MSA12X
POWERED BEAM-STEERING
ARRAY LOUDSPEAKER

Dante®

PRECISE SOUND. HIDDEN IN PLAIN SIGHT.

Whether you're in an auditorium, a place of worship, a lecture hall, or a museum, the role of sound in shaping the experience cannot be overstated. A great audio solution has the power to elevate an experience in ways nothing else can.

However, the visual presence of traditional loudspeakers often poses a hindrance, coupled with their limited mounting flexibility, which falls short in providing comprehensive support for such diverse environments.

Introducing the MSA12X — the solution to these challenges. Its sleek design harmonizes effortlessly with any setting while delivering full-range sound, impeccable vocal clarity, and adaptable coverage control to overcome acoustical challenges in any space.

ENGINEERED TO EXCEL IN VOCAL INTELLIGIBILITY AND MUSICALITY, EVEN IN ACOUSTICALLY CHALLENGING SPACES.

The Bose Professional MSA12X powered beam-steering array loudspeaker incorporates twelve processed and amplified transducers to create a precise vertical sound beam that covers the entire audience area, while reducing disruptive echoes that may compromise clarity.
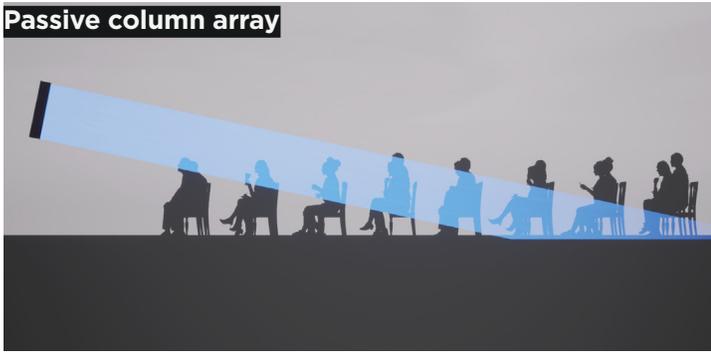
The result—a consistent front-to-back sound level without the need for mechanical aiming or angling brackets.

MSA12X beam-steering array
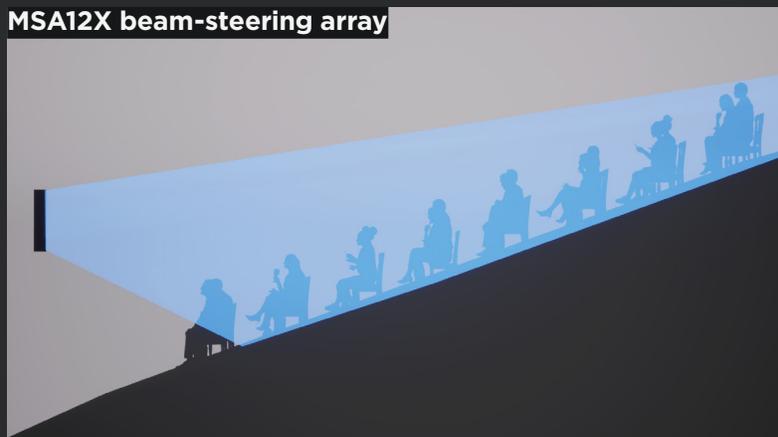
COVER MORE SEATS WITH BEAM STEERING

Passive column array

As viewed, passive columnar arrays naturally confine vertical coverage for improved intelligibility and clarity.

However, they must be aimed precisely toward listeners. Since the sound spread is limited, it takes more effort, and cost, to mount and aim additional loudspeakers.

MSA12X eliminates these restrictions.

MULTIPLE BEAM OPTIONS FOR VARIOUS USE CASES

MSA12X uses the latest digital steering technologies and algorithms to direct sound where it's needed — with fewer modules. Now, system designers can break free from traditional constraints by using a loudspeaker design that's flexible and adaptable but stills delivers clear, consistent sound.

