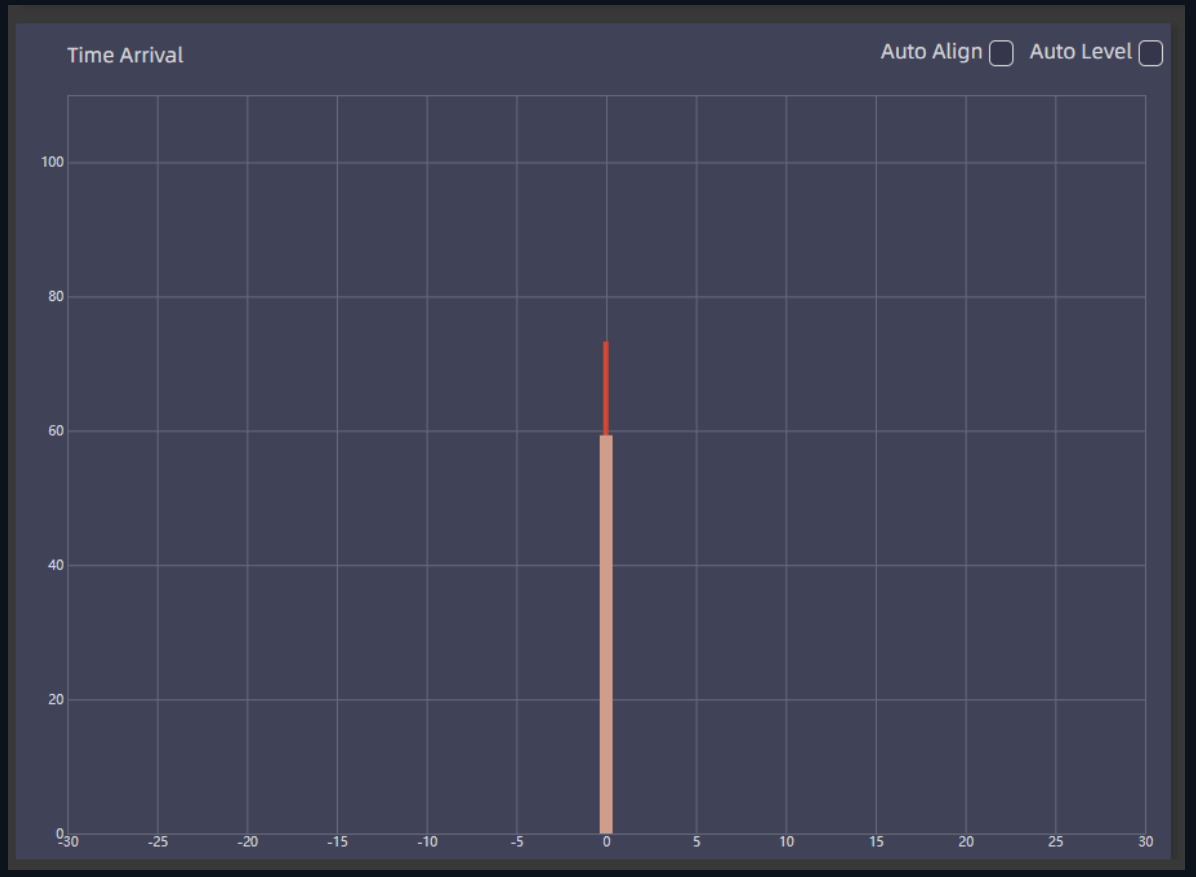
Time And Frequency Characteristics

Under the multi-speaker/array project, the Work tab supports speaker alignment, audio level, time, and phase verification optimization.
Integrate tool options in each window to generate analysis results based on the virtual microphone position of the project.
The Alignment List panel functions the same as the Microphone Design tab, integrating the microphone and group lists.



