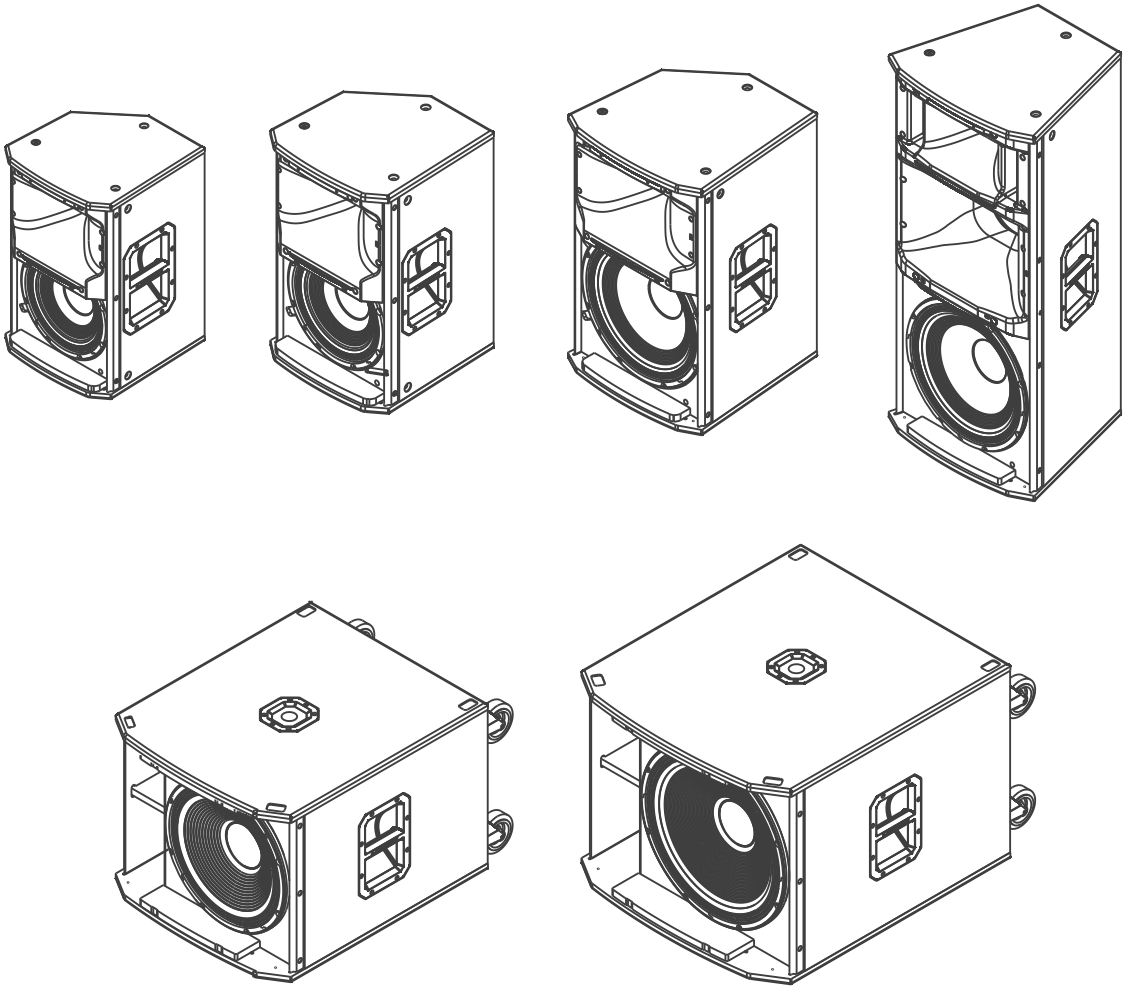
ETX Powered Loudspeakers

ETX-10P, ETX-12P, ETX-15P, ETX-35P, ETX-15SP, and ETX-18SP

en | User Manual



Electro-Voice

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1 Safety

1.1 Important Safety Instructions

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT OVEREXPOSE THIS APPLIANCE TO RAIN OR MOISTURE
AVIS: RISQUE DE CHOC ELECTRIQUE, NE PAS OUVRIR.
WARNING: THE MAINS PLUG OR AC INLET IS USED AS A DISCONNECT DEVICE. THE DISCONNECT DEVICE SHALL REMAIN READILY OPERABLE.
WARNING: CONNECT ONLY TO MAINS SOCKET WITH PROTECTIVE EARTHING CONNECTION.
WARNING: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK) AS THERE ARE NO USER-SERVICABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED PERSONNEL.

	The lightening flash with arrowhead symbol, within an equilateral triangle is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be sufficient magnitude to constitute a risk of electric shock to persons.
	The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.
	The asterisk within an equilateral triangle is intended to inform the user to necessary installation or removal instructions regarding equipment or hardware use relating to the system.

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with a dry cloth.
7. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
8. Only use attachments/accessories specified by the manufacturer.
9. Do not expose this apparatus to dripping or splashing and ensure that no objects filled with liquids, such as vases, are placed on this apparatus.
10. Do not block any ventilation openings. Install in accordance with the manufacturers instructions.
11. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
12. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
13. Unplug the apparatus during lightning storms or when unused for long periods of time.

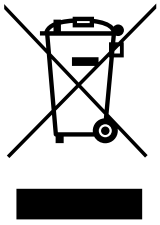
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. To completely disconnect AC power from this apparatus, the power supply cord must be unplugged.

1.2 Suspension

Warning!
Suspending any object is potentially dangerous and should only be attempted by individuals who have a thorough knowledge of the techniques and regulations of suspending objects overhead. Electro-Voice strongly recommends all loudspeakers be suspended taking into account all current national, federal, state, and local laws and regulations. It is the responsibility of the installer to ensure all loudspeakers are safely installed in accordance with all such requirements. When loudspeakers are suspended, Electro-Voice strongly recommends the system be inspected at least once per year or as laws and regulations require. If any sign of weakness or damage is detected, remedial action should be taken immediately. The user is responsible for making sure the wall, ceiling, or structure is capable of supporting all objects suspended overhead. Any hardware used to suspend a loudspeaker not associated with Electro-Voice is the responsibility of others.

Warning!
Do not suspend this product in any other manner than explicitly described in this manual, or Electro-Voice installation guides. Suspending any object (loudspeaker) is potentially dangerous and should only be done by individuals with thorough knowledge of techniques, materials, and regulations for suspending objects overhead. Electro-Voice loudspeakers can only be suspended using accessories and hardware described in Electro-Voice manuals and installation guides. **Do NOT use handles to suspend the loudspeaker. Handles on Electro-Voice loudspeakers are intended to only be used for temporary transport by people. Items, such as fiber rope, wire rope, cables, or other types of materials cannot be used to suspend loudspeaker from the handles.** Any hardware used to suspend a loudspeaker not associated with Electro-Voice is the responsibility of others.

1.3 Notices



Old electrical and electronic appliances
Electrical or electronic devices that are no longer serviceable must be collected separately and sent for environmentally compatible recycling (in accordance with the European Waste Electrical and Electronic Equipment Directive).
To dispose of old electrical or electronic devices, you should use the return and collection systems put in place in the country concerned.

1.4 FCC Information

IMPORTANT: Do not modify this unit! Changes or modifications not expressly approved by the manufacturer could void the user's authority, granted by the FCC, to operate the equipment.

Notice!

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician.

1.5 Precautions

	If an Electro-Voice loudspeaker is used outdoors on a sunny day, place the loudspeaker in a shaded or covered area. The loudspeaker amplifiers have protection circuits that temporarily shut the loudspeaker off when extremely high temperatures are reached. This can happen on hot days when the loudspeaker is in direct sunlight.
	Do not use Electro-Voice loudspeakers in an environment where temperatures are below 0°C (32°F) or exceed +40°C (104°F).
	Never expose an Electro-Voice loudspeaker to rain, water, or high moisture.
	Electro-Voice loudspeakers are easily capable of generating sound pressure levels sufficient to cause permanent hearing damage to anyone within normal coverage distance. Caution should be taken to avoid prolonged exposure to sound pressure levels exceeding 90 dB.

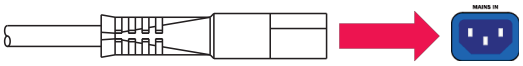
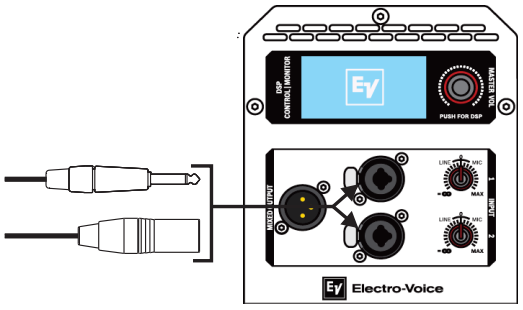
2 Description

Thank you for choosing an Electro-Voice powered loudspeaker system. Please take time to consult the manual to understand all the features built into your EV system and fully utilize its performance capabilities.
The ETX Powered Loudspeakers are a high-end wood loudspeaker family; consisting of the ETX-10P, ETX-12P, ETX-15P, ETX-35P, ETX-15SP, and ETX-18SP. Features professional fit and finish, durable, high power systems offers easy portability. The integrated LCD screen allows access to multiple DSP (Digital Signal Processing) settings and system status. ETX Powered Loudspeakers offer the best-in class sound through design, innovation, amplification, and DSP inspired by EV's legendary engineering team.

2.1 Quick setup

The ETX Powered Loudspeakers from Electro-Voice are fully integrated audio systems with carefully matched electronics and transducers. These products make it easy to set up a high quality system quickly with a minimum amount of cables and external electronics.

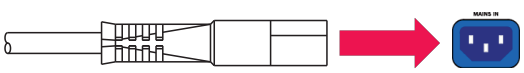
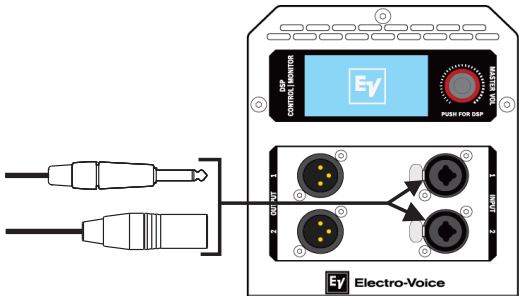
Full-Range loudspeaker
Models: ETX-10P, ETX-12P, ETX-15P, and ETX-35P
To **set up a full-range loudspeaker**, do the following:

Step	Illustration
1. Connect the **AC power cord** from a grounded line receptacle to the MAINS IN.	
2. Connect the **XLR or TRS cable from an audio source to INPUT 1 or INPUT 2**.	
3. Adjust the **input gain** to -∞ (infinity).	
4. Switch **POWER** to ON.	
5. From the DSP home screen, increase the **input gain** to the desired signal level.	
6. Adjust the **MASTER VOL knob** to the desired volume.	

Subwoofer

Models: ETX-15SP and ETX-18SP

To **set up a subwoofer**, do the following:

Step	Illustration
1. Connect the **AC power cord** from a grounded line receptacle to the MAINS IN.	
2. Connect the **XLR or TRS cable from an audio source to INPUT 1 or INPUT 2**.	
3. Switch **POWER** to ON.	
4. Adjust the **MASTER VOL knob** to the desired volume.	

