EON 210P
PORTABLE PA

USER'S GUIDE

JBL
by HARMAN

For: Français, Deutsch, Español, visit www.jblpro.com

Contents

Section 1: Important Safety Instructions

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 dry cloth.

7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.

8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

9. 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.

10. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

11. Only use attachments/accessories specified by the manufacturer.

12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/ apparatus combination to avoid injury from tip-over.

13. Unplug this 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. Service Instruction in Owner's Manual: "CAUTION - THESE SERVICING INSTRUCTIONS ARE FOR USE BY QUALIFIED SERVICE PERSONNEL ONLY. TO REDUCE THE RISK OF ELECTRIC SHOCK DO NOT PERFORM ANY SERVICING OTHER THAN THAT CONTAINED IN THE OPERATING INSTRUCTIONS UNLESS YOU ARE QUALIFIED TO DO SO."

16. To completely disconnect this apparatus from the AC mains, disconnect the power supply cord plug from the AC receptacle.

17. "WARNING – TO REDUCE THE RISK OF FIRE OR ELECTRIC – SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE."

18. Do not expose this equipment to dripping or splashing and ensure that no objects filled with liquids, such as vases, are placed on the equipment.

19. The mains plug of the power supply cord shall remain readily operable.

Care and Cleaning

EON 210P systems may be cleaned with a dry cloth. Do not get moisture into any of the openings in the system. Ensure that the system is unplugged from the AC outlet before cleaning.

THIS APPARATUS CONTAINS POTENTIALLY LETHAL VOLTAGES. TO PREVENT ELECTRIC SHOCK OR HAZARD, DO NOT REMOVE CHASSIS, MIXER MODULE OR AC INPUT COVERS. NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

Section 2: Precautions

The EON 210P PA system covered by this manual is not intended for use in high moisture environments. Moisture can damage the speaker cone and surround and cause corrosion of electrical contacts and metal parts. Avoid exposing the speakers to direct moisture. Keep speakers out of extended or intense direct sunlight. The driver suspension will prematurely dry out and finished surfaces may be degraded by long-term exposure to intense ultra-violet (UV) light. The EON 210P PA system can generate considerable energy. When placed on a slippery surface such as polished wood or linoleum, the speaker may move due to its acoustical energy output. Precautions should be taken to assure that the speaker does not fall off a stage or table on which it is placed.

Stand Mounting Safety Precautions

The EON 210P speakers contain a 36 mm receptacle cup to allow mounting on tripod stands or on a pole over subwoofers. When using stands or poles, be sure to observe the following precautions:

- Check the stand or pole specification to be certain the device is designed to support the weight of the speaker. Observe all safety precautions specified by the manufacturer.
- Always verify that the stand (or subwoofer/pole) is placed on a flat, level and stable surface and be sure to fully extend the legs of tripod type stands. Position the stand so that the legs do not present a trip hazard.
- Route cables so that performers, production crew, and audience will not trip and topple the speakers over.
- Inspect the stand (or pole and associated hardware) before each use and do not use equipment with worn, damaged or missing parts.
- Do not attempt to place more than one EON 210P series speaker on a stand or pole.
- Always be cautious in windy, outdoor conditions. It may be necessary to place additional weight (i.e. sandbags) on the base of the stand to improve stability. Avoid attaching banners or similar items to any part of a speaker system. Such attachments could act as a sail and topple the system.
- Unless you are confident that you can handle the weight of the speaker, ask another person to help you get it onto the tripod stand or pole.

Hearing Damage, Prolonged Exposure To Excessive SPL

The EON 210P system is capable of generating sound pressure levels (SPL) sufficient to cause permanent hearing damage to performers, production crew and audience members. Caution should be taken to avoid prolonged exposure to SPL in excess of 90 dB.

WATCH FOR THESE SYMBOLS!

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 product.