Sound Controls

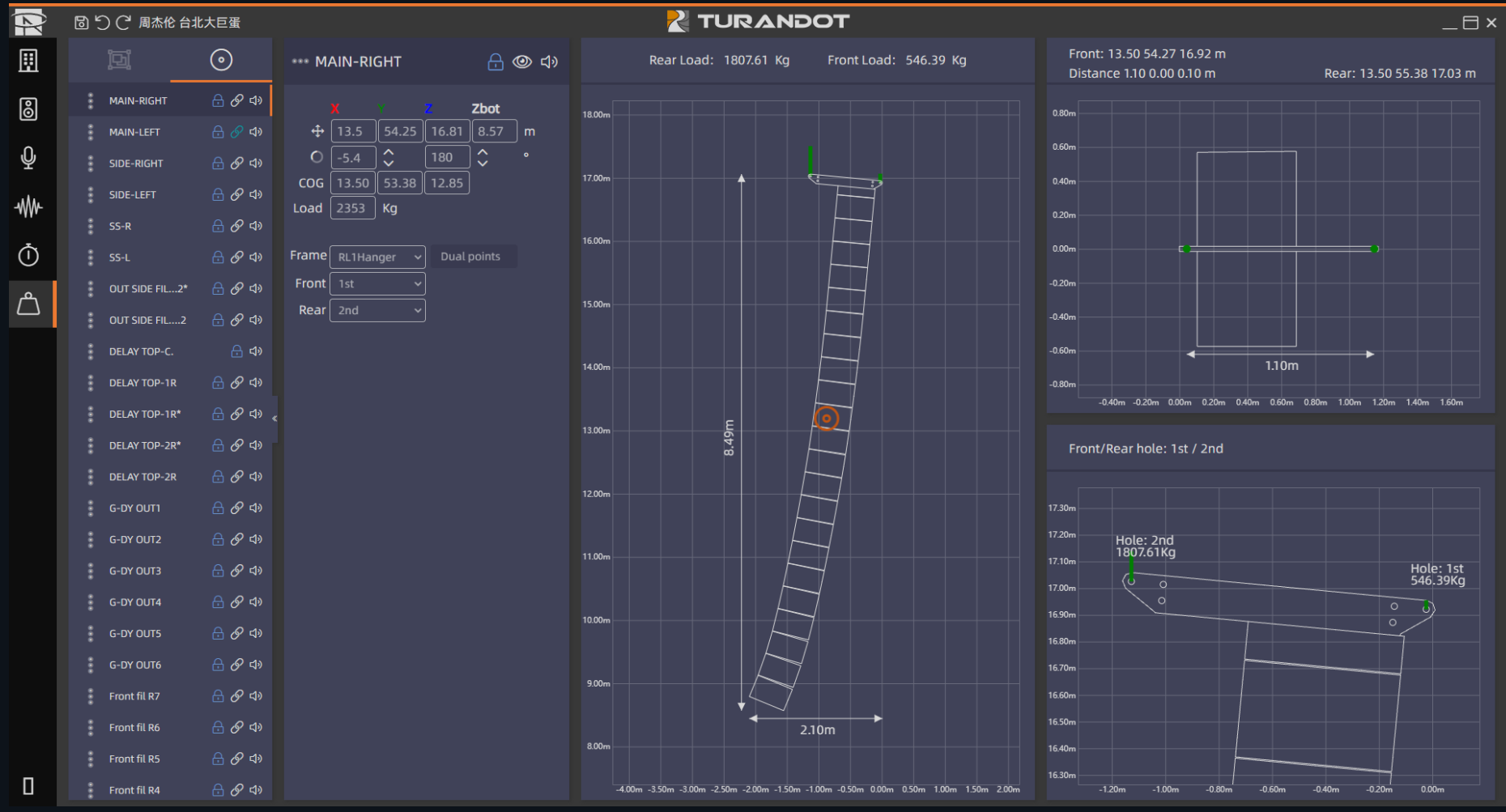
Select the auto-alignment time to automatically align the volume.



Distribution OF Hanging Points

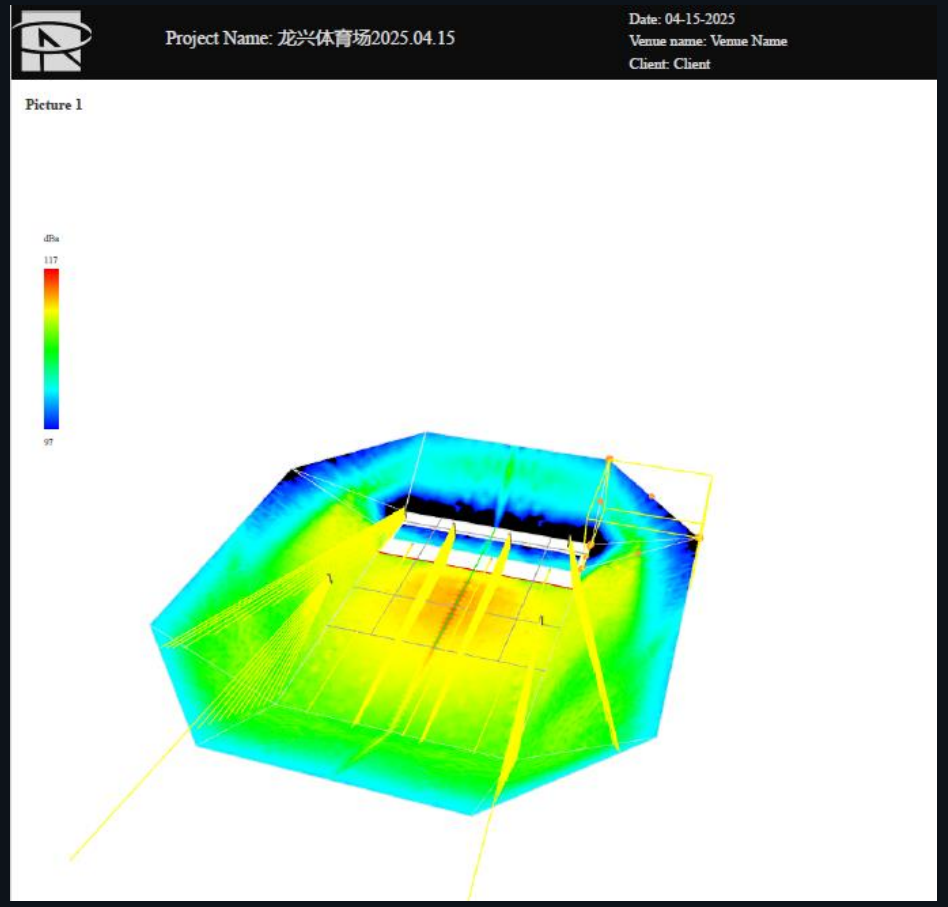
The hanging point distribution tab centrally manages the hanging point information and supports editing source attributes. Displays mechanical/static details of selected sound sources, with editable arrangement of sound source attributes.