2.2 System features

ETX Powered Loudspeakers from Electro-Voice build upon the legacy and heritage of EV , to deliver the most advanced powered loudspeaker products for portable and permanent applications. The output, response and coverage pattern of EV transducers are all optimized via the breakthrough design approach known as SST (Signal Synchronized Transducers), combined with state-of-the-art on-board DSP which is accessed via an easy-to-use single-knob interface. EV designed and manufactured transducers include SMX woofer technology using composite cone materials, flux stabilizing rings, and thermal management. This transducer yields lower distortion, smooth response and high SPL. The high-efficiency DH3-B compression driver has a convex diaphragm driving a coherent phase device extending frequency response to 20 kHz. The ETX Powered Loudspeaker family features three (3) two-way loudspeakers (10-inch, 12-inch and 15-inch with a 1.5-inch titanium compression driver), a single three-way loudspeaker, and subwoofers with 15-inch and 18-inch drivers. ETX Powered Loudspeakers combine EV-engineered intelligent DSP, high-powered amplifiers and high-efficiency transducers to deliver that legendary EV sound and performance.

ETX-10P—10-inch two-way powered loudspeaker system

- 2000 W amplifier and 134 dB peak SPL
- Single-knob DSP includes presets for multiple configurations and top+sub combinations (performance style, locations, and space)
- Loudspeaker system performance monitoring via integrated LCD and front panel LED
- SST design assures precise and consistent coverage
- Designed for floor, stacked, or tilt pole mount (0 or 7.5 degrees) for portable or permanent installation (Eight (8) M10 threaded suspension points)

ETX-12P—12-inch two-way powered loudspeaker system

- 2000 W amplifier and 135 dB peak SPL
- Single-knob DSP includes presets for multiple configurations and top+sub combinations (performance style, locations, and space)
- Loudspeaker system performance monitoring via integrated LCD and front panel LED
- SST design assures precise and consistent coverage
- Designed for floor, stacked, or tilt pole mount (0 or 7.5 degrees) for portable or permanent installation (Eight (8) M10 threaded suspension points)

ETX-15P—15-inch two-way powered loudspeaker system

- 2000 W amplifier and 135 dB peak SPL
- Single-knob DSP includes presets for multiple configurations and top+sub combinations (performance style, locations, and space)
- Loudspeaker system performance monitoring via integrated LCD and front panel LED
- SST design assures precise and consistent coverage
- Designed for floor, stacked, or tilt pole mount (0 or 7.5 degrees) for portable or permanent installation (Eight (8) M10 threaded suspension points)

ETX-35P—15-inch three-way powered loudspeaker system

- 2000 W amplifier and 136 dB SPL
- Single-knob DSP includes presets for multiple configurations and top+sub combinations (performance style, locations, and space)
- Loudspeaker system performance monitoring via integrated LCD and front panel LED
- Features three high-sensitivity transducers, for high output sound which is optimized for precise coverage and low distortion
- Designed for floor, stacked, or a combo pole cup (insert and threaded) for portable or permanent installation (Eight (8) M10 threaded suspension points)

ETX-15SP—15-inch powered subwoofer loudspeaker system

- 1800 W amplifier and 134 dB peak SPL
- Single-knob DSP includes presets for multiple configurations and top+sub combinations (performance style, locations, and space)
- Loudspeaker system performance monitoring via integrated LCD and front panel LED
- Includes DSP preset for true cardioid performance
- Enclosure includes removable casters and a combo pole cup (insert and threaded) for use with the two-way models

ETX-18SP—18-inch powered subwoofer loudspeaker system

- 1800 W amplifier and 135 dB peak
- Single-knob DSP includes presets for multiple configurations and top+sub combinations (performance style, locations, and space)
- Loudspeaker system performance monitoring via integrated LCD and front panel LED
- Includes DSP preset for true cardioid performance
- Enclosure includes removable casters and a combo pole cup (insert and threaded) for use with the two-way models

3 System overview

3.1 Technical specifications

ETX-10P, ETX-12P, and ETX-15P

	ETX-10P	ETX-12P	ETX-15P
Frequency Response (-3 dB):	85 Hz – 20 kHz[1]	55 Hz – 20 kHz[1]	48 Hz – 20 kHz[1]
Frequency Range (-10 dB):	65 Hz – 20 kHz[1]	43 Hz – 20 kHz[1]	40 Hz – 20 kHz[1]
Maximum SPL:	134 dB peak[2]	135 dB peak[2]	135 dB peak[2]
Coverage (H x V):	90° x 60°		
Power Rating:	2000 W		
LF Transducer:	SMX2100 254 mm (10 in)	SMX2120 300 mm (12 in)	SMX2150 380 mm (15 in)
HF Transducer:	DH3-B 1.25-in titanium compression driver		
Crossover Frequency:	1700 Hz	1600 Hz	1500 Hz
Connectors:	(2) XLR/TRS combo jack and (1) XLR link output		
Enclosure:	18 mm, 13-ply birch plywood with EVCoat		
Grille:	16AWG steel with powdercoat		
Suspension:	(8) M10 suspension points		
Dimensions (H x W x D):	526 mm x 330 mm x 365 mm (21 in x 13 in x 14 in)	613 mm x 381 mm x 400 mm (24 in x 15 in x 16 in)	691 mm x 431 mm x 447 mm (27 in x 17 in x 18 in)
Net Weight:	20.3 kg (44.8 lb)	23.6 kg (52.0 lb)	27.7 kg (61.1 lb)
Shipping Weight:	22.9 kg (50.5 lb)	26.8 kg (59.1 lb)	31.5 kg (69.5 lb)
Power Consumption:	100 – 240 V~, 50 – 60 Hz, 1.6 – 0.8 A[3]		

[1]Full space measurement using the music DSP preset.

[2]Maximum SPL is measured at 1 m using broadband pink noise at maximum output.

[3]Current rating is 1/8 power.

ETX-35P

	ETX-35P
Frequency Response (-3 dB):	48 Hz – 20 kHz[1]
Frequency Range (-10 dB):	38 Hz – 20 kHz[1]
Maximum SPL:	136 dB peak[2]
Coverage (H x V):	60° x 40°
Power Rating:	2000 W
LF Transducer:	SMX2151 380 mm (15 in)
MB Transducer:	EVS-6C 6.5-in mid-bass driver
HF Transducer:	DH3-B 1.25-in titanium compression driver
Crossover Frequency:	700 Hz, 2900 Hz
Connectors:	(2) XLR/TRS combo jack and (1) XLR link output
Enclosure:	18 mm, 13-ply birch plywood with EVCoat
Grille:	16AWG steel with powdercoat
Suspension:	(8) M10 suspension points
Dimensions (H x W x D):	1023 mm x 469 mm x 426 mm (40 in x 18 in x 17 in)
Net Weight:	38.2 kg (84.2 lb)
Shipping Weight:	42.8 kg (94.4 lb)
Power Consumption:	100 – 240 V~, 50 – 60 Hz, 1.6 – 0.8 A[3]

[1]Full space measurement using the music DSP preset.

[2]Maximum SPL is measured at 1 m using broadband pink noise at maximum output.

[3]Current rating is 1/8 power.

ETX-15SP and ETX-18SP

	ETX-15SP	ETX-18SP
Frequency Response (-3 dB):	37 Hz – 150 Hz[1]	33 Hz – 150 Hz1[1]
Frequency Range (-10 dB):	32 Hz – 180 Hz[1]	28 Hz – 180 Hz[1]
Maximum SPL:	134 dB peak[2]	135 dB peak[2]
Power Rating:	1800 W	
LF Transducer:	DVX3159A 380 mm (15 in)	DVX3180A 457 mm (18 in)
Low Pass Frequency:	Adjustable: 80 Hz, 100 Hz, 120 Hz, 150 Hz	
Connectors:	(2) XLR/TRS Combo Jack and (2) XLR link Output	
Enclosure:	18 mm, 13-ply birch plywood with EVCoat	
Grille:	16AWG steel with powdercoat	
Dimensions (H x W x D):	471 mm x 576 mm x 825 mm (19 in x 23 in x 32 in)	550 mm x 675 mm x 910 mm (22 in x 27 in x 36 in)
Dimensions (H x W x D): without casters	471 mm x 576 mm x 692 mm (19 in x 23 in x 27 in)	550 mm x 675 mm x 777 mm (22 in x 27 in x 31 in)
Net Weight:	41.7 kg (91.9 lb)	51.8 kg (114.2 lb)
Shipping Weight:	46.8 kg (103.2 lb)	58.9 kg (129.9 lb)
Power Consumption:	100 – 240 V~, 50 – 60 Hz, 1.6 – 0.8 A[3]	

[1]Half space measurement using the music DSP preset and 150 Hz low pass.
[2]Maximum SPL is measured at 1 m using broadband pink noise at maximum amplifier output.
[3]Current rating is 1/8 power.