The lightning flash with the arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of un-insulated “Dangerous Voltage” within the products enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

Section 3: EON 210P PA System Declaration of Conformity

This equipment complies with the EMC directive 89/336/EEC
Modified by
92/31/EEC
93/68/EEC
98/13/EEC and LVD 73/23/EEC modified by 93/68/EEC

This product is approved to safety standards:
EN60065:2002
UL6500 7th Edition: 2003
UL 60065 - STANDARD FOR AUDIO, VIDEO AND SIMILAR ELECTRONIC APPARATUS - SAFETY EQUIREMENTS - Edition 7 - Revision Date 2007/12/11
CSA C22.2 NO 60065-03 - AUDIO, VIDEO AND SIMILAR ELECTRONIC APPARATUS – SAFETY REQUIREMENTS - Edition 1 - Revision Date 2006/04/01
IEC 60065 - AUDIO, VIDEO AND SIMILAR ELECTRONIC APPARATUS -- SAFETY REQUIREMENTS - Edition 7.1 - Issue Date 2005/12/01

And EMC Standards
EN55103-1 (E2)
EN55103-2 (E2)

CSA Compliance Notice
CSA Certification Applies to Amplifier Module Only
CSA Certified to operate only at 120V~ in Canada

FCC Compliance Notice
This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

CAUTION: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 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 instruction manual, may cause harmful interference to radio communications. However there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause harmful interference to radio and television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to collect 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 for help

AC Power Requirements
The EON 210P is equipped with a Crown® Class D power amplifier and loudspeaker specific DSP electronics and requires appropriate AC power. Before plugging the Mixer Module into an outlet ensure that it is able to provide appropriate AC power.

A robust AC supply is necessary for maximum performance. If the supply is too weak the bass performance may be affected and if it sags (drops) too much the system may self-mute to protect itself. As soon as the appropriate AC supply is restored it will continue to operate. Plugging multiple systems into the same outlet and long extension cord runs may affect the AC supply to the system.

CAUTION
In compliance with safety agency criteria and proper system operation, it is critical that the system installer observe all electrical safety practices at all times and provide proper earth grounding for all AC Power connections.

Powering Up
The main power switch is located on the side of the mixer module where the AC cable attaches to the mixer.

Changing Voltage
Your EON 210P will typically be set at the factory to accommodate the power mains voltage in your area. Before you set up your EON 210P for the first time it is a good idea to verify that the setting of the selector is appropriate for the power in your area. In the event that you do need to change the voltage:

- Make sure that the speaker is powered off and the AC (IEC connector) is disconnected from the mixer module.

- Directly beside the male IEC connector on the mixer module is a red voltage selector. Just slide the switch to the appropriate setting.

- Set the voltage selector switch to the 115V for (100-120V~) or 230V for (220-240V~) range setting as required for your area.

- After having reconfirmed that the correct voltage is selected, reconnect the AC (IEC connector) and power the unit up.

DO NOT UNDER ANY CIRCUMSTANCES OPERATE THE UNIT WITH THE WRONG VOLTAGE SELECTED. DOING SO MAY RESULT IN SERIOUS DAMAGE TO YOUR PA SYSTEM WHICH WILL NOT BE COVERED BY WARRANTY.

Operating Temperature
The design of the Crown amplifier is such that it is very energy efficient and as a result does not get really hot. In the rare event that it does get too hot it will automatically shut down to protect itself. When its temperature has returned to within its operating range it will turn back on. A condition under which this may occur is when the system is operated in very high ambient temperatures and the heat sink on the rear of the enclosure is in direct sunlight. Always ensure adequate cooling and appropriate shade.

Section 5: Introduction To The EON 210P PA System

Thank you for choosing the JBL EON 210P PA system. The EON 210P is a self-contained, portable pa system featuring multiple input channels with individual tone controls, multiple digital effects and convenient output routing capabilities that allow the user to integrate the system into any number of audio environments. And with its lightweight and ergonomic design the EON 210P is perfect for situations where ease and portability are just as important as quality and flexibility.