Supports viewing the length, width, height and angle of the speaker, automatically calculates and optimizes the load of the front and rear lifting points based on the load-bearing capacity of the venue, and simultaneously displays the center of gravity of the entire string of speakers.

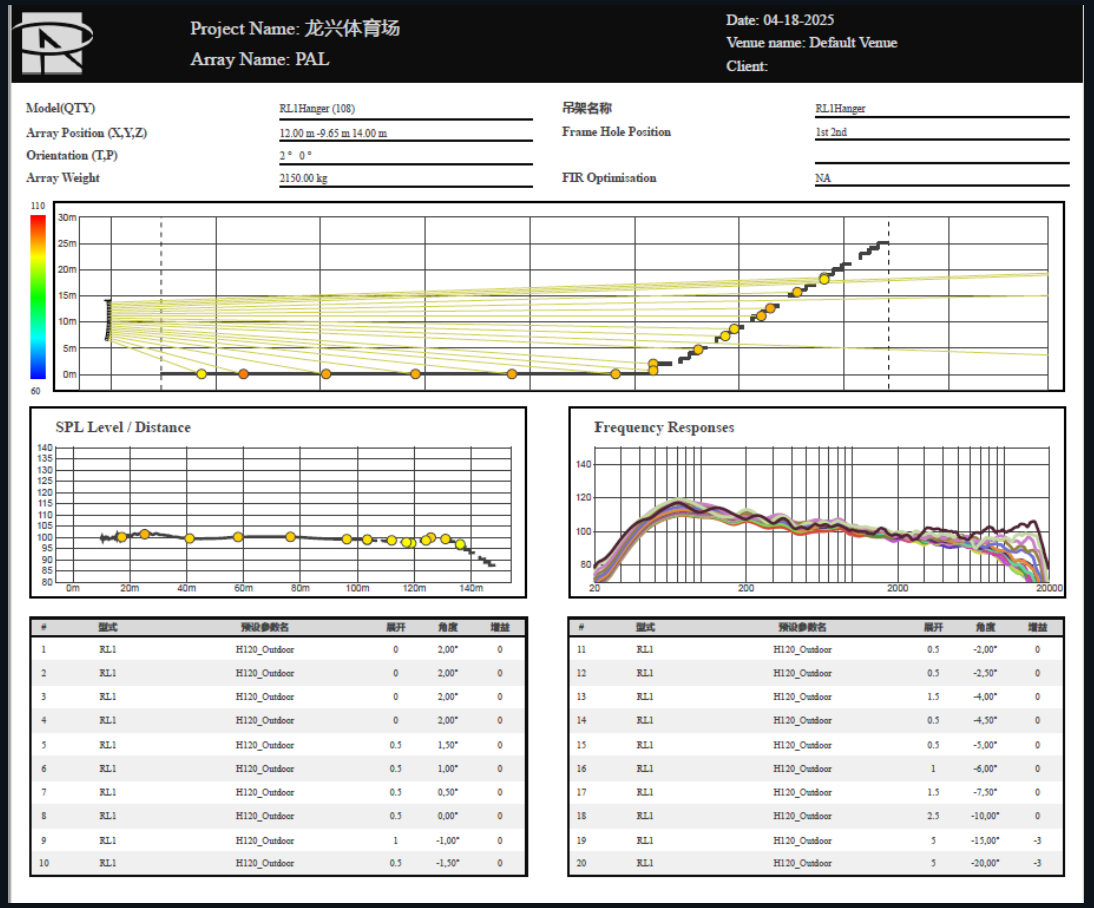


Audio System Acoustic Reports

3D Sound Field Report



Planar Sound Field Report

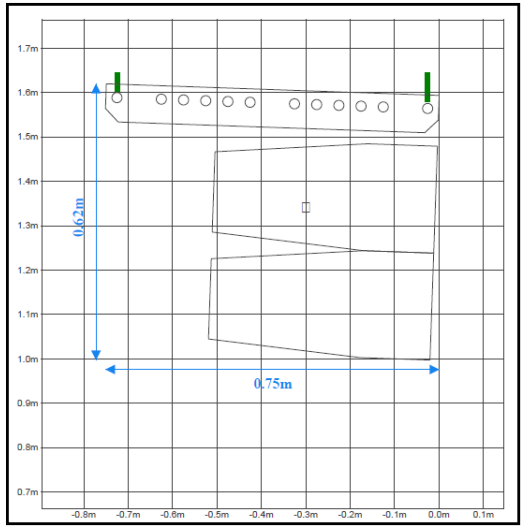


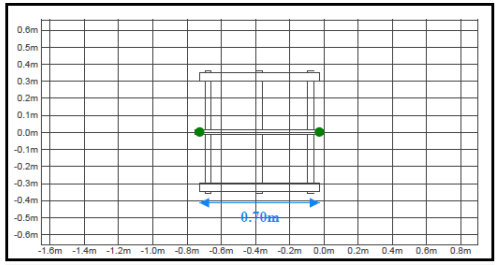
Mechanical Structure Report

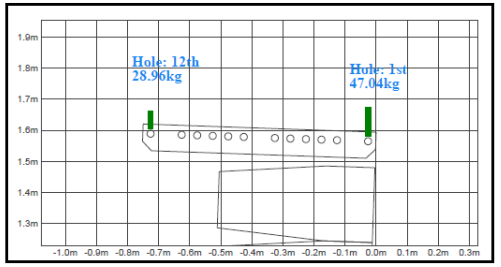
Project Name: 龙兴体育场2025.04.18.222
Array Name: IN FILL

