



# AT212-MK3 User Manual

12" 2-Way  
Powered  
Loudspeaker



# USER MANUAL



# AT212-MK3

## 2-Way 12" Powered Loudspeaker

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Este manual está disponible en español en nuestro sitio web en [bassboss.com/support](http://bassboss.com/support)

The AT212-MK3 is a very high-output, 2-way, self-powered, internally processed, bi-amplified, mid-high loudspeaker. The cabinet is lightweight, the setup is easy and the output is smooth with a natural, musical character. The remarkable power and efficiency of the AT212-MK3 make it ideal for providers who want to deliver high output but prefer not to move heavy cabinets.

Intended for use with a subwoofer system to complete a 3-way active full-range system, the AT212-MK3 has a tall, slim design that allows the HF horn to stand above crowds when the cabinet is stacked on subwoofers. The light weight of the cabinet makes stacking by one person possible. The AT212-MK3 cabinets weigh only 99 lbs.

The cones are waterproofed to protect them from accidental exposure to moisture such as rain or spilled beverages. Weather resistant, IP65 rated power connectors, an internally sealed input section and waterproof-treated cones are provided to allow operation where rain might be encountered.

The AT212-MK3 is a vented cabinet that features two high-efficiency 12" woofers. The woofers feature 3.5" voice coils, Neodymium magnets, cast aluminum baskets and ultra-light cones. The compression driver also features a Neodymium motor structure with a 3" voice

coil. It is mated to a 1.4" throat, cast aluminum horn. The horn is rotatable, providing 80 x 60 degree coverage for multiple applications including ground stack and horizontal or vertical flying.

Power is supplied by an amplifier that can deliver output peaks of 163V, to provide amazing dynamic resolution and impact. The fully integrated and comprehensive digital processing ensures smooth response and reliable operation thanks to meticulous filter alignments and five- stage limiters that protect the drivers from excessive peaks, and also from thermal overload, by monitoring real power output over time. The amplifier features a large heat sink and 2 temperature-controlled fans to ensure consistent operation under even the most extreme conditions.

The AT212-MK3 is the ultimate in plug and play, with universal voltage compatibility and no need for any outboard gear other than a sound source. The processing features presets that allow it to run in multiple configurations. The full-range mode, Preset 1, provides response down to 50Hz (-3dB). Each successive preset filters the lows out at higher frequencies, allowing the AT212-MK3 to be perfectly integrated with various types and sizes of subwoofers.

Not including Cardioid, there are up to 56 possible combinations when used with MK3 subs, and all are compatible. You can't choose a "wrong" preset, you simply choose the combination you like best.

Each preset has a specific high-pass filter frequency and alignment filters that ensure it's always phase coherent with any BASSBOSS sub. As low-frequency demand is reduced, higher sound levels can be achieved. In the higher presets, this allows each AT212-MK3 to provide enough mid-high power for multiple large subwoofers.

The AT212-MK3 can be combined with any BASSBOSS subwoofer because all the presets are programmed to align with all the subs. Each preset offers advantages that suit certain applications and preferences. No matter which preset you choose, your BASSBOSS subs and tops will always play in harmony.

The cabinet is built from 18mm and 15mm Baltic Birch plywood. It features an 18mm baffle, and 18mm top and bottom, with 15mm sides, port walls and braces, all assembled with dado joinery. The cabinet includes 4 steel bar-handles and 4 internally braced steel M10 fly points and a 35mm (1-3/8") cast metal pole socket. The cabinet is finished in an extremely rugged, black polyurea coating. Drivers are protected by a black, powder coated, perforated steel grille, and the amp is recessed into the back of the cabinet for protection from damage in transit.

The MK3 features an all-new DSP. The comprehensive suite of processing includes high-pass and low-pass filters as well as multiple protection systems and limiters to prevent driver overload in as many ways as possible, including thermal, excursion and clipping. The five levels of protection actively prevent overheating of the voice coil, minimize long-term thermal compression and limit excursion. Because they operate in 5 different modes, the limiters are sophisticated enough to have a largely unnoticeable effect on the transient response and allow the subwoofer to deliver peak output safely.