Included in the EON 210P package are:

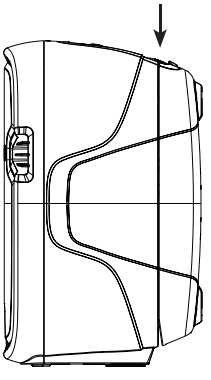
- 2 Speakers with detachable modules
    - 1 module contains the EON 210P powered mixer
    - 1 module is designed for storage of speaker cables and microphones

- 1 pair of unshielded speaker cables
- 1 Power cable
- User's Guide

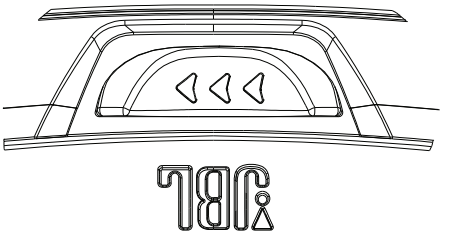
GETTING STARTED

1. Remove speakers, power cable and the speaker cables from the carton.
2. **Detach the modules from the speakers.** By pressing and sliding the button on the top of the speakers you will release the module from the speaker. All that is required is a little lift on the module once the button is pressed. (Ex. 1)

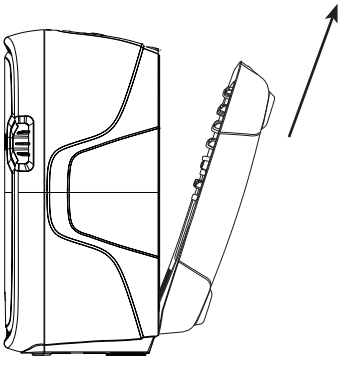
(1) Press here



(2) Slide button

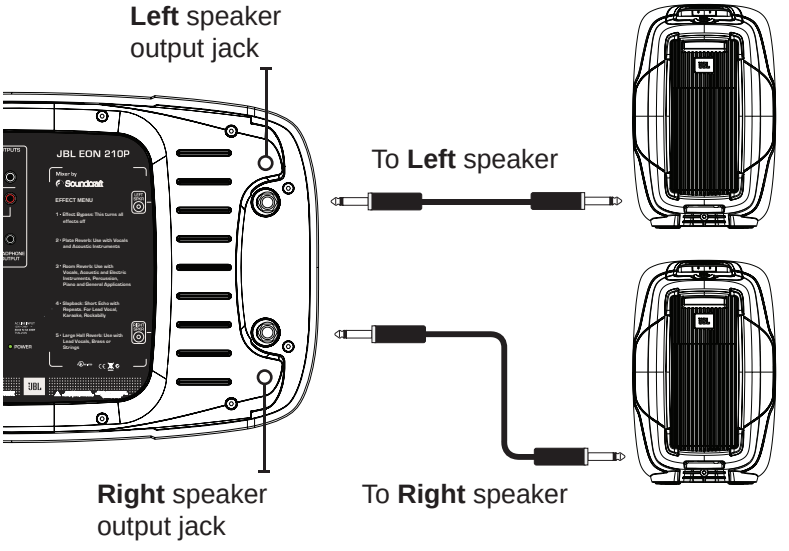


(3) Lift

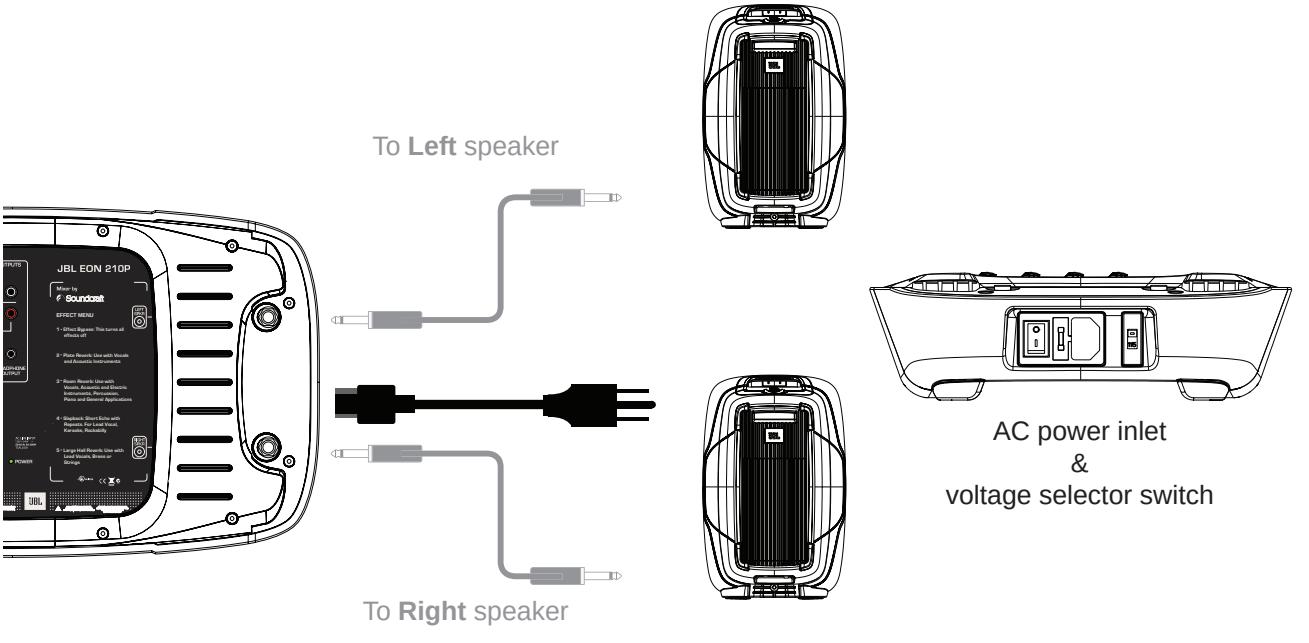


3. If you have purchased speaker stands, you can place the speakers on the stands utilizing the pole mount adaptor built into the EON210P speaker cabinets. Once the speaker is on the pole, tighten the set screw to snug the speaker to the pole.

4. **Connect the Mixer Module to the Speakers**
On the right side of the mixer you will notice two ¼" phone jacks – these are your speaker output jacks. Take the speaker cables and connect them from these jacks to the jacks on the back of the speakers.