Date: 04-18-2025
Venue name: Default Venue
Client:

Model(QTY)	RL0.5 (4)	吊架名称	RL0.5Hanger
Array Position (X,Y,Z)	5.00 m -5.75 m 1.55 m	Front Point X,Y,Z	m m m
Orientation (T,P)	-2 ° 0 °	Rear Point X,Y,Z	m m m
Array Weight	75 kg	Load Front, Rear	28.96 kg 47.04 kg







#	型式	预设参数名	展开	角度	增益
1	RL0.5	RL0.5_Standard	0	----	0

#	型式	预设参数名	展开	角度	增益
2	RL0.5	RL0.5_Standard	0	----	0

Hanging Point Distribution Report

Project Name: 龙兴体育场2025.04.18.222

Date: 04-18-2025
Venue name: Default Venue
Client:

Name	Pick Point	X m	Y m	Z m	孔位 #	Load kg	Z(底部) m
IN FILL						76.00	1
	前吊点位置	5.00	-5.77	1.58	1st		
	后吊点位置	5.00	-6.47	1.60	2dn	28.96	
	距离	0.00	0.70	0.02			

Name	Pick Point	X m	Y m	Z m	孔位 #	Load kg	Z(底部) m
IN FILL*						76.00	1
	前吊点位置	-5.00	-5.77	1.58	1st		
	后吊点位置	-5.00	-6.47	1.60	2dn	28.96	
	距离	0.00	0.70	0.02			

Name	Pick Point	X m	Y m	Z m	孔位 #	Load kg	Z(底部) m
OUT FILL						132.00	1.01
	前吊点位置	30.00	-5.77	2.07	1st		
	后吊点位置	30.00	-6.47	2.09	2dn	49.26	
	距离	0.00	0.70	0.02			

Name	Pick Point	X m	Y m	Z m	孔位 #	Load kg	Z(底部) m
PAL						2150.00	6.33
	前吊点位置	12.00	-9.69	14.11	1st		
	后吊点位置	12.00	-10.80	14.07	2nd	655.21	
	距离	0.00	1.11	0.04			

Name	Pick Point	X m	Y m	Z m	孔位 #	Load kg	Z(底部) m
PAR						2150.00	6.33
	前吊点位置	-12.00	-9.69	14.11	1st		
	后吊点位置	-12.00	-10.80	14.07	2nd	655.21	
	距离	0.00	1.11	0.04			

Name	Pick Point	X m	Y m	Z m	孔位 #	Load kg	Z(底部) m
SF-L						1742.00	7.75
	前吊点位置	36.50	-14.69	14.10	1st		
	后吊点位置	36.50	-15.80	14.00	2nd	267.48	
	距离	0.00	1.10	0.11			