The new DSP features an Ethernet interface. This can be used to control the cabinets from a computer or to load software or firmware updates. The ethernet connectivity in conjunction with the DSP board allows signal to be sent via Milan AVB. Firmware updates will provide access to this feature.

Within the software, multiple cabinets can be grouped together, allowing them to respond to commands simultaneously. This permits the levels of multiple loudspeakers to be adjusted together and yet independently from the levels of other groups of loudspeakers. In addition to individual and grouped level controls, presets can be loaded and signal levels and temperatures can be monitored. Each cabinet includes a two-port switch so multiple cabinets can be chained on the same data cable.

The MK3 DSP features storage capacity of up to 100 presets, eight of which can be accessed at the touch of a button with no need for a connected computer. The eight directly accessible presets are compatible with all the presets in the MK3 Top Boxes and are also compatible with previous generation tops and subs.

# Quick Start Guide

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1. Ensure the cabinet is secure and stable.
2. Connect signal via the XLR-F input.
3. Connect the XLR-M connector to additional subs or tops.
4. Connect the mains power and verify the "Ready" LED is lit.

BASSBOSS systems are easy to set up quickly. The best possible results are achieved consistently because of the integrated nature of the designs. All BASSBOSS loudspeakers are complete, integrated systems, featuring the cabinet, transducer, amplifier and a comprehensive suite of processing. Setup is particularly easy because the products integrate with each other.

Provided the cabinets are physically aligned, any BASSBOSS sub can be combined with any BASSBOSS top and their outputs will be phase-coherent. This means no cancellations and no gaps in the response at the crossover frequency, regardless of which preset is selected.

The on-board BASSBOSS processing allows for the following:

Any BASSBOSS powered subwoofer can be combined with any other BASSBOSS Powered subwoofer and their outputs will sum coherently. (i.e.: in phase with each other.)

Any BASSBOSS powered subwoofer or combination of BASSBOSS powered subwoofers can be combined with any BASSBOSS powered top and their outputs will sum coherently through the crossover region.

HOWEVER only one model of top should be used at a time. An assortment of different tops cannot be stacked together and still achieve coherence and clarity.

The following tops should be used individually, i.e. should NOT be arrayed:

AT312 (Co-axial point-source Main)

DiaMon (Co-axial point-source satellite)

SV9 (2-way monitor with Satellite mode)

The following tops can be used in arrays:

MFLA (Medium Format Line Array, up to 20 cabinets can be arrayed)

AT212 (Horizontally arrayable when necessary)

DV12 (Arrayable in PAIRS ONLY with the upper box of the pair inverted.)

# Outboard Processing Warning

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Third-party outboard processing (Drive Racks, etc.) are not recommended and are not necessary with BASSBOSS MK3 series powered loudspeakers. Outboard processing will not improve, and will very likely degrade the sound quality, reliability and output capacity. Using external processing inappropriately can cause driver damage that is not covered by warranty.

The internal processing can accomplish everything an external processor could accomplish without degrading the sound quality and without putting components at risk. Before considering using an outboard processor, contact BASSBOSS customer service with your use-case scenario for assistance in setting up the internal processing to achieve your goals.

# Setup Procedure

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Once the the cabinet is in the desired location, signal cables should be connected via the XLR-F input. It's recommended to run balanced signal cables to minimize the chance of noise and ground-loop hum. The incoming signal should be unprocessed because all the necessary processing is done in the built-in DSP. The signal should be run directly from the outputs of a mixer or controller.

The XLR-M connector provides a full-range, unprocessed, pass-through connection to additional cabinets. This output can be connected to additional subs or tops. Up to 12 cabinets can be connected on a single output from a mixer or controller.

Connecting the mains power. The power connector is a Neutrik PowerCON TOP waterproof type. The power connector inserts with the silver tab rotated counter clockwise from vertical, at about the 10:00 position, and once inserted, rotates clockwise to the 12:00 position to lock in place. Once locked, this connector is waterproof.

This connector also serves as the power switch. To disconnect and remove the connector, pull back on the silver tab to unlock it and rotate it counter clockwise. Once rotated to the insertion angle, the connector can be removed.