3.2 Dimension drawings

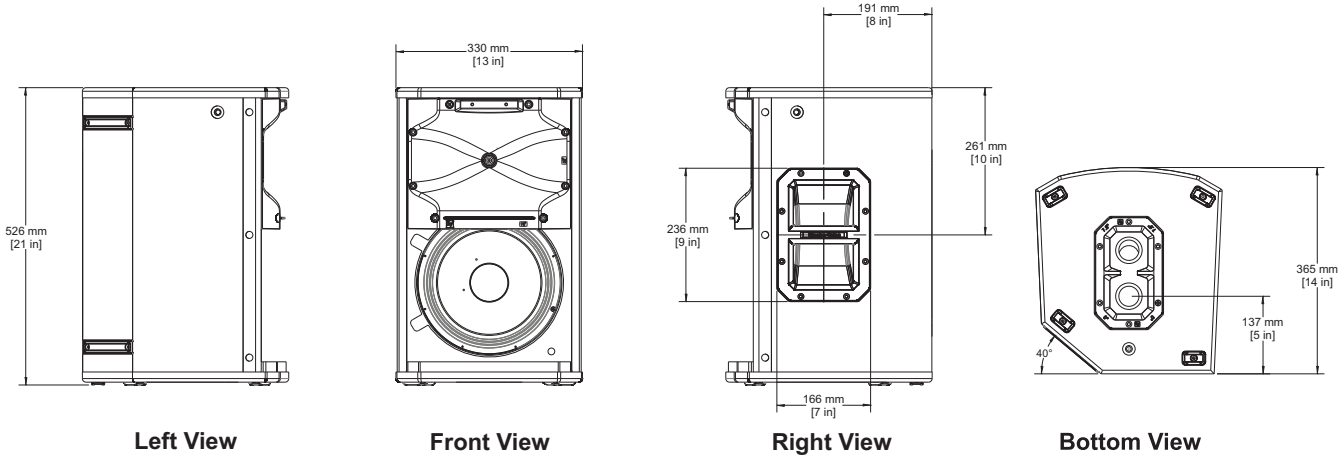


Figure 3.1: ETX-10P dimension drawing

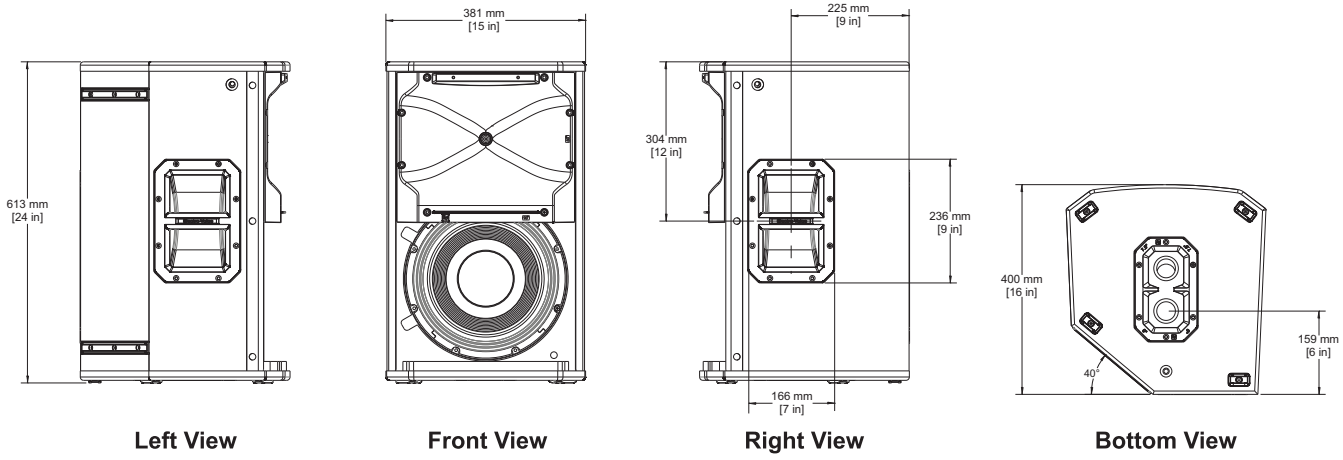


Figure 3.2: ETX-12P dimension drawing

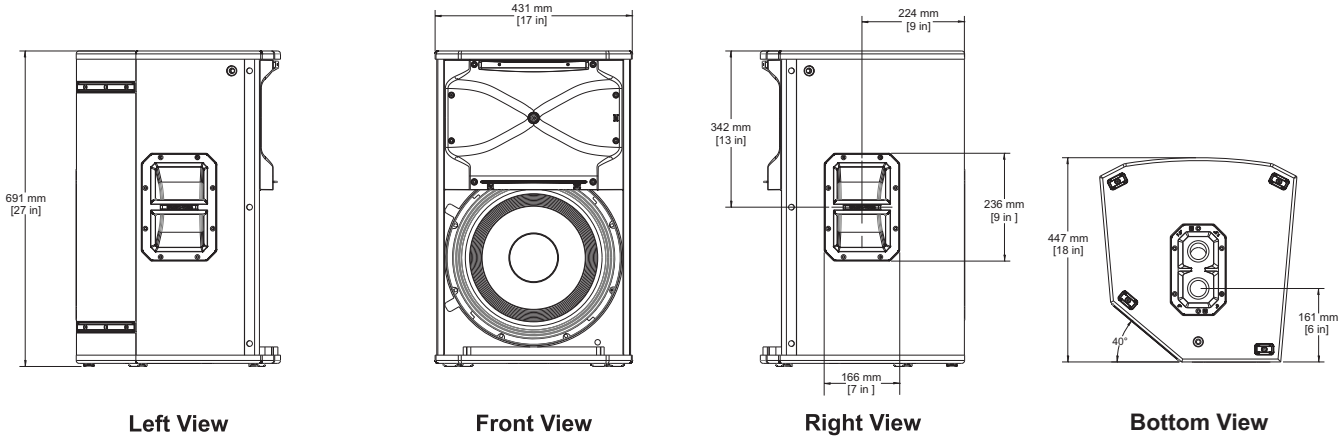


Figure 3.3: ETX-15P dimension drawing

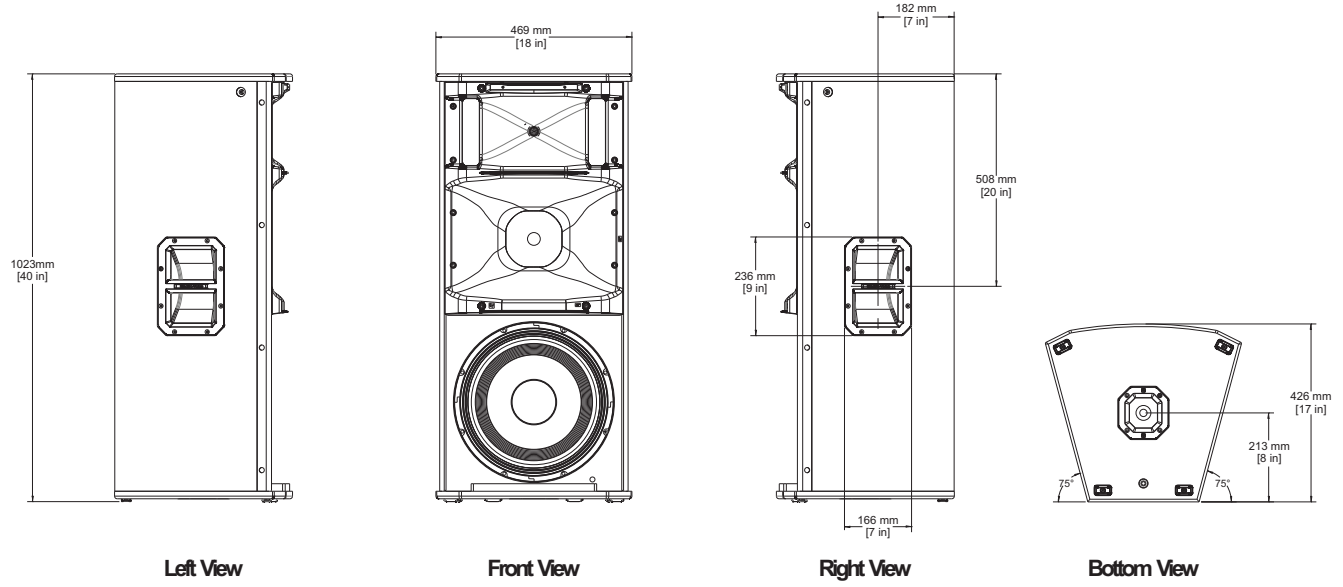


Figure 3.4: ETX-35P dimension drawing

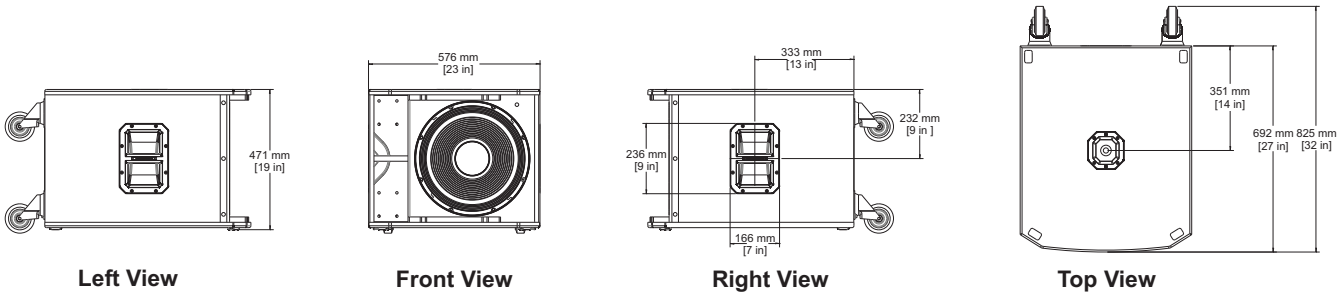


Figure 3.5: ETX-15SP dimension drawing

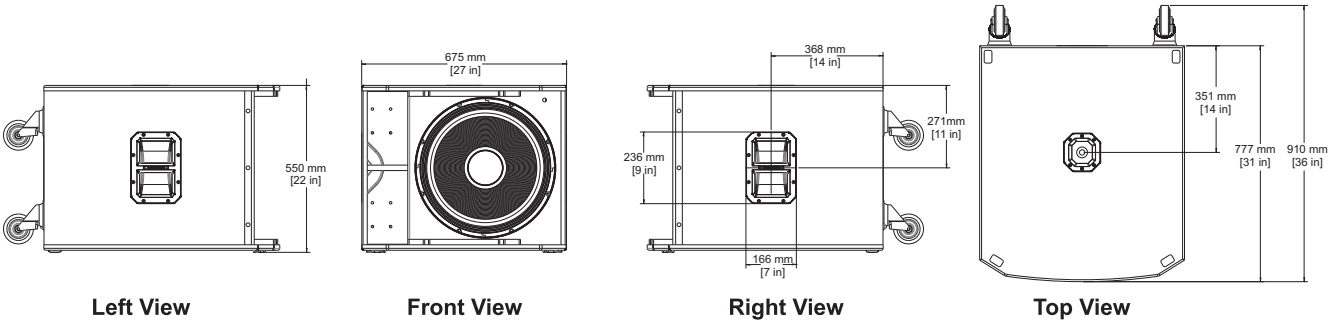


Figure 3.6: ETX-18SP dimension drawing

3.3 Frequency response graphs

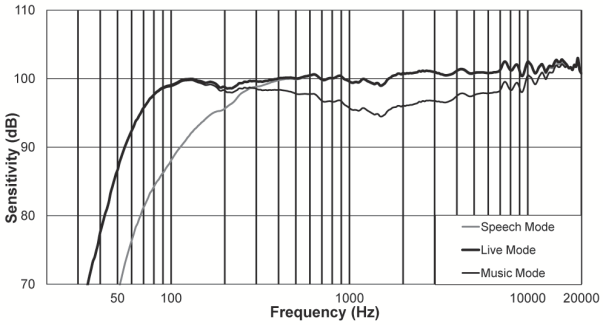


Figure 3.7: ETX-10P frequency response graph: speech, live, and music modes

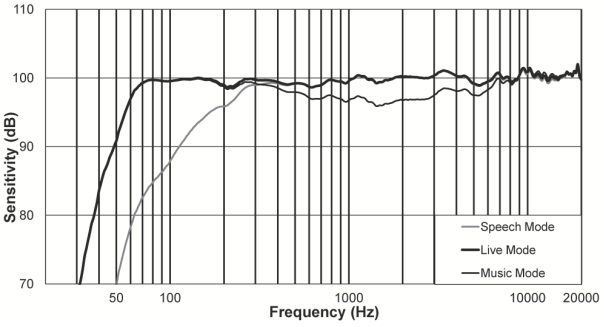


Figure 3.8: ETX-12P frequency response graph: speech, live, and music modes

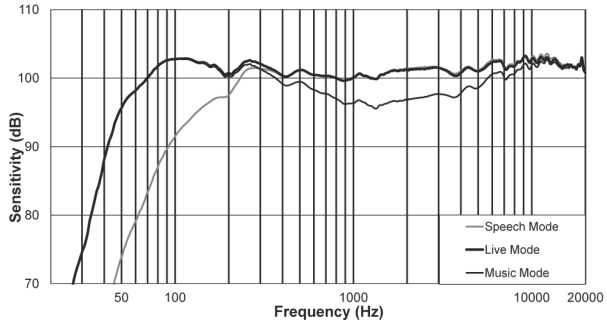


Figure 3.9: ETX-15P frequency response graph: speech, live, and music modes

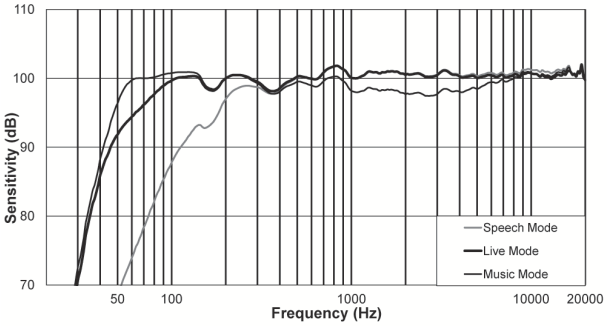


Figure 3.10: ETX-35P frequency response graph: speech, live, and music modes

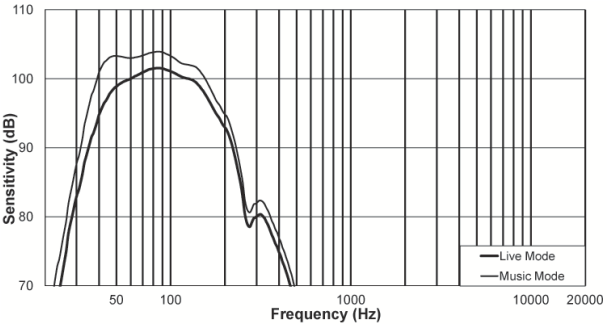


Figure 3.11: ETX-15SP frequency response graph: live and music modes

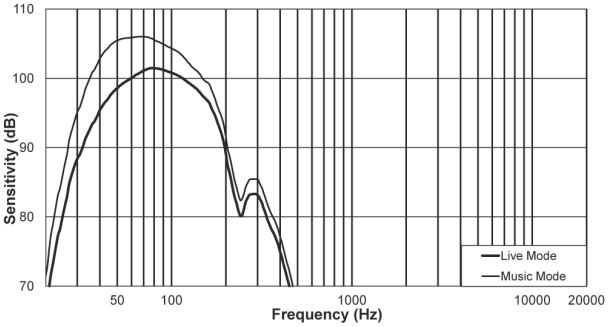


Figure 3.12: ETX-18SP frequency response graph: live and music modes

4 Operation

4.1 Tripod and floor monitor operation

Multi-angle pole cup

The multi-angle pole cup is used to position the ETX-10P, ETX-12P, and ETX-15P loudspeakers for optimal sound coverage. The multi-angle pole cup has two (2) positions 0° and 7.5°. The 0° position points the sound horizontally straight towards the audience. The 7.5° position points the sound at an angle towards the audience and is used when the loudspeaker is above the audience.

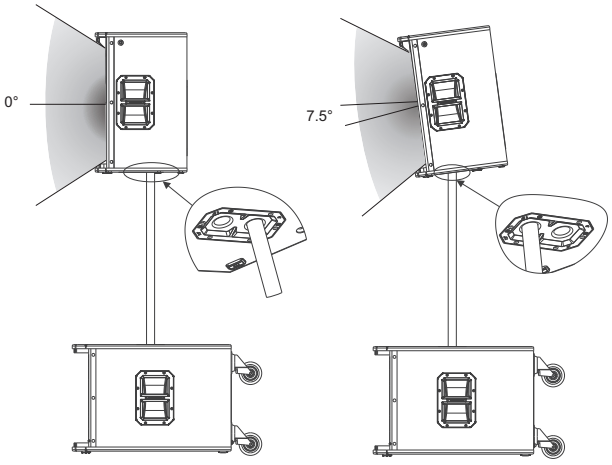


Figure 4.1: Optimal coverage multi-angle pole cup 0° (left) and multi-angle pole cup 7.5° (right)

Combo pole cup

ETX-35P, ETX-15SP, and ETX-18SP subwoofers use a M20 threaded and 35 mm (1 3/8 in) combination cup to be compatible with both types of poles. M20 threaded poles provide a more secure connection to the subwoofer than the standard 35 mm (1 3/8 in) pole. If using an M20 threaded pole with the ETX-35P, always place the threads into the subwoofer.

Tripod or pole mount

ETX-10P, ETX-12P, and ETX-15P loudspeakers mount on a tripod stand or on a pole above a subwoofer.

Mounting a loudspeaker on a tripod stand

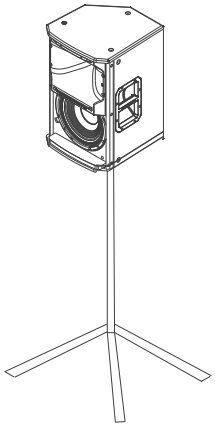


Figure 4.2: Full-Range models on tripod stand

Caution!

Tripod is not evaluated for safety with this loudspeaker. Check the specifications of the tripod stand to be certain it is capable of supporting the weight of the loudspeaker.

Caution!

Two (2) person lift and placement is recommended for the heavier loudspeakers. Single person lift and placement of heavier loudspeakers could cause injury.

To **mount a loudspeaker on a tripod stand**, do the following:

1. Place the **tripod stand** on a level stable surface.
   - Fully extend the legs on the tripod stand.
   - Do not compromise the tripod stands structural integrity by trying to make the stand taller.