REYN AUDIO

04

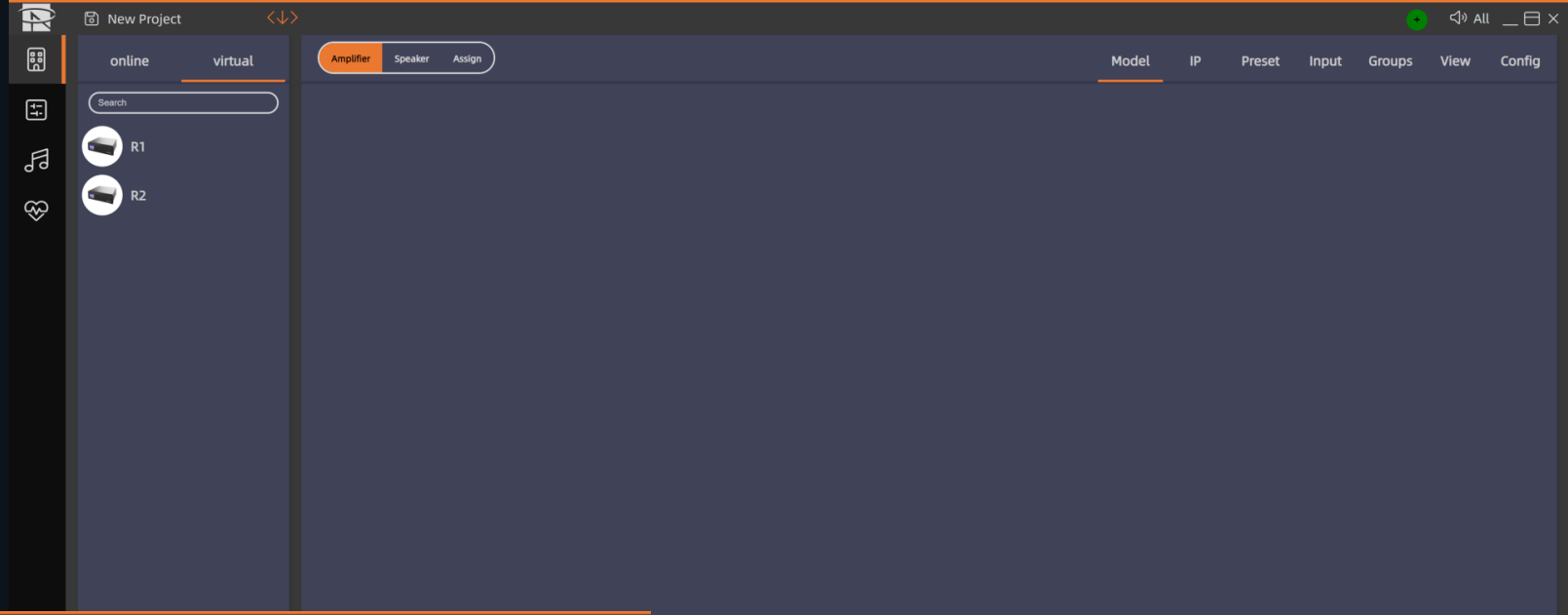
Control System

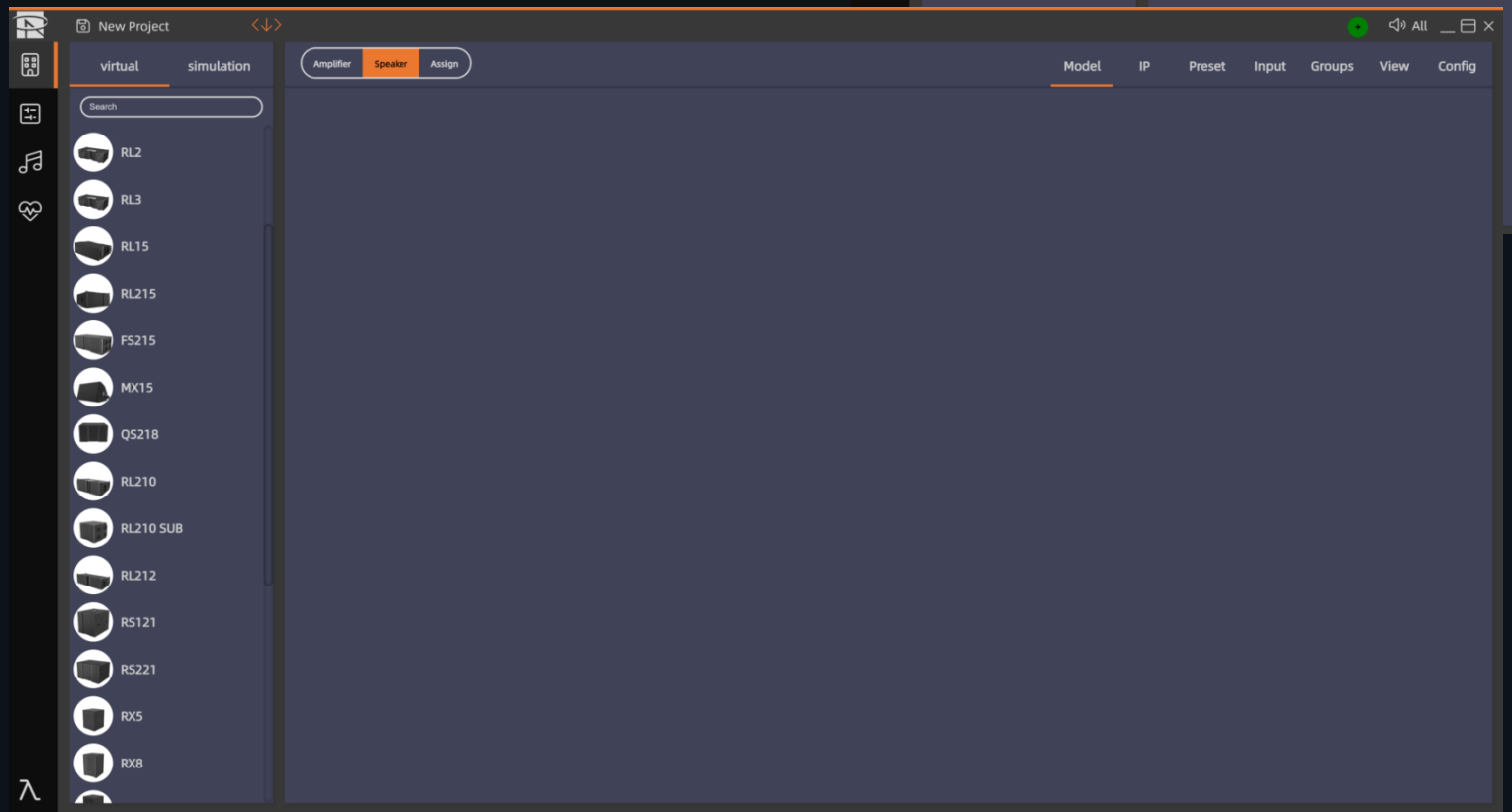
Advantages of the control system

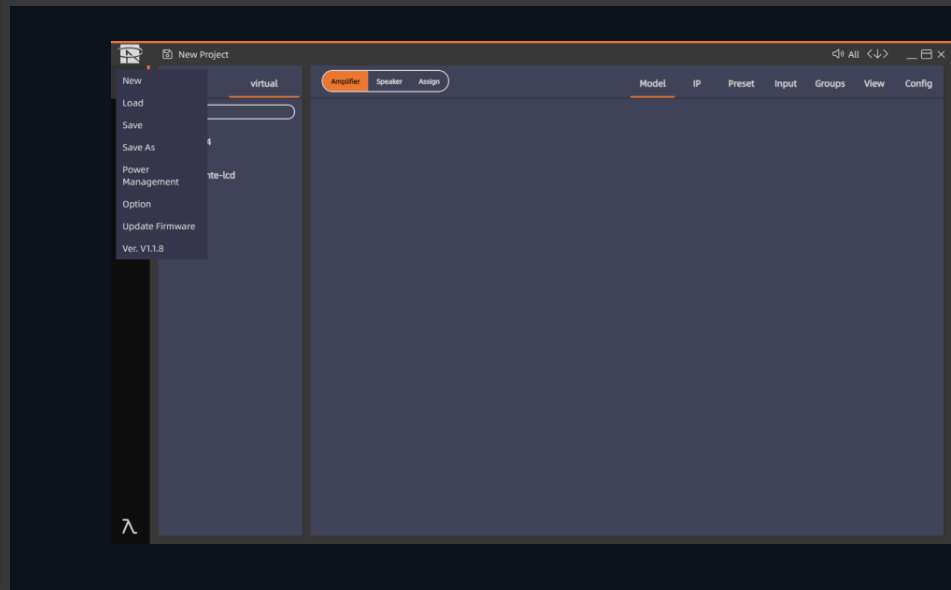
- Straightforward
- Flexible
- Fast
- Prefabricated

Basic Information

In control mode the software has the full range of REYN AUDIO speaker/amplifier models and corresponding preset parameters, which can be directly called without repeated configurations. Control mode supports one-click on/off of the power amplifier group and one-click update of the hardware program version.