Choose from three beam pattern options based on the arrays mounting location and the contours of the coverage area. Moreover, you have the capability to implement dual-beam mode (illustrated below) across modules of varying sizes (single, double, or triple), and with an assortment of beam pattern combinations.

Basic Steer / Spread
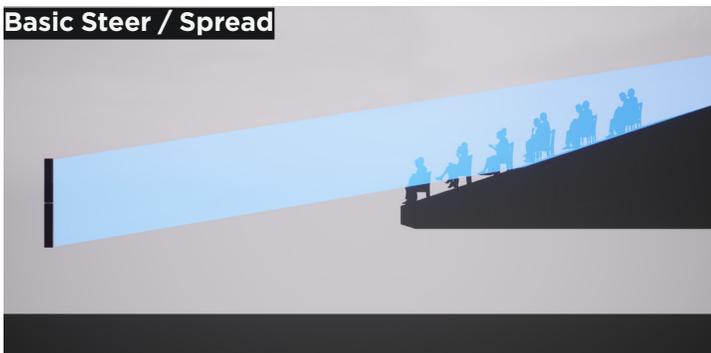
Basic steer / spread is the most basic beam pattern. It allows steering the axis of the beam vertically, then spreading the beam from that axis.

Flat Floor Optimized

Flat floor optimized is ideal for flat floor seating with the array bottom mounted slightly above ear height of audience. It provides consistent coverage from the front to the back row.

Raked Floor Optimized
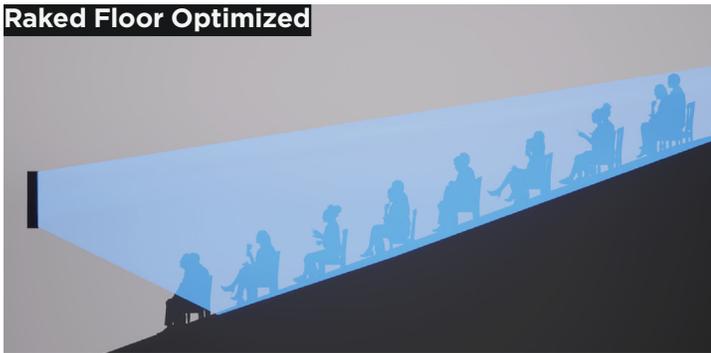
Raked floor optimized is good for covering a raked floor or flat floor from a relatively high array position. Radiates using a vertically asymmetrical beam.

Dual Beam Mode

By utilizing all the drivers of the array for both beams simultaneously, Dual-beam mode allows you to use any two beam patterns independently.

The **Vocal Range Smoothing** option — available on both Basic Steer/Spread and Flat-floor Optimized patterns — helps to maintain vocal-range tonal balance consistency throughout the target listening area. It also suppresses beam side-lobes with minimal reduction of headroom.

HARDWARE FEATURES

12 x 2.25-inch independently controlled and amplified transducers create a vertical sound beam that is electronically steered for precision aiming to cover the entire audience.

Extended frequency response from 75Hz to 17kHZ provides the ability to use for speech and music reinforcement.

Integrated DSP and 600 watts (12 x 50 W) of amplification make the MSA12X a self-powered and self-processed loudspeaker solution without the requirement of a standalone amplifier or loudspeaker processor.

The articulated transducer configuration provides 160° horizontal coverage, delivering consistent tonality across the entire audience, ensuring each listener enjoys the same sound experience.

All brackets and interconnect cabling included—no extra parts to order.

≈Dante® digital audio network interface needs just one cable connection for audio source and system control. Send digital audio to the MSA12X and use the same connection for ControlSpace network integration. Control, monitor, and recall beam presets via compatible ControlSpace processors and controllers.

**A line-level input** also enables local analog source connection.

Automatic source failover ensures uninterrupted audio playback in the event of a Dante network outage. The analog input serves as redundancy when both are playing the same content.