   - Do not attempt to suspend more than one (1) loudspeaker on a stand designed for a single loudspeaker.
2. Using two (2) hands lift the **loudspeaker**.
3. Set the **multi-angle pole cup** located on the bottom of the loudspeaker onto the pole.

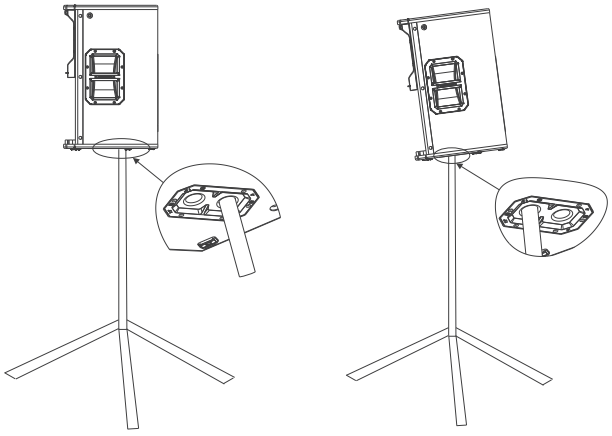


Figure 4.3: Multi-angle pole cup 0° (left) and multi-angle pole cup 7.5° (right)

Mounting a loudspeaker on a pole

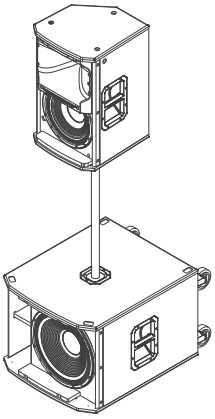
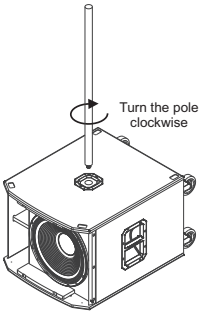


Figure 4.4: Full-Range/sub stack with pole mount

Caution!
Two (2) person lift and placement is recommended for the heavier loudspeakers. Single person lift and placement of heavier loudspeakers could cause injury.

To **mount a loudspeaker on a pole**, do the following:

1. Place the **subwoofer** on a level stable surface.
2. Insert the **M20 threaded pole** into the combo pole cup on the top of the subwoofer.



3. Turn the **M20 threaded pole** clockwise to secure the pole to the subwoofer.
4. Using two (2) hands lift the **loudspeaker**.
5. Set the **multi-angle pole cup** located on the bottom of the loudspeaker onto the pole.

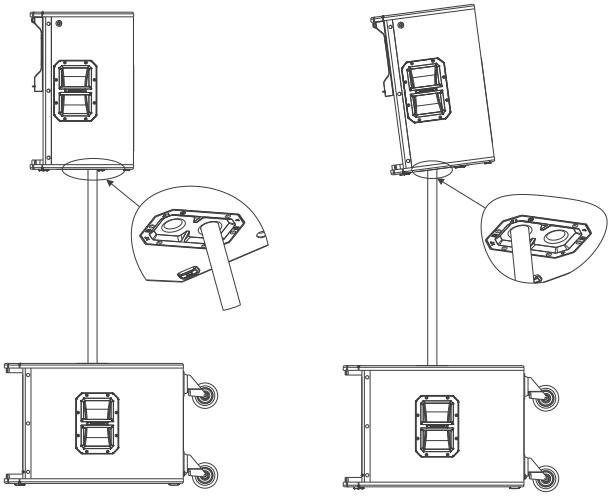


Figure 4.5: Multi-angle pole cup 0° (left) and multi-angle pole cup 7.5° (right)

Floor monitor

ETX-10P, ETX-12P, and ETX-15P loudspeakers may be used as a floor monitor by placing the speaker on the integral monitor angle.

To **set up a loudspeaker as a floor monitor**, do the following:

1. Place the **loudspeaker** on a level stable surface.
2. Safely route **cables** to prevent injury to performers, production crew, and audience members.

Notice!

Secure cables with wire ties or tape whenever possible.

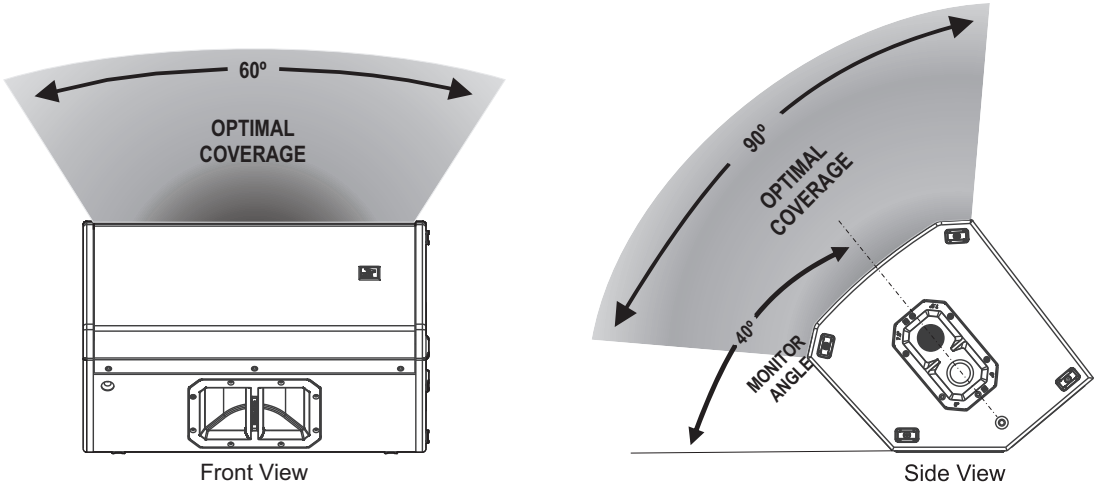


Figure 4.6: Optimum coverage in monitor position

4.2 Suspension

The ETX-10P, ETX-12P, ETX-15P, and ETX-35P enclosures have eight (8) M10 threaded points; six (6) points on top of the enclosure and two (2) points on the bottom. Forged shoulder eyebolts rated for overhead suspension may be used to suspend an individual loudspeaker, such as the EBK-M10 accessory.

Warning!

Suspending any object is potentially dangerous and should only be attempted by individuals who have a thorough knowledge of the techniques and regulations of suspending objects overhead. Electro-Voice strongly recommends all loudspeakers be suspended taking into account all current national, federal, state, and local laws and regulations. It is the responsibility of the installer to ensure all loudspeakers are safely installed in accordance with all such requirements. When loudspeakers are suspended, Electro-Voice strongly recommends the system be inspected at least once per year or as laws and regulations require. If any sign of weakness or damage is detected, remedial action should be taken immediately. The user is responsible for making sure the wall, ceiling, or structure is capable of supporting all objects suspended overhead. Any hardware used to suspend a loudspeaker not associated with Electro-Voice is the responsibility of others.