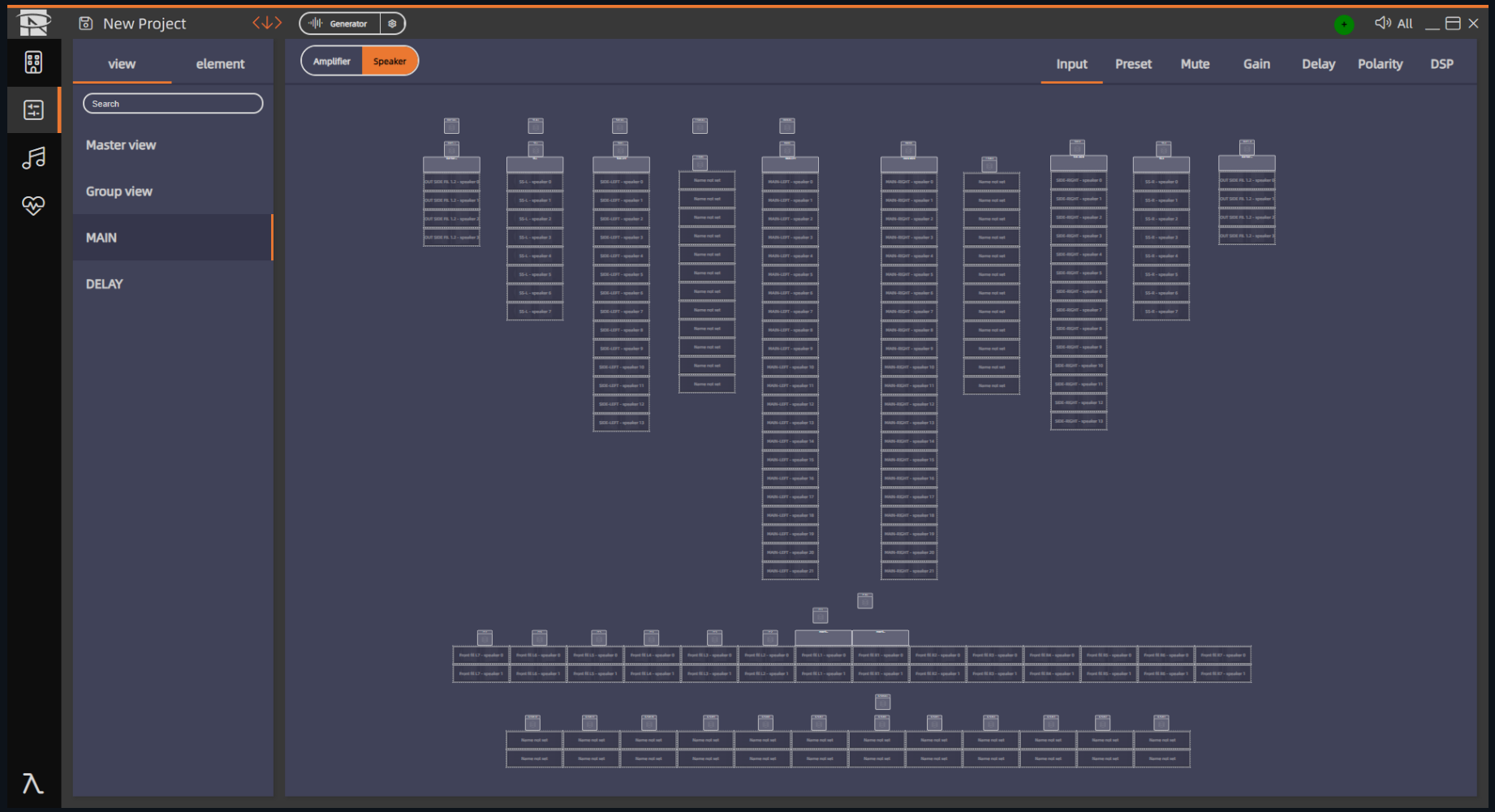




System Construct

Supports on-demand selection of equipment models and preset scenes.

- One-click import/synchronization of analog data
- Automatic generation of speaker models
- Quick and easy system setup.

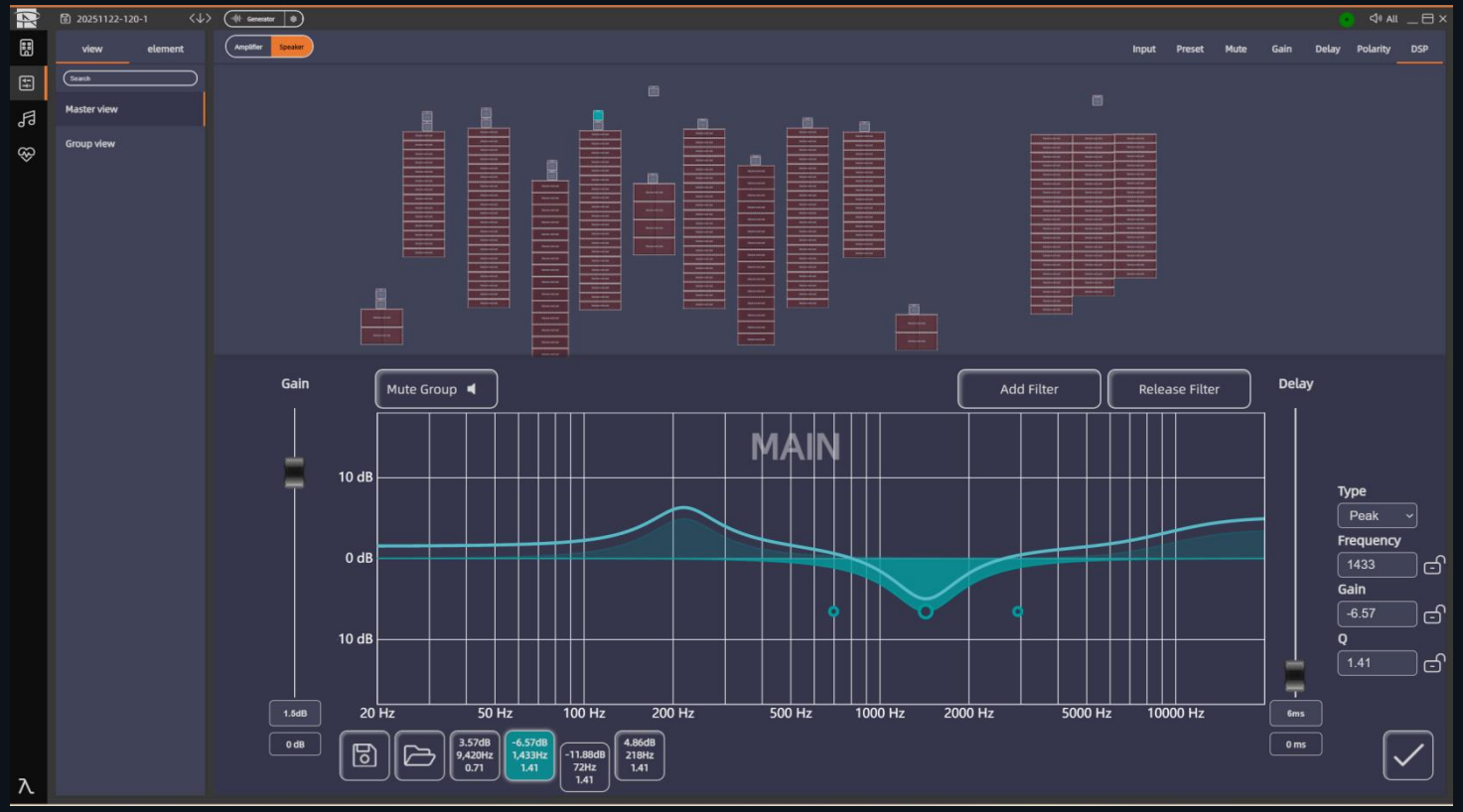


System Tuning

Software supports fine adjustments of Input, Preset, Mute, Gain, Delay, Polarity,
and DSP parameters to achieve precise control.