Beam presets in a ControlSpace network can be switched to instantly adapt sound coverage for half-rooms, full rooms, partitioned meeting rooms, or balconies. Designers can simply assign beam presets to user interfaces—such as wall controls or the ControlSpace Remote app—or assign presets to scheduled timer events and third-party control systems.

SOFTWARE FEATURES
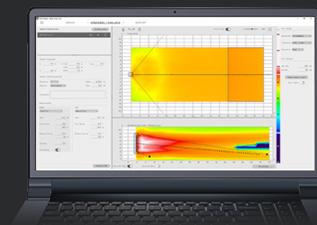
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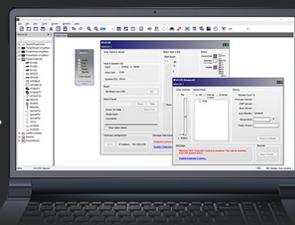
Transfer data

MSA Design Tool (formerly Bose Array Tool) is the first step in designing the MSA12X into the room. It is a simulation and analysis software that allows audio system designers to define venue parameters, position the MSA12X, and accurately predict its performance.

Once defined, the tool seamlessly synchronizes its predictions with ControlSpace Designer software, forming a workflow that streamlines the design process.

For designers utilizing EASE software for their loudspeaker placement modeling, there is an export EASE GLL function provided.

Bose Professional ControlSpace Designer is the next step to seamlessly integrate the prediction calculations generated by the Bose Professional Array Tool into the MSA12X. This software application also configures and designs our entire ControlSpace-enabled processors, smart amplifiers, and loudspeakers using one user interface.

Specific to MSA12X, it provides the ability to program settings, recall beam presets, and monitor operations in real-time.

Both software are available for free download at BoseProfessional.com

MODULAR ADVANTAGE

Flexible, modular design allows the simple creation of larger vertical arrays by stacking up to three modules without custom parts, ordering, or oversized shipping boxes.

The larger array extends coverage, enhances lower-frequency control, and improves dual-beam functionality.

Select a white or black finish, and paint them if needed.
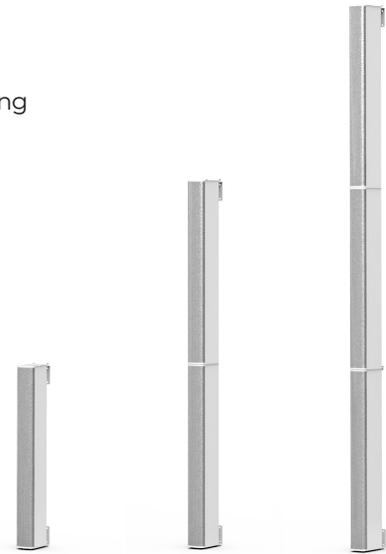
	Single 1 m (39 in)	Double 2 m (78 in)	Triple 3 m (117 in)
Typical Usable Throw Distance [1]	10 m (33 ft)	25 m (82 ft)	35 m (115 ft)
Max/Peak SPL [2]	97 / 103 dB at 10 m (33 ft)	96 / 102 dB at 20 m (66 ft)	95 / 101 dB at 30 m (98 ft)
Beam Control LF Limit	500 Hz	250 Hz	160 Hz

DESIGNED FOR MUSIC REINFORCEMENT

While the majority of column line arrays are primarily intended for vocal applications, the MSA12X sets itself apart by excelling in both speech intelligibility and musicality with frequency response down to 75Hz.

Its design allows it to not only deliver clear vocals but also perform well for music reinforcement when paired with a complementary subwoofer.

And for extended bass response, the Bose Professional MB210-WR subwoofer with dual 10" high-excursion drivers and a PowerShareX smart amplifier perfectly complement the MSA12X to deliver a complete audio solution for speech, music, and live sound applications.

SMOOTHER DESIGN AND INSTALLATION

Bose Professional has taken note of installers' frustrations with various passive and steerable column line arrays in the market.

The core problem lies in the time-consuming design and installation processes, often plagued by excessive guesswork.