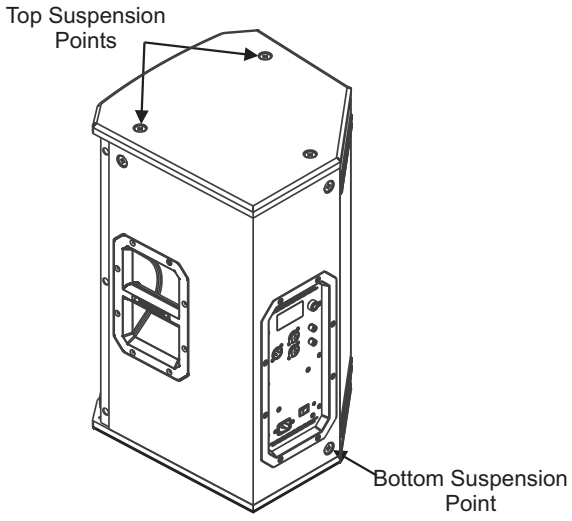


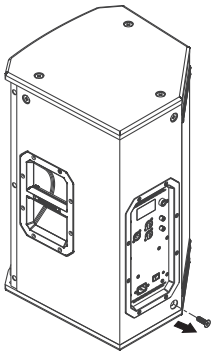
Figure 4.7: Suspension points

Prior to use, inspect the suspension points and associated hardware for any cracks, deformations, broken welds, corrosion, missing or damaged components which could reduce the suspension points strength. Replace any damaged hardware. Never exceed the limitations or maximum recommended load intended for the suspension points. As an added safety measure, it is suggested the user install an extra suspension point back to the building structural supports. This redundant safety point should have as little slack as possible (less than one (1) inch is preferable). Prior to each use, inspect the loudspeaker enclosures for any cracks, deformations, missing or damaged components, which could reduce enclosure strength. Replace any loudspeaker systems damaged or missing hardware.

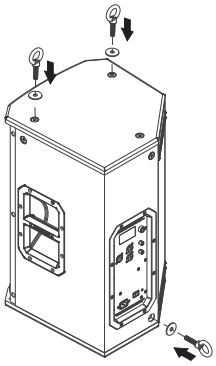
Installing the eyebolts

To **install the eyebolts**, do the following:

1. Remove the **M10 screws** from the suspension points.



2. Replace the **M10 screw** with the fender washer and eyebolts.



Notice!

If the eyebolts are removed reinstall the screws.

If the screws are not reinstalled air leaks occur in the enclosure, resulting in undesirable performance.

Warning!

Eyebolts must be fully seated and oriented in the plane of pull. Always use fender washers at least 1.5 inch in diameter and 1/16 inch thick under the eyebolt to distribute the load on the enclosure.

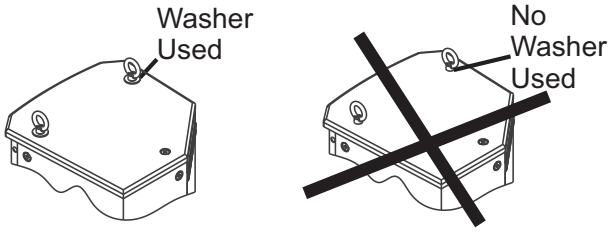


Figure 4.8: Eyebolt shown with and without washer

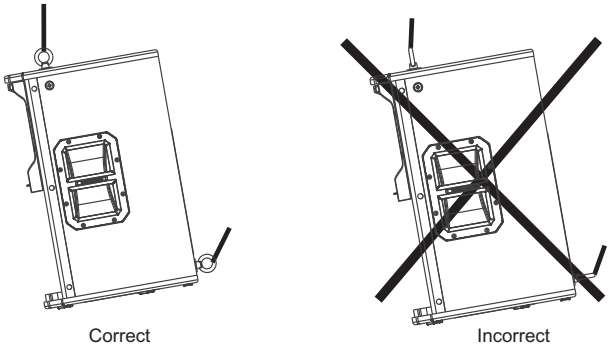


Figure 4.9: Eyebolts shown oriented in the plane of pull

Warning!
Never exceed the limitations or maximum recommended working load for Electro-Voice loudspeakers.
Disregarding this warning could result in serious injury or death.

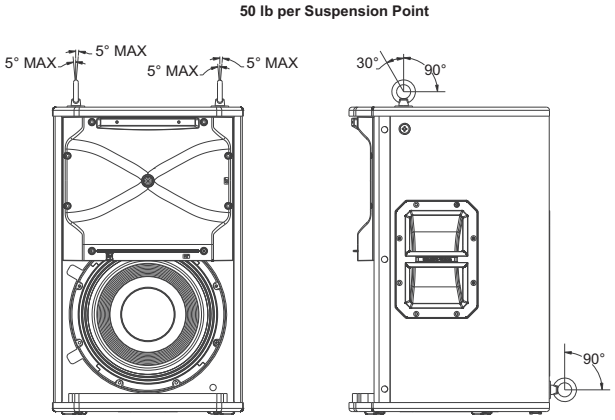


Figure 4.10: Maximum working load - vertical orientation

Warning!
Never suspend ETX Powered Loudspeakers in a vertical column array.
Disregarding this warning could result in serious injury or death.

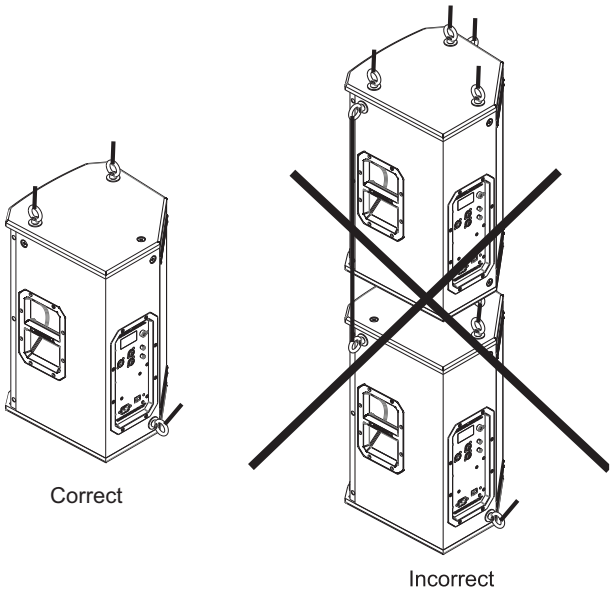


Figure 4.11: Loudspeaker vertical suspension

4.3 Amplifier DSP controls

The amplifier has a combination of controls and connectors to ensure the most versatile loudspeaker system.

Full-Range loudspeaker control and monitoring interface
The full-range loudspeaker DSP control menu selections are available for the ETX-10P, ETX-12P, ETX-15P, and ETX-35P.

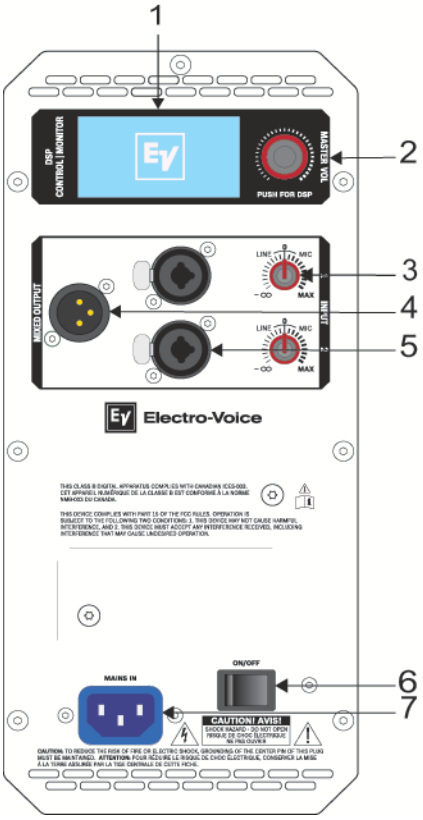


Figure 4.12: Full-Range loudspeaker amplifier panel

1. **LCD** – DSP control and monitoring interface.
2. **MASTER VOL** – Adjusts the sound level.
   DSP – Scroll through the menu and select the available choices. Push the MASTER VOL knob to enter the DSP menu.
3. **INPUT LEVEL** – Level control for adjusting the individual inputs' level. The 12 o'clock position is unity gain (no gain or attenuation), the range to the left of zero (0) is for adjusting line level sources, and the range to the right of zero (0) is for adjusting microphone levels. LINE and MIC input level control is available for both INPUT 1 and INPUT 2.
4. **MIX OUTPUT** – XLR output sends the mix of both input signals to another loudspeaker or subwoofer. INPUT LEVEL controls the signal level to MIX OUTPUT. The MASTER VOL or DSP control settings do not affect MIX OUTPUT.
5. **INPUT** – Balanced input for the connection of signal sources like mixing consoles, instruments, or microphones. Connections can be established using ¼ inch TRS or XLR connectors.
6. **POWER** – AC switch for switching the power ON or OFF. The LCD screen lights up when the POWER is turned ON.

7. **MAINS IN** – AC connection is established via an IEC-connector. The IEC-connector is compatible with locking type power cords (not included).

Subwoofer control and monitoring interface

The subwoofer DSP control menu selections are available for the ETX-15SP and ETX-18SP.

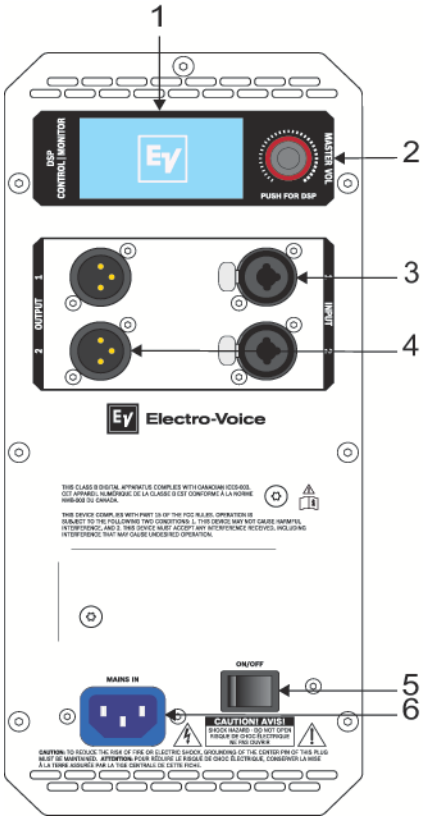


Figure 4.13: Subwoofer amplifier panel

1. **LCD** – DSP control and monitoring interface.
2. **MASTER VOL** – Adjusts the sound level.
   DSP – Scroll through the menu and select the available choices. Push the MASTER VOL knob to enter the DSP menu.
3. **INPUT** – Balanced input for the connection of signal sources like mixing consoles, instruments, or microphones. Connections can be established using ¼ inch TRS or XLR connectors.
4. **OUTPUT** – XLR output sends the input signal to another loudspeaker or subwoofer. INPUT 1 is linked to OUTPUT 1 and INPUT 2 is linked to OUTPUT 2. The MASTER VOL or DSP control settings do not affect MIX OUTPUT.
5. **POWER** – AC switch for switching the power ON or OFF. The LCD screen lights up when the POWER is turned ON.
6. **MAINS IN** – AC connection is established via an IEC-connector.

