

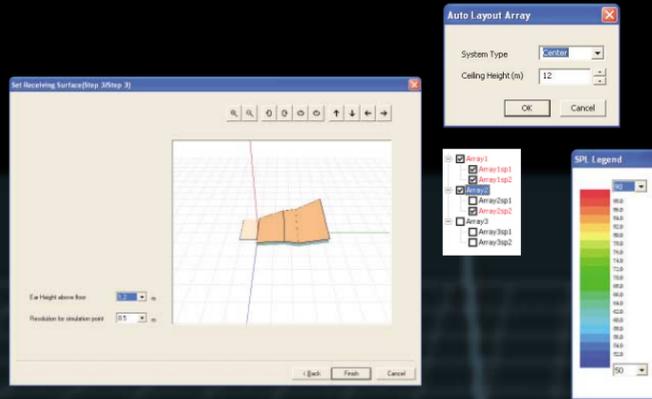


### Built-in auto features that are intelligent and convenient

The Y-S<sup>3</sup> is equipped with two powerful support features to construct the best sound system in minimal time. These features automatically compute the best settings for each provided condition with just a few easy steps. While more specific adjustments will be necessary when making the actual settings, these features enable you to construct a highly accurate system while minimizing time and effort needed for system design.

#### Auto Layout

By setting the shape, area, dimensions, and application of the venue for simulation, it automatically calculates the optimal speakers and arrangements.



#### Auto tuning function

This feature automatically sets the pan, tilt, spray angle, EQ, and gain for the selected speaker array. The speaker angle (pan, tilt, spray angle) is automatically set to average out the sound pressure level within the range covered by the array speakers.



# Yamaha Sound System Simulator

## Y-S<sup>3</sup>

*Yamaha Sound System Simulator is an innovative software program that offers a precise and easy-to-use simulation of sound pressure level distribution, frequency characteristics, and other attributes when installing speakers in any type of venue.*



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Printed in Japan

## Main Features:

- This acoustic simulation software combines the essential elements of Yamaha Professional Audio acoustic technology for all sound handled from input to output, including mixers, DSP, amps, speakers, and even the venue's design.
- The software provides superb accuracy and reliability thanks to the knowledge and experience of the Yamaha Center for Advanced Sound Technologies, which is at the forefront of the world's acoustic technology with its Active Field Control and Acoustic Modeling, and has employed its advanced acoustic technology in the acoustic design of many concert halls.
- With sophisticated graphic user interface and user-friendly settings wizard, simulation can be performed precisely and easily.
- You can easily set and change the venue shape, conditions, and other aspects with the wizard, and make graphical visualizations of sound pressure level distribution at receiving points, frequency characteristics graphs, and contour figures. Plus it provides auralization, which lets you hear the sound with your ears using any sound source for even better sensory perceptible monitoring.
- The built-in Yamaha Speaker "Installation Series" library makes it easy to use with the Yamaha Power Amp PC-1N

- series, XP series, and the DME64N or DME24N Digital Mixing Engines to facilitate total acoustic system planning.
- You can generate DDF data for the DME64N or DME24N\* of the simulation result and export it to the DME. You can put the simulation result to use in your actual system setup quickly and with little effort.
- \*: Use with the DME24 requires a simple data conversion.
- Convenient features such as the auto layout of array speakers and auto setting of speaker parameters are included to automatically conduct the important tasks of speaker selection, positioning, and setting of speaker array.
- The Yamaha Sound System Simulator is free software that can be downloaded from the web.



Installation Series Speaker



PC9501N

XP7000

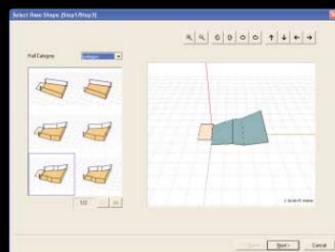
DME24N

DME64N

This section introduces the features in the order used with the software.

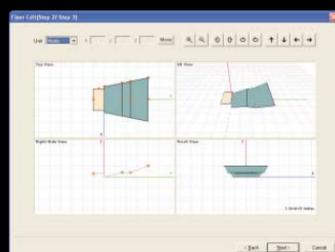
## STEP 1

Choose the shape of the venue for simulation.