Manufacturers' insufficient instructions necessitate on-site troubleshooting and loss of time.

We heard you and developed a new solution to make the design and installation of MSA12X straightforward
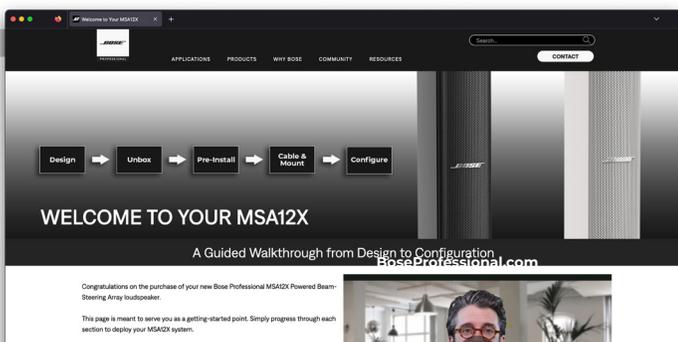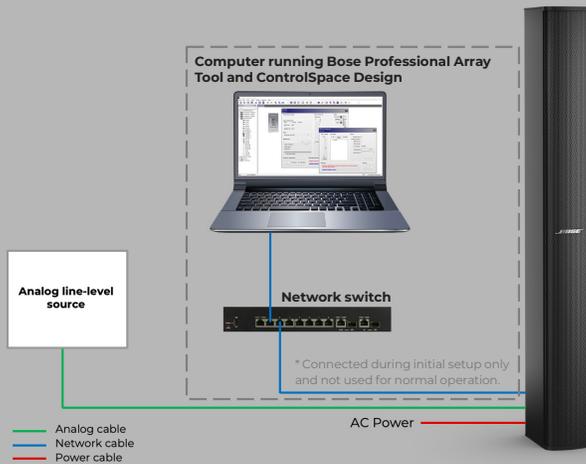
Introducing our installer-friendly MSA12X welcome webpage, offering a seamless, step-by-step workflow for designing, configuring, and installing both the MSA12X and its accompanying software applications. Everything you need to know from design, installation, and commissioning.
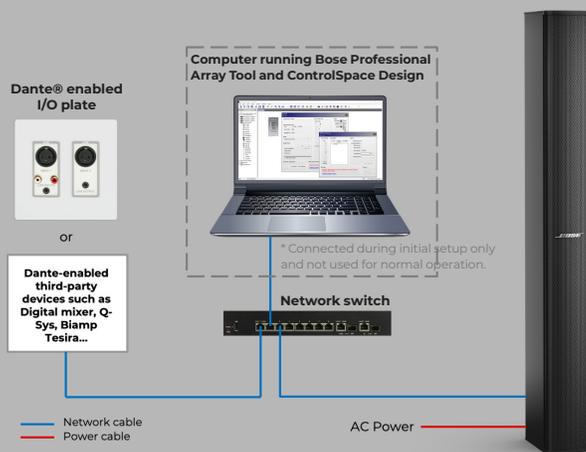
Check out at BoseProfessional.com

WORKS IN A VARIETY OF APPLICATIONS

Explore the various applications of the MSA12X, starting with its role in a straightforward and budget-friendly sound system setup.

Computer running Bose Professional Array Tool and ControlSpace Design

Analog line-level source

Network switch

* Connected during initial setup only and not used for normal operation.

AC Power

— Analog cable
— Network cable
— Power cable

In this configuration, the MSA12X offers a convenient 'set it and forget it' approach by receiving an analog line-level source. Once the beam is aimed and programmed, the computer and network switch plays a role in the initial setup and can subsequently be disconnected, resulting in a cost-effective analog solution.

An important note: A Bose Professional processor is not required. However, dynamically recalling beam presets or enabling real-time monitoring is not provided without the processor.

Dante® enabled I/O plate

or

Dante-enabled third-party devices such as Digital mixer, Q-Sys, Biamp Tesira...