See also

- *DSP controls, page 27*

4.4 System status

Normal system status

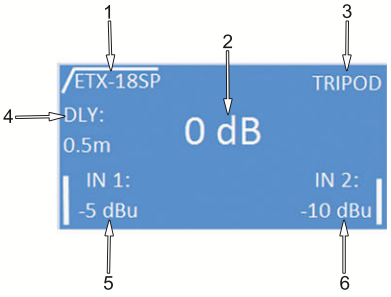


Figure 4.14: Normal system status home screen

1. **LOW PASS/HIGH PASS** – Displays the high pass or low pass frequency of the system. For full-range models, this indicates the high pass frequency selected. If no subwoofer is used, the display indicates NO SUB. For subwoofer models, this indicates the low pass frequency selected.
2. **MASTER VOL** – Indicates the master gain of the system. The range is from mute to +10 dB, in 1 dB increments.
3. **LOCATION** – Displays the location setting.
4. **DLY (delay)** – Displays the amount of delay.
5. **INPUT 1 METER** – Displays the signal level of INPUT 1 in dBu. The meter is post INPUT 1 gain control, but before MASTER VOL control. At signals above +18 dBu, the input indicates CLIP.
6. **INPUT 2 METER** – Displays the signal level of INPUT 1 in dBu. The meter is post INPUT 2 gain control, but before MASTER VOL control. At signals above +18 dBu, the input indicates CLIP.

System protection

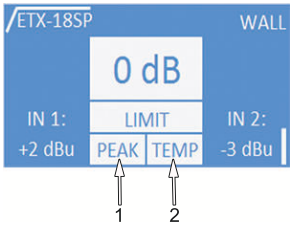


Figure 4.15: System status limit

1. **PEAK limiter** – The peak anticipation limiter protects the loudspeaker from short-term peaks which can cause distortion. Short-term blinking is not critical because the integrated limiter keeps distortion under control. Constant lighting of PEAK indicates the sound is negatively affected. Reducing the output volume (MASTER VOL) is strongly recommended to reduce gain.
2. **TEMP limiter** – The temp limiter protects the transducer from thermal failures by reducing the gain. The TEMP LIMITER will flash if any gain reduction is being done.

Output reduction

Figure 4.16: System protect

Under certain circumstances, the amplifier protects itself and reduces the output gain in order prevent shutdown in adverse conditions. This may occur when the mains voltage is very low or high, or when the ambient temperature is very high. The system returns to its original output if the adverse conditions are corrected.

4.5 DSP controls

An integrated DSP control menu allows the user to select multiple DSP system settings on the loudspeaker.

To **access the DSP controls menu,** do the following:

1. Push the **MASTER VOL** knob.
   The DSP Control menu appears.

2. Using the MASTER VOL knob, scroll through the **menu items**.
3. Push the **MASTER VOL** knob to select the menu item you want to modify.
   The focus moves to the menu items on the right side of the DSP menu.

4. Using the MASTER VOL knob, scroll through the **menu items**.

5. Push the **MASTER VOL** knob to confirm the selected menu items.
   The setting is saved. The focus returns to the menu items on the left side of the DSP menu.

6. Repeat **steps 2** through **5** to modify additional DSP and system settings.
7. Select **EXIT** to return to the home screen.

4.5.1 Full-Range loudspeaker DSP control menu

The full-range loudspeaker DSP control menu selections are available for the ETX-10P, ETX-12P, ETX-15P, and ETX-35P loudspeakers.

EXIT Menu

The **Exit** menu is used to return to the home screen.

Notice!

The display returns to the home screen after two (2) minutes of inactivity.

FUNCTION Menu

The **Function** menu is used to configure the type of sound the loudspeaker delivers. Available options for this selection are: MUSIC, LIVE, and SPEECH.

- **MUSIC** – is used for recorded music playback and EDM applications. (Default)
- **LIVE** – is used for live sound applications.
- **SPEECH** – is used for spoken word applications.

LOCATION Menu

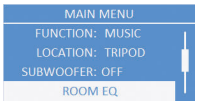
The **Location** menu is used to optimize the loudspeaker for different boundaries.
ETX-10P, ETX-12P, and ETX-15P: Available options for this selection are: TRIPOD, MONITOR, WALL, and SUSPEND. ETX-35P: Available options for this selection are: TRIPOD, ARRAY, WALL, and SUSPEND.

- **TRIPOD** – is used when the loudspeaker is placed on a tripod stand or placed on a pole. (Default)
- **MONITOR** – is used when the loudspeaker is placed on the angled monitor panel in monitor position (Available for the ETX-10P, ETX-12P, and ETX-15P). This setting compensates for the amount of low frequency boost created by placing the speaker close to the floor.
- **ARRAY** – is used when the loudspeaker is part of an array, two (2) boxes side by side using the array bracket kit (Available for the ETX-35P; Array Bracket Kit accessory sold separately). This setting compensates for the effects of placing two (2) loudspeakers in an array.
- **WALL** – is used when the loudspeaker is mounted to the wall using the mounting bracket (Mounting Bracket accessory sold separately). This setting compensates for the amount of low frequency boost created by placing the loudspeaker close to the wall. If used on a column, it is recommended to use the SUSPEND mode.
- **SUSPEND** – is used when the loudspeaker is suspended in a 3-point suspension by eyebolts.

SUBWOOFER Menu

The **Subwoofer** menu is used to select a high pass frequency for use with a subwoofer or a matched subwoofer. Available options for this selection are: OFF, 80Hz, 100Hz, 120Hz, 150Hz, ETX-15SP, and ETX-18SP. The high passes are 24 dB/octave Linkwitz/Riley crossovers. The 80 Hz, 100 Hz, 120 Hz, and 150 Hz choices are generic high pass settings for use with other subwoofers. The ETX-15SP and ETX-18SP settings are specifically optimized for subwoofers by including delay for best summation.

The default is *OFF*.



ROOM EQ Menu

The **Room EQ** menu is a 3-band EQ (Equalizer) the user can fine tune beyond the FUNCTION and LOCATION. Available options for this selection are: PEQ1, PEQ2, and PEQ3.

BACK		
PEQ1, PEQ2, PEQ3:	ETX-10P Range: 60 Hz – 20.0 kHz ETX-12P Range: 50 Hz – 20.0 kHz ETX-15P Range: 45 Hz – 20.0 kHz ETX-35P Range: 40 Hz – 20.0 kHz	Default: 0 dB Range: -12 dB – +6 dB Q: 1.2

Notice!

The Room EQ range shown is the factory default range with a stand alone loudspeaker. When a subwoofer is selected, any EQ below the crossover point will be bypassed.

To **use the EQ above the crossover point**, do the following:

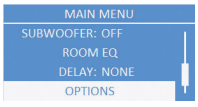
> Rotate the encoder to the desired frequency.

The BYPASS will be removed.

DELAY Menu

The **Delay** menu is used to create time alignment with other loudspeakers. Available options for this selection are: NONE or a delay up to 343 m. The delay can be changed in 0.25 meter increments. If the unit of measure is feet, available options for this selection are: NONE or a delay up to 1125 ft. The delay can be changed in one (1) foot increments.

The default is *NONE*.



OPTIONS Menu

The **Options** menu is used to configure the DSP menu, LCD screen, and system. You can also configure the accessibility of the menu as well as reset the modified settings to factory default.

BACK Menu

The **Back** menu is used to return to the main menu.

FRONT LIGHT Menu

The **Front Light** menu shows power on and indicates limit. Available options for this selection are: ON, OFF or LIMIT.

- **ON** – turns the LED on when the power to the loudspeaker is ON. (Default)
- **OFF** – turns the LED off.

LIMIT – turns the LED off under normal operation. The LED brief blinking indicates the power amplifier is operated at its limits. Short-term blinking is not critical because the integrated limiter keeps distortion under control. Constant lighting of the LED indicates the sound is negatively affected. Reducing the output volume is strongly recommended.

MEASUREMENT Menu

The **Measurement** menu is used to select the unit of measure for the delay. Available options for this selection are: METERS or FEET.
The default is *METERS*.

DISPLAY BRIGHTNESS Menu

The **Display Brightness** menu is used to determine the brightness of the LCD. The range is 1 to 10.
The default is *five (5)*.

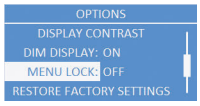
DISPLAY CONTRAST Menu

The **Display Contrast** menu is used to determine the contrast on the LCD. The range is -10 to +10.
The default is *zero (0)*.

DIM DISPLAY Menu

The **Dim Display** menu is used to dim the display when the display is idle for two (2) minutes. Available options for this selection are: ON or OFF.
The default is *ON*.

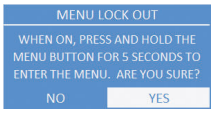
MENU LOCK Menu



The **Menu Lock** menu is designed to prevent users from inadvertently changing settings. Available options for this selection are: ON or OFF.
The default is *OFF*.
To **turn menu lock on**, do the following:

1. From the DSP menu, scroll to **MENU LOCK**.

2. Select **ON**.
   The Menu lock out message appears.



3. Select **YES**.
   The menu lock feature is turned on and the LCD displays a lock symbol.

Notice!
If menu lock is ON, the user is allowed to adjust the MASTER VOL.

To **unlock the DSP menu**, do the following:
> Press and hold the **MASTER VOL knob** for 5 seconds.
The DSP menu unlocks.

RESET FACTORY SETTTINGS Menu

The **Reset Factory Settings** menu is used to reset the loudspeaker to original factory settings. Available options for this selection are: NO or YES. The default selection is *NO*.

To **reset the system to original factory settings**, do the following:

1. From the DSP menu, select **RESET FACTORY SETTINGS**.
   The restore factory settings message appears.

2. Select **YES.**
   The loudspeaker restarts and resets the system to the original factory settings.

INFORMATION Menu

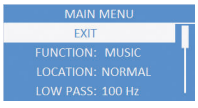
The **Information** menu is used to display the preset version, firmware version, and build date.

See also

- *Suspension, page 20*
- *System status, page 26*

4.5.2 Subwoofer DSP control menu

The subwoofer DSP control menu selections are available for the ETX-15SP and ETX-18SP subwoofers.

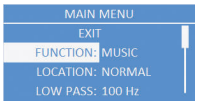


EXIT Menu

The **Exit** menu is used to return to the home screen.

Notice!

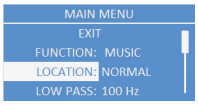
The display returns to the home screen after two (2) minutes of inactivity.



FUNCTION Menu

The **Function** is used to configure the type of sound the subwoofer delivers. Available options for this selection are: MUSIC and LIVE.

- **MUSIC** – is used for recorded music playback and EDM applications. (Default)
- **LIVE** – is used for live sound applications.



LOCATION Menu

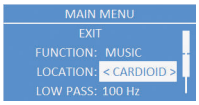
The **Location** menu is used to control output of the subwoofer when used in arrays with other subwoofers.

Available options for this selection are: NORMAL and CARDIOID.