When connecting and disconnecting, no force should need to be applied. If the connector doesn't insert and rotate smoothly, either it's in the wrong position or it's damaged and should be replaced.

**Always use a grounded outlet.** The supplied power cord includes a standard grounding NEMA 5-15 (Edison) 120-Volt US wall plug. In unfamiliar locations it's recommended to verify the correct wiring of outlets before powering your system.

It's highly recommended to connect all signal and power cords to the speakers before plugging the power cords into mains outlets. When your speaker is powered on, you'll see all the indicator lights turn on and then show the system's current status.

Although the VS21 cabinet is equipped with a 35mm steel pole socket, DO NOT use this speaker on a tripod or extension pole. This socket is to be used with a special, short section of pole to prevent it from moving once stacked on a subwoofer.

# Operation & Controls

There are 2 controls on the amplifier.

## 1: Input

This knob adjusts the input level from -72dB to -0dB. To avoid distortion and clipping, make sure the input signal doesn't exceed +22dB and the output doesn't reach clipping before you achieve the desired sound level.

While the amplifier has built-in limiters and safety features to protect itself and the speaker, it can't protect the speaker from distorted incoming signals. The amplifier will simply amplify the clipped signal, which can do the same damage as clipping an amplifier. Since it's essentially impossible for these amplifiers to clip, signal-level clipping is the most common cause of damage to these speakers.

If you hear distortion, lower the *input level* right away.

## 2: Preset Select

Pressing the Preset Select button cycles through presets 1-8, and pressing it again after preset 8 returns to preset 1. Each preset includes all necessary low-pass and high-pass filters at the selected frequencies and all the necessary alignments to maintain phase coherence in the crossover range when used with other BASSBOSS powered speakers.

Presets help you fine-tune the balance between the subwoofers and top speakers. More details on the different combinations are on page 7.

# Indicator LEDs

## Indicator LEDs - Left side, bottom to top:

**Ready:** Indicates that power is on and the system is ready to play.

**Signal:** Indicates the presence of input signal.

**-12dB:** Indicates there is 12dB of headroom remaining before reaching maximum output.

**-6dB:** Indicates there is 6dB of headroom remaining before reaching maximum output.

**Limiting:** Indicates one of the channels is reducing the incoming signal level to prevent overdrive.

**Overheat:** Indicates the amplifier is reducing output to prevent shut-down from overheating.

**Protect:** Indicates the amplifier is shut down due to a condition that could cause further damage.

**The Protect LED also is engaged when the system has been muted via the software.**

**Comm Link:** Indicates communication is active on the LAN connection(s).

## Indicator LEDs, Right Side, Bottom to top:

Presets 1-8 - The illuminated LED indicates the corresponding preset is loaded.

# How to Use the Presets

Setting the low-pass filter frequency on the subwoofer to match the top cabinet's high-pass filter frequency and balancing their levels will achieve the smoothest sound across the frequency range.

There are no incompatible combinations.

Selecting high numbered presets on subs with low-numbered presets on tops will result in increased system output in the overlap range, which can be helpful in some situations but can also result in a "boomy" sound.

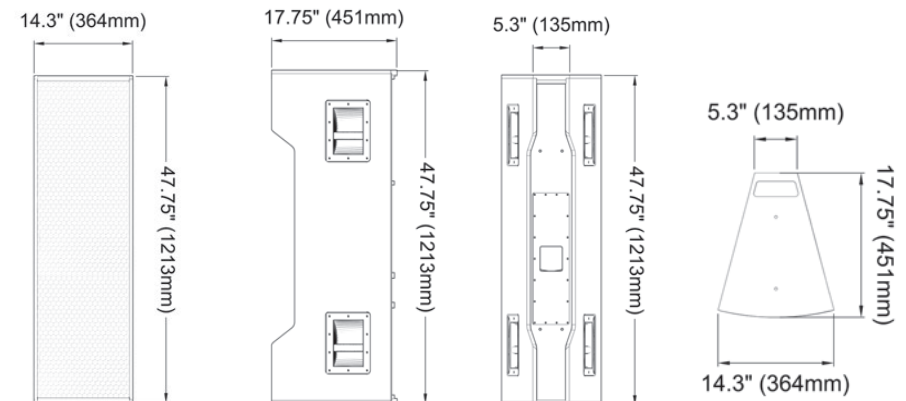
When the subwoofer levels are to be run higher than tops levels, (which is almost always) the effective crossover moves higher in frequency. If you intend to run your system "bass-heavy" it's recommended to run lower-numbered presets on the subs and higher-numbered presets on the tops to avoid an excessively "boomy" sound.