Computer running Bose Professional Array Tool and ControlSpace Design

* Connected during initial setup only and not used for normal operation.

Network switch

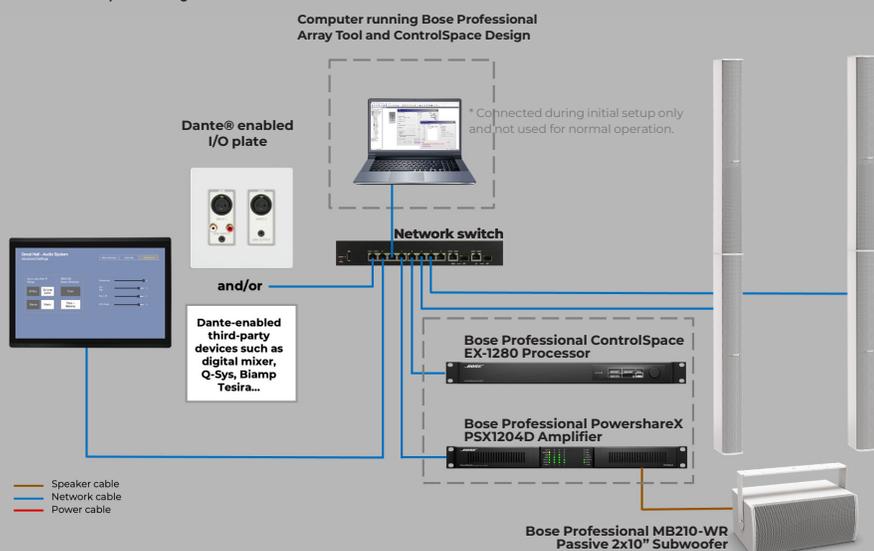AC Power

— Network cable
— Power cable

MSA12X can also be used in a more expansive networked distributed system.

In this networked arrangement, the MSA12X seamlessly acquires digital audio through Dante transport. This digital audio can originate from Dante-enabled I/O panels like RDL, a digital mixer, or as a component within a broader networked audio system from a third-party provider.

Similar to the previous configuration, once the beam is aligned and programmed, the computer can be disconnected, allowing it to operate in a 'Set it and forget it' mode. However, in this mode, it won't have the ability to dynamically adjust the beam or provide real-time monitoring

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The full extent of MSA12X's capabilities is truly realized when it is integrated into a comprehensive Bose Professional ControlSpace system.

Computer running Bose Professional Array Tool and ControlSpace Design

Dante® enabled I/O plate

* Connected during initial setup only and not used for normal operation.

Network switch

and/or

Dante-enabled third-party devices such as digital mixer, Q-Sys, Biamp Tesira...

Bose Professional ControlSpace EX-1280 Processor

Bose Professional PowershareX PSX1204D Amplifier

— Speaker cable
— Network cable
— Power cable

Bose Professional MB210-WR Passive 2x10" Subwoofer

The MSA12X introduces the capability of beam preset recalls, accessible through the ControlSpace Remote app running on a tablet, as depicted on the left. With a simple press, these buttons can activate presets that dynamically adjust the MSA12X's beam.

This functionality proves invaluable across a diverse array of environments, from adaptable meeting spaces with room partitions to performance halls featuring second-floor balconies that can be deactivated during periods of non-use.

You can also utilize the tablet with ControlSpace Remote app to activate the MB210 subwoofer when used for music reinforcement

TECHNICAL SPECIFICATIONS

SINGLE MODULE PERFORMANCE	
Frequency Response (-3 dB) [1]	75 Hz – 17 kHz
Frequency Range (-10 dB) [1]	58 Hz - 18 kHz
Horizontal Dispersion [2]	160°
Vertical Opening Angles	Software Adjustable: 1 module: up to 30°, 2-3 modules: up to 40° vertical
Vertical Beam Steering Angles	+ / - 20°
Max SPL @ 1 m [3]	112 dB