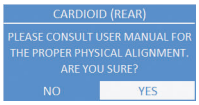
- **NORMAL** – is used for a single subwoofer, or an array of subwoofers where the desired output is effectively omnidirectional. This setting should also be used for the front firing subwoofers in a cardioid array. Under most circumstances, the subwoofer should be set to NORMAL. (Default)
- **CARDIOID** – should ONLY be used on the rear firing subwoofers in cardioid arrays.

To **set up cardioid**, do the following:

1. From the DSP menu, scroll to **LOCATION**.

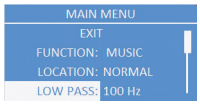


2. Select **CARDIOID**.
   The CARDIOID (REAR)... message appears.



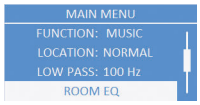
3. Select **YES**.
   The location is set to cardioid.

LOW PASS Menu



The **Low Pass** menu is used to select low pass frequency for proper summation with a full-range loudspeaker. Available options for this selection are: 80 Hz, 100 Hz, 120 Hz, 150 Hz, ETX-10P, ETX-12P, ETX-15P and ETX-35P. The low passes are 24 dB/octave Linkwitz/Riley slopes. The 80 Hz, 100 Hz, 120 Hz, and 150 Hz selections are generic low pass settings for use with other full-range loudspeaker systems. The ETX-10P, ETX-12P, ETX-15P, and ETX-35P settings are specifically optimized for ETX Powered Loudspeaker by including delay for best summation.
The default is *100 Hz*.

ROOM EQ

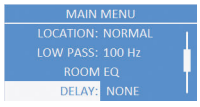


The **Room EQ** menu is a single-band EQ the user can fine tune beyond the function and location. Available option for this selection is: PEQ1.

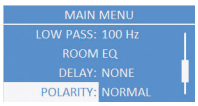
BACK		
PEQ1:	Default: 50 Hz ETX-15SP Range: 35 Hz to 100 Hz ETX-18SP Range: 30 Hz to 100 Hz	Default: 0 dB Range: -12 dB to +6 dB Q: 2.0

Notice!
The Room EQ range shown is the factory default settings on a stand alone subwoofer. Room EQ low frequency range is dependant on the low pass setting selected.

DELAY Menu



The **Delay** menu is used to create time alignment with other subwoofers. Available options for this selection are: NONE or a delay up to 343 m. The delay can be changed in 0.25 meter increments. If the unit of measure is feet, available options for this selection are: NONE or a delay up to 1125 ft. The delay can be changed in one (1) foot increments.
The default is *NONE*.



POLARITY Menu

The **Polarity** menu is used to change the polarity of the subwoofer system. Available options for this selection are: NORMAL and REVERSE.

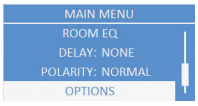
- **NORMAL** – A positive signal into the subwoofer produces a positive sound pressure. (Default)
- **REVERSE** – A positive signal into the subwoofer produces a negative sound pressure.

Notice!

If one (1) subwoofer is set to NORMAL and another subwoofer is set to REVERSE, the output of the subwoofers cancels acoustically.

Ensure all subwoofers in a system are set to the same polarity of the output so the subwoofers sum properly. Under most circumstances, the polarity of the subwoofer should be set to NORMAL.

OPTIONS Menu



The **Options** menu is used to configure the DSP menu, LCD screen, and system. You can also configure the accessibility of the menu as well as reset the modified settings to factory default.

BACK Menu

The **Back** menu is used to return to the main menu.

FRONT LIGHT Menu

The **Front Light** menu shows power on and indicates limit. Available options for this selection are: ON, OFF or LIMIT.

- **ON** – turns the LED on when the power to the loudspeaker is ON. (Default)
- **OFF** – turns the LED off.

LIMIT – turns the LED off under normal operation. The LED brief blinking indicates the power amplifier is operated at its limits. Short-term blinking is not critical because the integrated limiter keeps distortion under control. Constant lighting of the LED indicates the sound is negatively affected. Reducing the output volume is strongly recommended.

MEASUREMENT Menu

The **Measurement** menu is used to select the unit of measure for the delay. Available options for this selection are: METERS or FEET.

The default is *METERS*.

DISPLAY BRIGHTNESS Menu

The **Display Brightness** menu is used to determine the brightness of the LCD. The range is 1 to 10.

The default is *five (5)*.

DISPLAY CONTRAST Menu

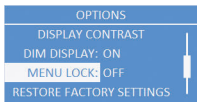
The **Display Contrast** menu is used to determine the contrast on the LCD. The range is -10 to +10.

The default is *zero (0)*.

DIM DISPLAY Menu

The **Dim Display** menu is used to dim the display when the display is idle for two (2) minutes. Available options for this selection are: ON or OFF.

The default is *ON*.

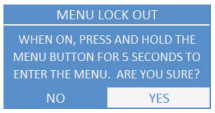


MENU LOCK Menu

The **Menu Lock** menu is designed to prevent users from inadvertently changing settings.
Available options for this selection are: ON or OFF.
The default is *OFF*.
To **turn menu lock on**, do the following:

1. From the DSP menu, scroll to **MENU LOCK**.

2. Select **ON**.
   The Menu lock out message appears.



3. Select **YES**.
   The menu lock feature is turned on and the LCD displays a lock symbol.

Notice!
If menu lock is ON, the user is allowed to adjust the MASTER VOL.

To **unlock the DSP menu**, do the following:
> Press and hold the **MASTER VOL knob** for 5 seconds.
The DSP menu unlocks.

RESET FACTORY SETTTINGS Menu

The **Reset Factory Settings** menu is used to reset the loudspeaker to original factory settings.
Available options for this selection are: NO or YES. The default selection is *NO*.
To **reset the system to original factory settings**, do the following:

1. From the DSP menu, select **RESET FACTORY SETTINGS**.
   The restore factory settings message appears.

2. Select **YES.**
   The loudspeaker restarts and resets the system to the original factory settings.

INFORMATION Menu

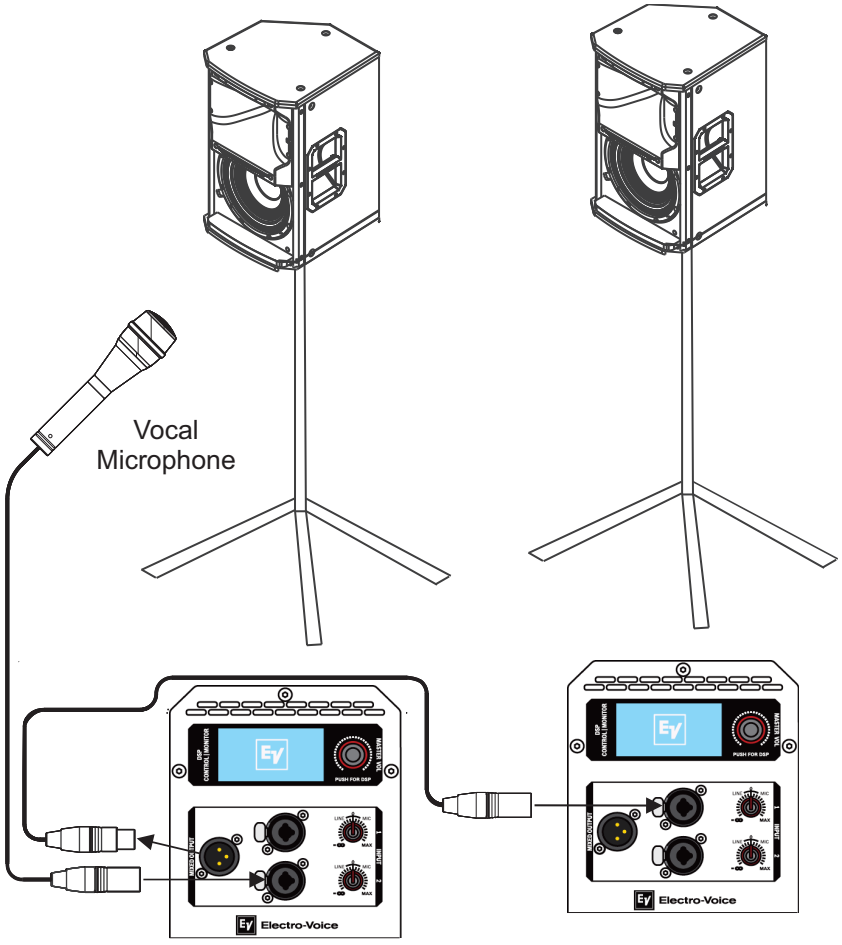
The **Information** menu is used to display the preset version, firmware version, and build date.

See also

- *System status, page 26*
- *Subwoofer cardioid array, page 38*

4.6 Recommended configurations

4.6.1 Daisy-chaining full-range systems



Notice!
The direction of the arrow indicates the signal path.

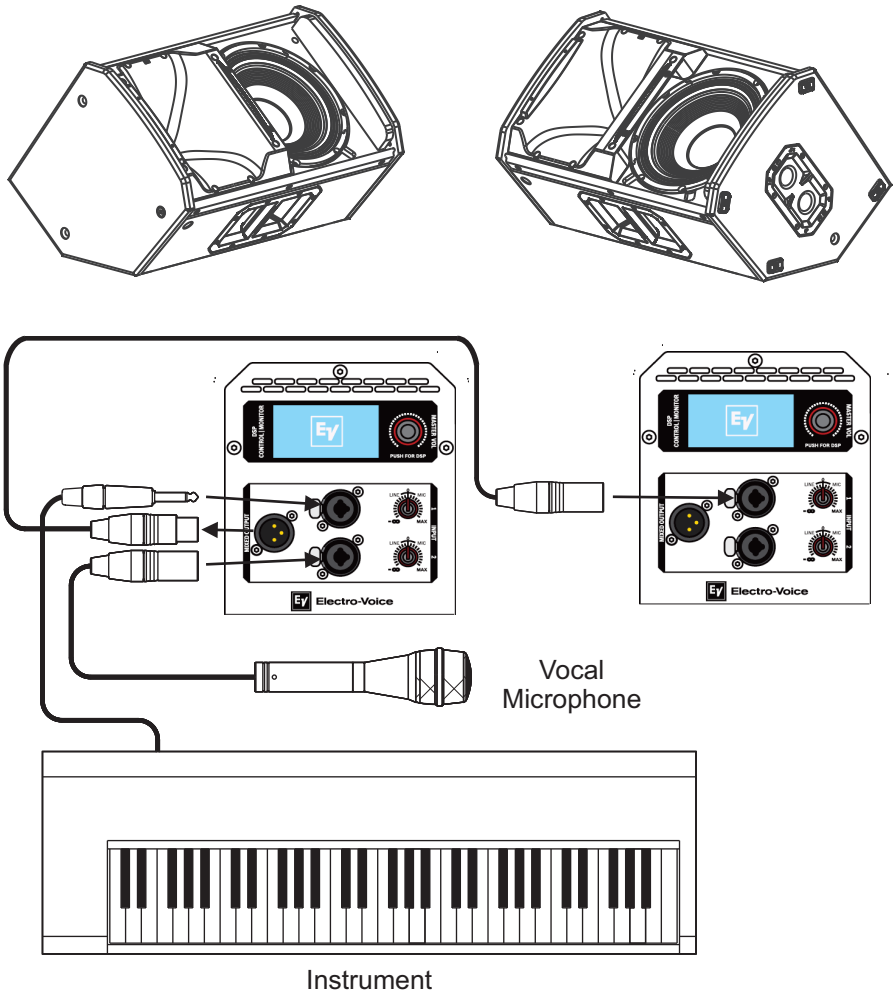
Location:	Tripod
Function:	Speech
Subwoofer:	Off

Table 4.1: DSP settings loudspeaker on a tripod

See also

- *Full-Range loudspeaker DSP control menu, page 28*

4.6.2 Using full-range systems as monitors



Notice!
The direction of the arrow indicates the signal path.