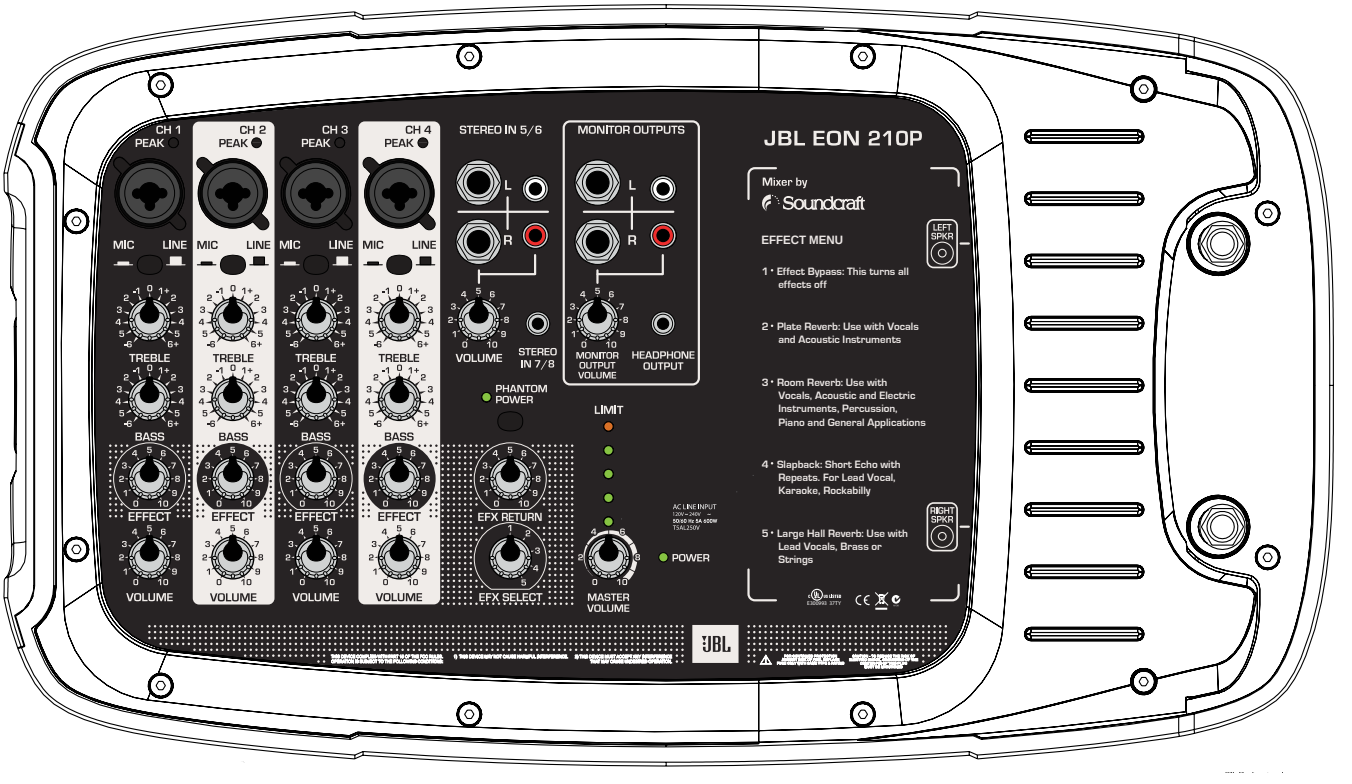


5) **Connecting the AC Power Cable**
Connect the female end of the power cable to the mixer and plug the male end into the wall socket or extension cord. Turn the “MASTER VOLUME” control to “0”. Now turn the power switch to the “on” position. You should see the “POWER” indicator illuminated.
At this point you are ready to bring in an audio signal and hear the signal amplified by the system.



Getting Acquainted with the EON 210P Powered Mixer
This part of the EON 210P system houses the mixing board and power amplifier. You will connect all of the microphones, musical instruments, external sound sources (like MP3 or CD players), headphones in addition to any recording devices or additional speakers like a personal monitor, subwoofer or “Front of House” feed.

The Basics
While it looks complicated, the mixing board is actually a very simple device. A “mixing board” brings audio sources “in” (through the inputs) and routes the signal to the outputs (MASTER VOLUME/SPEAKER OUTPUTS or MONITOR OUTPUTS)). The mixer controls enable the user to affect the tone and/or volume in addition to routing the signal and adding effects to individual input sources. The abundance of knobs is simply due to the repetitive nature of the design.



Let’s look at the “inputs” first:

AUDIO INPUTS
The EON 210P has 8 inputs: 4 mono inputs and 2 stereo inputs.
All of the inputs will route to the speakers and to the MONITOR OUTPUT SECTION.

MONO MIC/LINE INPUTS