MULTIPLE MODULE PERFORMANCE	1-Module	2-Modules	3-Modules
Typical Usable Throw Distance [4]	10 m (33 ft)	25 m (82 ft)	35 m (115 ft)
Distance	10 m (33 ft)	20 m (66 ft)	30 m (98 ft)
Max SPL [3] at Distance	97 dB (103 dB Peak)	96 dB (102 dB Peak)	95 dB (101 dB Peak)
Low-frequency Beam Control Limit	500 Hz	250 Hz	160 Hz
Driver Compliment, Full-range Cones	57 mm (12 × 2.25 in)	57 mm (24 × 2.25 in)	57 mm (36 × 2.25 in)
Amplifier Channels / Rated Power	12 × 50 W	24 × 50 W	36 × 50 W
Physical Array Height	1 m (39 in)	2 m (78 in)	3 m (117 in)

ELECTRICAL PERFORMANCE (SINGLE MODULE)	
AC Mains Voltage	Universal 85-264VAC/50/60 Hz
AC Mains Connector	IEC60320-C14
AC Power Consumption	120VAC/240VAC: 25 W idle, 275 W max

AUDIO INPUTS	
Analog Audio Input Connector	3-pin Phoenix connector [5]
Analog Audio Maximum Input Level	0 dBU/+10 dBu/+24 dBU (pad engaged)
Input Sensitivity	15 dBu
Input Impedance	20 kΩ
Digital Audio Inputs	Input: 2 channels of Dante digital audio network (RJ-45), Expansion: LVDS (RJ-50)
AES67 Compatibility	Yes
Digital Output	Expansion: LVDS (RJ-50)

INTEGRATED DSP	
Software, Design and Array Parameter Creation	Bose Array Tool (rapid, direct field prediction), Bose Modeler (advanced, direct and reverberant prediction)
Software, Programming/Control/Monitoring	Bose ControlSpace Designer
A/D and D/A Converters	24-bit, 48 kHz
Number of Beams Supported [5]	2
FIR Filter Support (local MSA12X)	1024 tap @ 48 kHz
Number User Presets (local MSA12X)	10
Audio Latency	5.7 ms

PHYSICAL	
Enclosure	Extruded aluminum sidewalls; steel end caps, all powder-coated, paintable
Grille	Powder-coated aluminum, paintable
Indicators and Controls	Power, limit, fault
Operating Temperature Range (Ambient)	0° to 40° C / 32° to 104° F
Cooling System	Cooling is passive only, airflow bottom to top
Environmental	Indoor only
Suspension/Mounting	Integrated wall brackets; allows horizontal yaw up to 90° in either direction
Dimensions (H × W × D)	984 × 106 × 206 mm (38.74 × 4.16 × 8.12 in)
Net Weight	14.5 kg (32 lbs)
Shipping Weight	19.21 kg (42.35 lbs)
Accessories included	(1) Power Cord, (1) Power interconnect cable, (1) RJ-50 Expansion Cable, (1) Phoenix connector, (2) Wall/Speaker-mount Bracket sets, (1) Interconnect Bracket, (12) Zip ties, (1) Bose logo, extra (4) m6 flange nuts, (8) m6 Hex Head bolts, (1) yaw bracket

PRODUCT CODES	
Black (RAL 9005)	[787856] - 1110, 2110, 3110, 4110, 5110
White (RAL 9010)	[787856] - 1210, 2210, 3210, 4210, 5210

Footnotes
(1)   Frequency response and range measured at 1 m, on-axis with recommended active EQ in anechoic environment
(2)   1-4 kHz average, -6 dB
(3)   Max SPL calculated based on free-field (no boundary loading gain) sensitivity, exclusive of power compression, and without beam steering, spreading or smoothing functions applied
(4)   Typical Maximum Usable Throw Distance includes considerations for reverberation and speech intelligibility
(5)   Analog audio input is limited to 1 beam, 2 beam support requires Dante input

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