Arrangement And Tuning

Horizontal/vertical array arrangement, supports automatic tuning and alignment,
one-click switches speaker group presets, and adapts to different scenes.



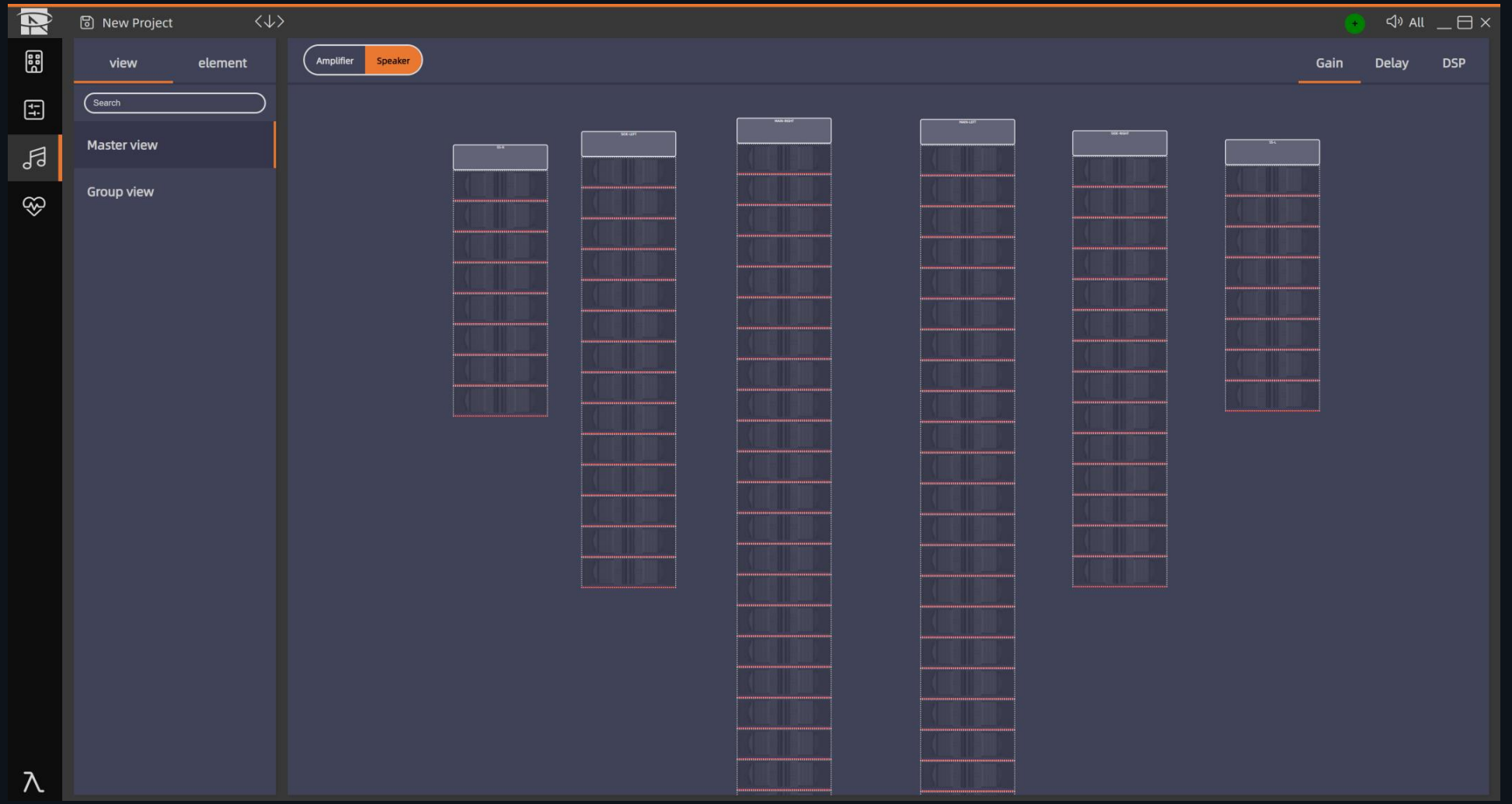
DSP core

Industry-leading ADI Audio DSP (ADSP-21569),
Enabling greater system expansion and detailed
data processing.

ADSP-21569

Sound Tuning

Dynamically track and monitor the clarity and uniformity of the sound, and accurately adjust the parameters according to the needs of the music to achieve a uniform sound field and ensure the consistency of sound in all areas.



System Health Monitoring

Intelligent monitoring tracks the operation status of the equipments in real time. Errors triggers the early warning mechanism for instant alarm, and supports the synchronous generation of digital files for the operation and use of the equipment in the entire cycle.

Summary Report Of Error Status

Event History

Active Events

Power Module Monitoring

PSU-Voltage-Power

Current

Temperature

Overload

Network Monitoring

Network Signal

Connection Status

Input Signal Monitoring

Input Channels

Signal Status

Output Signal Monitoring

Ouput Channels

Signal Status

Main Power Monitoring

Main Power Voltages Status

Amplifier Temperature Monitoring

Amplifier Operating

Temperature Status

System Health Monitoring

REYN AUDIO