Selecting low-numbered presets on subs with high-numbered presets on tops may result in a lack of "punch" in certain combinations. This is most likely when not enough level is available from the subwoofer(s).

When not enough output is available from the sub(s), using a preset combination with overlap can help provide a little more bass level but it does limit the maximum level of the tops due to the added demand for low-frequencies from the tops.

It's recommended that you try several, if not all, combinations when first setting up to determine which combination works best in each environment. You will likely choose different combinations for wood floors, concrete floors and outdoors.

Experiment with different combinations to dial in your preferred combination in different environments.



# Pre-Installed Onboard Presets

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## High-pass and low-pass filters with included phase compensation.

### Preset 1: 40Hz high-pass filter

Recommended for use when no sub is available.

Peak output is restricted to prevent low frequencies damaging the loudspeaker.

### Preset 1: 45Hz high-pass filter.

### Preset 2: 55Hz high-pass filter

### Preset 3: 65Hz high-pass filter

### Preset 4: 75Hz high-pass filter

### Preset 5: 85Hz high-pass filter

### Preset 6: 95Hz high-pass filter

### Preset 7: 105Hz high-pass filter

### Preset 8: 115Hz high-pass filter

With their levels matched, when the low-pass filter frequency selected on the subwoofer is matched with the high-pass filter frequency selected on the Top cabinet, the smoothest frequency response should be achieved.

**Additional presets are accessible through software.** See "How to Use the Presets" section for more information.

New presets will be available for download at [bassboss.com/software](http://bassboss.com/software) as they are developed.

To be notified when new presets are released register your gear at: [www.bassboss.com/support](http://www.bassboss.com/support)

Instructions on linking to your computer for remote monitoring and control: [www.bassboss.com/software](http://www.bassboss.com/software)

Information and setup tips about how to get the best and most out of your system:

[bassboss.com/edu](http://bassboss.com/edu)

# Power Distribution

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Connect no more than one 5000W or two 2500W subwoofer amplifiers to a single 20A circuit. If you need to share circuits don't exceed two BASSBOSS single-driver subwoofers or one double-driver subwoofer along with one or two top speakers on the same circuit.

Although amplifiers for tops and subs may be specified to have the same power capacity, amplifiers used for tops applications tend to draw significantly less current. Subwoofers draw far more current than tops due to the demands for level and the duration of the notes.

The amplifiers can operate on mains supply from 100 to 250VAC. To connect to voltages other than 120V, a different mains connector plug must be used. Contact your salesperson for information about purchasing cables for alternate voltages.

Pass-through Power connections can be used to power additional cabinets. With optional True 1 TOP cables, power can be linked between subs and tops. Do not connect equipment that will draw more than 15A on a single power outlet. Contact your salesperson for information about linking power cables.

Avoid powering all subwoofers on the same circuit. Instead, use separate circuits for each subwoofer and top speaker combo to help prevent overloading a single circuit and tripping a breaker.

# Troubleshooting

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If, after following the previous instructions for setup, you have no output from the loudspeaker:

## Verify that the green Ready LED is lit. If NOT lit, check the following:

1. Is the power cord plugged into a live outlet?
2. Is the Neutrik powerCON connector rotated into the locked position?

## If the green Ready LED is lit, check the following:

1. Is the red Protect LED illuminated? The unit may be in protect mode or set into mute via software.
2. Is the signal cable connected to the input?
3. Is the signal cable connected to an operating output at the other end?
4. Is there signal flowing to the input? Check the integrity of the cable against a different cable.
5. Is the volume knob turned all the way down or at a very low level?
6. Is the signal flowing to the input full-range?