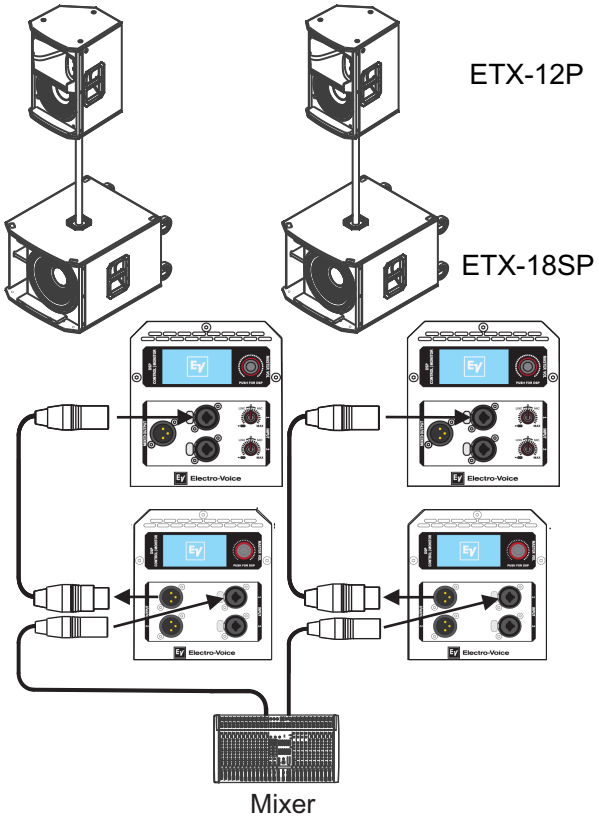
Location:	Monitor
Function:	Live
Subwoofer:	Off

Table 4.2: DSP settings loudspeaker as a monitor

See also

- *Full-Range loudspeaker DSP control menu, page 28*

4.6.3 Stacking full-range systems with subwoofers



Notice!
The direction of the arrow indicates the signal path.

ETX-12P	
Location:	Tripod
Function:	Live
Subwoofer:	ETX-18SP
ETX-18SP	
Location:	Normal
Function:	Live
High Pass:	ETX-12P

Table 4.3: DSP settings loudspeaker and subwoofer stacked

See also

- *Full-Range loudspeaker DSP control menu, page 28*
- *Subwoofer DSP control menu, page 31*

4.6.4 Subwoofer cardioid array

Subwoofer cardioid array

The ETX-15SP and ETX-18SP subwoofers have cardioid array processing originally developed for Electro-Voice concert subwoofer systems. Cardioid subwoofer arrays can be used to direct the output of an array of subwoofers in order to limit excessive amounts of bass in undesired areas. These arrays can be used to keep bass off of a stage, provides more consistent bass coverage in the audience, and reduces bass in the surrounding area.

Multiple ETX-15SP or ETX-18SP can be arrayed to create a cardioid polar pattern. See Cardioid pattern top view. The cardioid setting in the DSP menu is optimized to produce a rear rejection of up to 30 dB without any additional processing. The rejection may be less in smaller indoor environments than in larger outdoor environments. For best performance, adhere to the following guidelines:

- The subwoofers must all be the same model, for example all ETX-15SP or all ETX-18SP.
- The subwoofers must be physically placed in one (1) of the options shown. See Cardioid physical alignment.
- Front firing subwoofers use the NORMAL location setting, and rear firing subwoofers use the CARDIOID setting. All other settings should be the same between front and rear firing subwoofers.
- To add delay to the cardioid array, add the same amount to both the front and rear facing subwoofers.

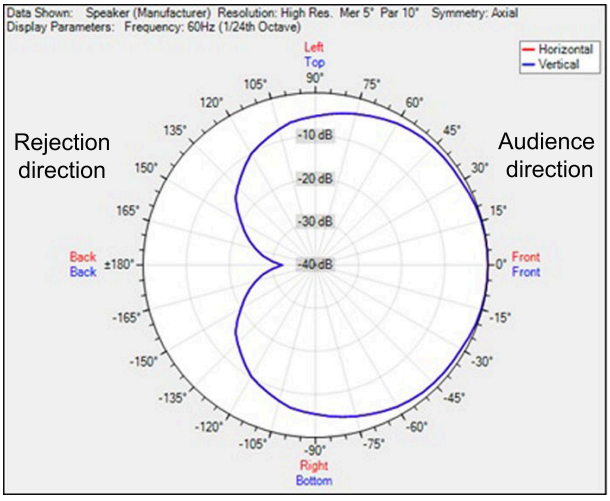


Figure 4.17: Cardioid pattern top view

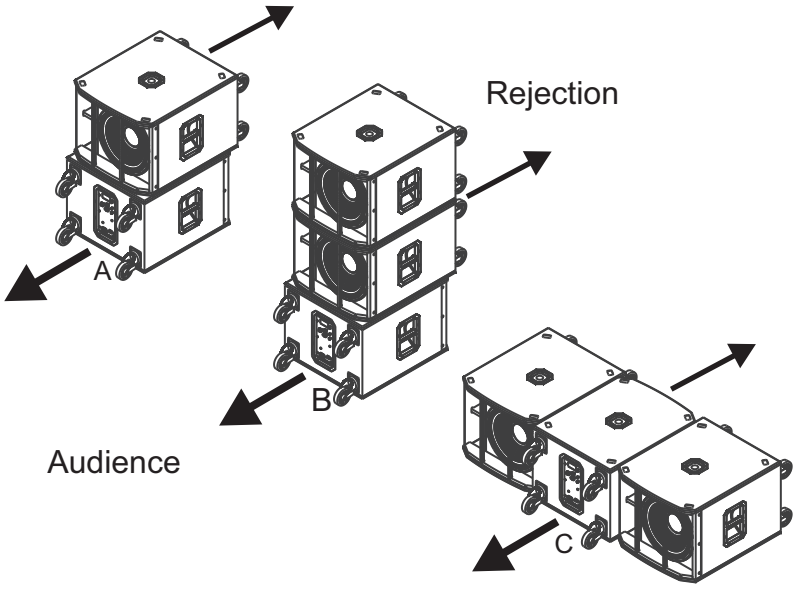


Figure 4.18: Cardioid physical alignment

Cardioid option A:
Either two (2) ETX-15SP or two (2) ETX-18SP subwoofers orientated vertically. Direct the top subwoofer towards the audience and the bottom subwoofer away from the audience (Rejection direction).
Cardioid option B:
Either three (3) ETX-15SP or three (3) ETX-18SP subwoofers orientated vertically. Direct the top two (2) subwoofers towards the audience and the bottom subwoofer away from the audience (Rejection direction).
Cardioid option C:
Either three (3) ETX-15SP or three (3) ETX-18SP subwoofers orientated horizontally. Direct the left and right subwoofers towards the audience and the center subwoofer away from the audience (Rejection direction).

Subwoofers facing the audience	
Location:	Normal
Polarity:	Normal
Delay:	0 m (zero)
Subwoofers facing away from the audience (Rejection direction)	
Location:	Cardioid
Polarity:	Normal
Delay:	0 m (zero)

Table 4.4: Subwoofer cardioid

For more information about cardioid arrays, see ETX-15SP or ETX-18SP product pages on www.electrovoice.com.

See also
- *Subwoofer DSP control menu, page 31*

4.7 Removing the subwoofer caster wheels

The ETX-15SP and ETX-18SP subwoofers have caster wheels attached for easy transportation in portable applications. The caster wheels are removable for a permanent installation.

To **remove the subwoofer caster wheels**, do the following:

1. Remove **the 16 M6 screws, 16 washers, and four (4) casters** on the rear of the subwoofer.
2. Install the **16 M6 screws and 16 washers** back into the rear of the subwoofer.
   Ensure all 16 M6 screws are tight.

Notice!

If the caster wheels are removed reinstall the screws.

If the screws are not reinstalled air leaks occur in the enclosure, resulting in undesirable performance.

5 Troubleshooting

Problem	Possible Cause(s)	Action
1. No Sound	Amplifier	Connect a known working test loudspeaker to the amplifier outputs. If there is no sound, verify all the electronics are on, the signal routing is correct, the source is active; the volume is turned up, etc. Correct/repair/replace as necessary. If there is sound, the problem is wiring.
	Wiring	Verify you have connected the correct cables to the amplifier. Play something at a low level through the amplifier. Connect the test loudspeaker in parallel with the malfunctioning line. If the sound level is gone or is very weak, the line has a short in it (possibly a severe scrape, pinch, or a missed connection). Using the test loudspeaker, move down the line and test each connection/junction until you find the problem and correct it. Observe proper polarity.
2. Poor Low-Frequency Response	With SUB menu-cross-over frequency activated	If no subwoofers are used with the system, select the OFF position.
3. Intermittent output such as cracking or distortion	Faulty Connection	Check all connections at amplifier and loudspeakers to ensure they are all clean and tight. If the problem persists, check the wiring. See problem 1.
4. Constant noise such as buzzing, hissing or humming	Defective source or other electronic device	If noise is present, but no program material is playing, evaluate each component as necessary to isolate the problem. Most likely there is a break in the signal path.
	Poor system grounding or ground loop	Check and correct the system grounding, as required.
	Input gain knob is not in the MIC position	Slowly increase the input gain knob level to engage the microphone pre-amp.
5. No sound produced with microphone connected to INPUT 1 or INPUT 2	Microphone requires phantom power	Use a dynamic microphone that does not require phantom power. If using a microphone requiring phantom power, an external phantom power source is needed.
	Input gain knob is not in the MIC position	Slowly increase the input gain knob level to engage the microphone pre-amp.
6. Sound is distorted front LED is OFF, LCD screen LIMIT is ON	Excessive input level	Reduce the input level or loudspeaker level knobs to prevent limit.

Problem	Possible Cause(s)	Action
	Incorrect gain structure or source input (mixing console/preamp) is overdriven	Verify level controls of the source are properly structured by using the VU meter indicator on the LCD screen. If the VU meter bar is solid or the system indicates LIMIT, the input or source level is too high.
7. Microphone produces acoustic feedback when input level is amplified	Incorrect gain structure	Reduce the microphone levels at the mixing console or input source. If the microphone is connected directly to the speaker, reduce the input level on the speaker. Positioning the microphone close to the sound source increases gain-before-feedback. See problem 6.
	FUNCTION is set to MUSIC	Change the LOCATION to LIVE or SPEECH.
	Microphone position is too close to the front of the loudspeaker	Whenever possible setup the loudspeakers so the microphone is behind them. If using the loudspeaker in a monitor position, aim the loudspeaker to the back of the microphone.
8. DSP menu is locked.	The Menu Lock function has been turned on. A lock symbol displays on the LCD screen.	Press and hold the MASTER VOL knob for 5 seconds.
If these suggestions do not solve your problem, contact your nearest Electro-Voice dealer or Electro-Voice distributor.		

See also

- *System status, page 26*
- *Full-Range loudspeaker DSP control menu, page 28*
- *Full-Range loudspeaker DSP control menu, page 30*

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