Moving from left to right there are 4 identical input strips comprised of (from top to bottom) a “peak LED”, a combination input connector, MIC/LINE selector, Treble and Bass controls, a Reverb send and a channel volume control.

PEAK indicator shows you that the input is either present (green) or is overloaded (red)

Combination 1/4" phone plug and XLR male input

MIC/LINE “SELECTOR” allows you to select between a microphone (XLR) input and a line (1/4" phone) input

Treble control adjusts the amount of high frequencies on the particular channel

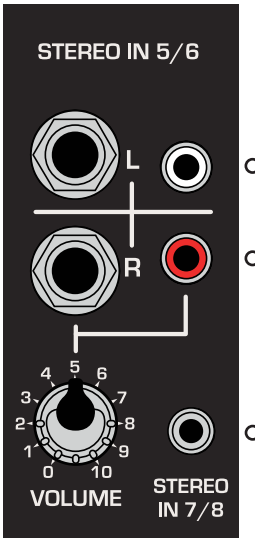
Bass control adjusts the amount of low fequencies on the particular channel

Effect control adjusts the amount of effect on the particular channel

Channel Volume control adjusts the gain on the particular channel

STEREO INPUTS

The EON 210P has two stereo inputs and these are used primarily for MP3 or CD players but could be used with the stereo output of an electronic keyboard, instrument pre-amp or processor, or an electronic drum machine. The inputs labeled “STEREO IN 5/6” offer the option of using ¼" phone plugs or RCA plugs and this channel has a volume control. The input labeled “STEREO IN 7/8” is a 3.5 mm stereo input of the type typically found on personal music players. This input does not have a volume control as personal music players usually have a “volume control” built into the unit. This is the best way to control the volume of the unit plugged into this input.