*Filters in the signal may remove the operating frequencies of the loudspeaker receiving them.*

7. If you're connected via LAN, check the level and filter settings in the software.

# Specifications

## Acoustical

Loudspeaker Description:	High-output 2-Way Broad-range Main
Frequency Response (±3 dB):	50 - 19,000 Hz
Max Sustained Output:	131 dB SPL, 1m
Maximum Measured Output:	137 dB SPL, 1m
Nominal Dispersion (°H x °V):	80 x 60 (Rotatable)

## Electrical

Amplification:	3200 Watt Two-Channel Class D Amplifier
Processing:	Integrated comprehensive DSP including high-pass, low-pass, parametric EQ, phase alignment and multi-band limiting
Electrical Connectors, Amplifier:	Neutrik Powercon True 1 TOP in and through
Electrical Connector, Mains:	NEMA 5-15 (Edison)
Voltage Operating Range:	100-240V. Auto-sensing, auto switching universal supply
Current Draw, Nominal:	4.6A @ 120 volts, 2.3A @ 220V (typical, 1/8 max power)
Display:	LEDs for Power on/ready, Signal, -12dB, -6dB, limiter active, Thermal, Protect and LAN link active. Eight LEDs indicating selected preset

Signal Input Connector:	XLR-F
Signal Output Connector:	XLR-M pass-through
LAN Connectors:	EtherCON RJ45 (x2)

## Physical

Enclosure Type:	Self-powered, bi-amplified, 2-way broad-range. Direct radiating vented LF section, Horn-loaded HF section
Transducer, LF:	2 x 12" diameter (300 mm) Neodymium motor woofer with 3.5" (76mm) voice coils
Transducer, HF:	1 x 1.4" throat Neodymium motor compression driver with 3" (76mm) voice coil on cast aluminum 80 x 60 degree horn
Cabinet Construction:	18mm/15 mm multi-ply Baltic Birch plywood with internal bracing and damping 4 steel bar handles, 4 internally braced steel fly points and a 35mm pole socket
Suspension Points:	4 x internally braced M10 threaded mounting points
Dimensions (HxWxD): 4	8" x 14.5" x 18" (122 cm x 36.4 cm x 45.4 cm)
Net Weight:	99 lbs. (45 kg)
Shipping Weight:	109 lbs. (50 kg)
Exterior Finish:	Rugged, weatherproof, black, textured, bonded high-pressure polyurea coating
Grille:	Perforated, powder coated steel

## Optional

Shoulder Eye Bolts:	Use when flying the cabinets vertically
Side-pull anchors:	Use when flying the cabinets horizontally
Cover:	Heavy-duty padded nylon transport cover with velcro closure
Loop-through PowerCON TOP:	Power jumper for chaining power between adjacent cabinets
Online Information:	bassboss.com/at212

\*Peak output is calculated using "industry standard" techniques. These calculation methods create theoretical specifications that are inflated over what can actually be achieved. BASSBOSS real world output specifications are provided as "Maximum SPL" ratings, which reflect actual measured output levels.

Our proactive philosophy causes specifications to be subject to change whenever improvements are made.

# Warranty

**WARRANTY INFORMATION | Our fully-transferable warranty covers all BASSBOSS products.**

## STANDARD CABINET WARRANTY

BASSBOSS loudspeaker cabinet integrity, including all joinery, fasteners, handles and wood, is warranted against defects in materials and workmanship for a period of six (6) years from the date of purchase. This warranty does not cover items that are intended to wear and can be replaced if worn or damaged. Examples of items not covered by this warranty are cabinet feet, grilles and the finish or coating applied to the cabinet.

## ENHANCED COMPONENT WARRANTY

BASSBOSS amplifiers and electronic components are covered against failures due to defects in materials and/or workmanship for a period of three (3) years from the date of purchase.

## TRANSDUCER WARRANTY

Transducers are covered against failures due to defects in materials and/or workmanship for two (2) years from the date of purchase.

## OUR SUPPORT

Warranty support is a service, and part of that service includes helping you prevent failures and minimize repair and shipping costs.