Select from five basic types: Rectangular, Fan, Circle, Cross, and Polygon. The shape chosen is displayed in 3D.

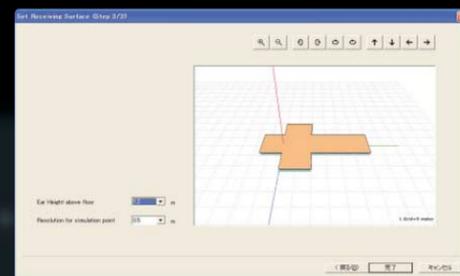
Use Floor Edit to better determine the shape of the simulation venue.



Floor Edit is performed for the horizontal floor plans and vertical cross sections with the mouse. Units for measurements can be selected from feet or meters.

Set the receiving point.

The receiving point is usually the height of the listeners' ears. Select the height from the floor to the receiving surface from the list box.



Set conditions for the venue for simulation.

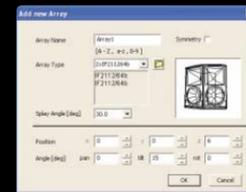


Enter the settings for the temperature and humidity of the air (Air Parameters), the phase interference (Interference Sum), and the coordinates of the person speaking or performing (Origin Point).

## STEP 2

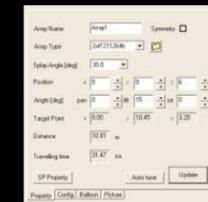
Set the speaker array.

Choose the speaker array from the list and install the speakers in the desired positions. Yamaha Installation



Series are preset in the library and can be selected easily. Then set position, tilt, pan, rotate, spray angle, and symmetry for the selected speaker array.

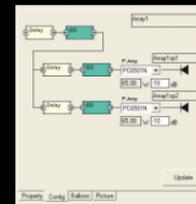
Set various conditions for the speaker array. Simulation begins when you select the speaker array. You can change several conditions for the speaker array in real-time as you view the simulation result to optimize the sound field design. You can set array, position, tilt, pan, rotate, target point, distance, arrival time, SP properties, and other features.



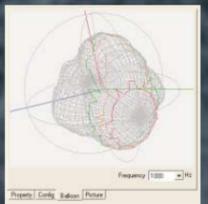
## STEP 3

Set the DME configuration.

The Y-S<sup>3</sup> automatically creates the output configurations based on the set speaker array. They are displayed on the speaker array property configuration screen, and delay, PEQ, amp model, and gain can be set for each speaker.



Check directivity of speaker array (balloon). Balloon data (directivity data for each frequency) for the speaker array can be checked on the screen in 3D. Balloon data is displayed for each frequency.



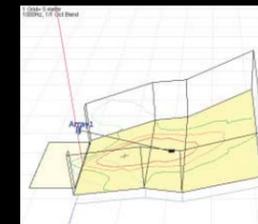
## STEP 4

Simulation result is displayed with visualized diagrams.

The Y-S<sup>3</sup> can visualize the simulation result with instantly understandable diagrams like those below.

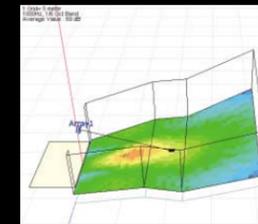
*Contour Figure:*

A contour figure for -3dB, -6dB and -9dB of 1/1 octave band is displayed in the main window.



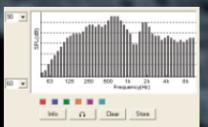
*Sound Pressure Level Distribution:*

Choose SPL mode to display the sound pressure level distribution. The sound pressure level distribution for selected frequencies and bandwidths can be displayed.



*Frequency Characteristics Graph:*

The bandwidth on the frequency characteristics graph can be changed to 1/1, 1/3, 1/6, or FET.



Check simulation result with your ears through auralization.

The Y-S<sup>3</sup> not only provides visualization with graphics, but also lets you check the simulation result with your ears using a sound source. Comparative listening from multiple receiving points can also be performed.



## STEP 5

Save the configuration in DME format.

The Y-S<sup>3</sup> automatically generates an output configuration for all speaker arrays that are installed, and saves it in the format of DME Designer, the application software for DME control. If you use the Yamaha Digital Mixing Engine DME64N or DME24N\* as a speaker processor, you can efficiently construct a sound system with greater accuracy and minimal effort.