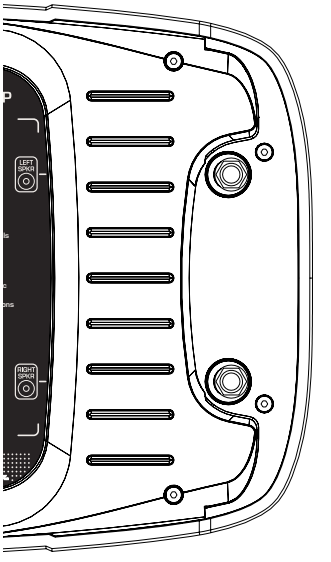
Stereo in **5/6** 1/4" Phone inputs (use with electronic keyboard, instrument pre-amp or processor or an electronic drum machine)

Stereo in **5/6** RCA inputs (use with MP3 Player, CD or any consumer type electronics)

Volume Control for “STEREO IN 5/6”

3.5 mm input jack for “STEREO IN 7/8” for use with personal music players

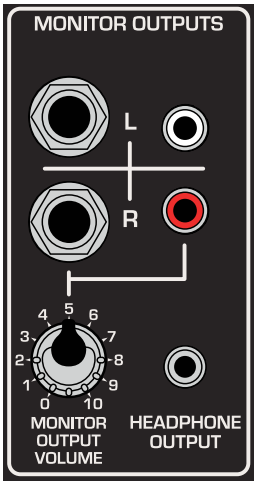
STEREO OUTPUTS: We've brought signals into the mixer now let's send them somewhere…The EON 210P has 3 stereo pairs of outputs:



1. LEFT/RIGHT speaker outputs - These outputs should only be connected to the EON 210P speakers and under no condition should they be connected to the input of another electronic device. These outputs carry power and as such could damage the electronic device. Only use "unshielded" speaker cables (like the cables provided with your EON 210P).

2. "MONITOR OUTPUTS"

These outputs allow you to route the stereo mixer signal to another destination like a recording device, personal monitor, subwoofer or to another PA system (Front of House). Depending on the input connectors of the destination device, you can use either the ¼" phone jacks or the RCA jacks.



a. "MONITOR OUTPUT VOLUME"

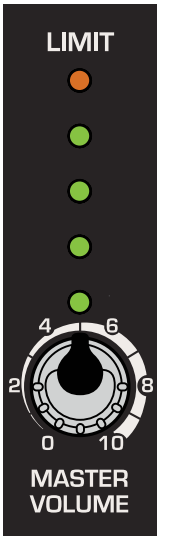
This controls the overall volume of the MONITOR OUTPUT.

3. HEADPHONE OUTPUT

This output allows the user to listen to the main output the EON 210P mixer. Headphones used will require a 3.5 mm stereo plug.

MASTER VOLUME and "PEAK LED LADDER"

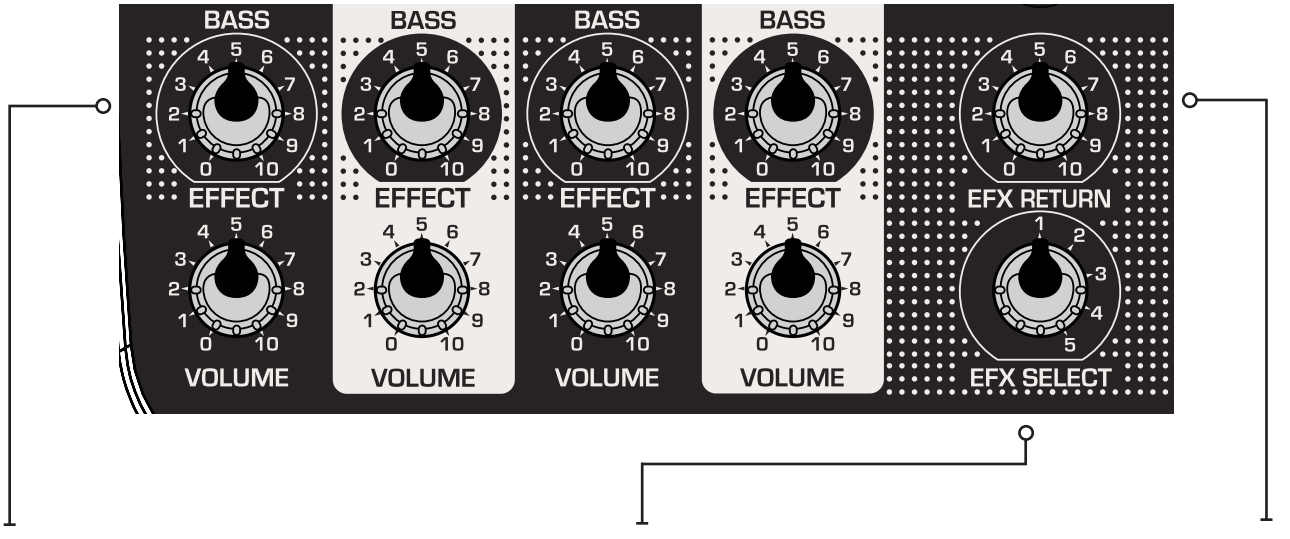
Your EON 210P is equipped with a "Master Volume" that controls the overall output volume of the system and a 5 light "Peak LED Ladder" that gives you a visual display of how much power you are using (think of the speedometer on your car). The red or top LED on the ladder indicates that you are approaching the maximum output by blinking or, when it stays on constantly, indicates you have reached the maximum output. As a frame of reference if a channel volume is on "7" and the "MASTER VOLUME" is on "7" you will have reached the maximum output before distortion is audible.