Please do not ship products without obtaining a return authorization number (RMA) by contacting BASSBOSS at [bassboss.com/support](https://bassboss.com/support). **If you need to ship your speaker for service, BASSBOSS technicians will provide assistance on shipping and packaging requirements specific to your service needs.**

## WARRANTY LIMITATIONS

During the warranty period, if your loudspeaker malfunctions or fails due to any defect in components or manufacturing, the failed parts will be repaired or replaced. This warranty does not extend to damage resulting from improper installation, misuse, neglect or abuse. Warranty coverage and eligibility will be determined upon inspection by BASSBOSS personnel. This warranty does not cover labor other than that authorized and performed by BASSBOSS personnel. Service will be performed upon the return of the failed unit, together with its original sales receipt or other proof of purchase, to BASSBOSS or an Authorized Service Facility. Purchaser is responsible for all costs of shipping and handling. Cosmetic damage is specifically excluded from this warranty. This warranty is rendered void if service, repairs and/or modifications are attempted or made by anyone not specifically authorized by BASSBOSS to perform said services. **Please contact BASSBOSS or your local BASSBOSS dealer before attempting any repairs and before shipping parts in for service.** This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state.

# Safety Information

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## Important information regarding safety and the use of your loudspeakers:

To prevent potentially dangerous exposure to high levels of acoustic pressure, never stand in the immediate vicinity of loudspeakers driven at a high level without hearing protection. Professional loudspeaker systems are capable of causing sound pressure levels detrimental to human health. When a transducer capable of producing high sound levels is being used, it is necessary to wear ear plugs or protective earphones to prevent hearing damage.

Even seemingly non-critical sound levels (from approximately 95 dB SPL) can cause hearing damage if people are exposed to it over a long period. Anyone exposed to these levels should use appropriate hearing protection devices. System and venue owners and operators are encouraged to make hearing protection devices available to all customers and staff members.

In order to prevent accidents when setting up the loudspeakers or loudspeaker stands, make sure they are standing on a firm surface. Ensure that all additional hardware, fixings and fasteners used for installation or mobile deployment are of an appropriate size and load safety factor.

Always use the included, factory installed, internally secured M10 fly points when supporting the cabinets. Use appropriately load-rated hardware. Never hang loudspeakers from handles. Never drill or screw into cabinets to attach lifting points.

Pay attention to the manufacturers' instructions and to the relevant safety guidelines. Regularly check the loudspeaker housings and accessories for visible signs of wear and tear, and replace them when necessary. Regularly check all load bearing bolts in the mounting devices.

**Caution:** Loudspeakers produce a static magnetic field even if they are not connected or are not in use. Therefore make sure when erecting and transporting loudspeakers that they are nowhere near equipment and objects which may be impaired or damaged by an external magnetic field. A distance of 3 feet (1m) should be maintained between loudspeakers and sensitive equipment such as CRT monitors or magnetic storage media.

Never attempt to carry out any operations, modifications or repairs that are not expressly described in this manual. Contact your dealer or BASSBOSS support if the product is not functioning properly.

For installation purposes BASSBOSS strongly recommends that this product be installed by a qualified, professional installer who can ensure correct installation and certify that it is installed in compliance with the regulations in force.

The audio system must comply with current local standards and regulations regarding electrical systems.

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# Important Notes

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Shielded data cables must be used.

To minimize the occurrence of noise and interference, always use shielded signal cables. Avoid routing signal or data cables close to equipment that produces high-intensity electromagnetic fields such as transformers, power cables and loudspeaker wires.

Do not coil excess power cable. Do not coil or wrap power cables and signal or data cables together.



## WARNING

This is a class A product. In a domestic environment, this product may cause radio interferences, in which case the user may be required to take corrective measures.

# FCC Compliance Notice

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Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their own expense.

# Manufacturer

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**True Lee Loudspeakers | BASSBOSS 2028 E Ben White Blvd. #240-8220 Austin TX 78741**

We declare, under our sole responsibility, that to the best of our knowledge to which this declaration relates, our products are in conformity with the applicable requirements.

Product: AT212-MK3 Loudspeaker Intended use: Professional Audio Loudspeaker



# AT212-MK3

12" 2-Way  
Powered  
Loudspeaker



Need more assistance?  
We're here to help.

[bassboss.com/support](https://bassboss.com/support)