DIGITAL EFFECTS

Your EON 210P is equipped with digital multi-effects designed to enhance instruments or vocals. There are four effects available on the EON 210P.

An effect on a vocal or instrument can create a very natural sense of space for the listener and is great fun for the performer. Used correctly, effects enhance a voice or instrument in a very musical way but, when used to excess, they can make the music or voice less intelligible and unnatural. As a basic place to start turn the EFFECT control to “5” on the appropriate channel. Start with the EFX RETURN on “5” and then select an effect that is suitable for your application. If there is too much effect then turn down the EFX RETURN to suit your taste.



Located on each mono input strip is a control labeled “**EFFECT**”. This control determines the amount of effect for that specific channel.

“**EFX SELECT**” determines what type of effect is selected.

The “**EFX RETURN**” controls the amount of effect on a global basis. All channels that have the “**EFFECT**” control activated will be affected by turning this control up or down.

1. EFFECT BYPASS
This turns all effects off

2. PLATE REVERB
Use with Vocals and Acoustic Instruments

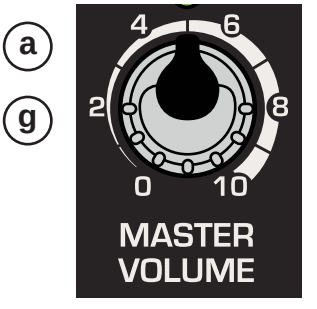
3. ROOM REVERB
Use with Vocals, Acoustic and Electric Instruments, Percussion, Piano

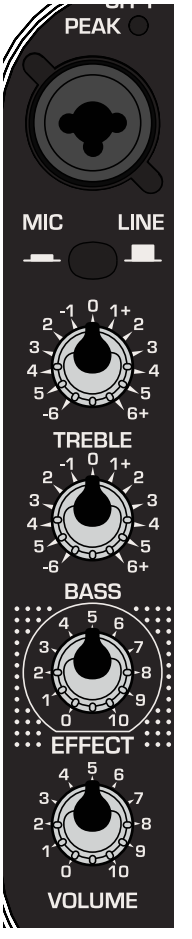
4. SLAPBACK
Short Echo with repeats for Lead Vocal, Karaoke, Rockabilly

5. HALL REVERB
Use with Lead Vocal, Sustained Guitar

6. **CONNECTING A MICROPHONE:**
   a. Turn the “MASTER VOLUME” to “0”.
   b. Connect the microphone to the microphone cable and insert the male end into channel 1 of the EON 210P mixer.
   c. Depress the MIC/LINE switch – this increases the sensitivity of the input and is set for use with a dynamic microphone.
   d. Set the “TREBLE” and the “BASS” control to “0” (IN THE CENTER AT THE DETENT).
   e. Set the “REVERB” to “0”.
   f. While talking loudly into the microphone bring up the channel volume until the red “PEAK” indicator blinks quickly. If the indicator does not come on at all and you have turned the channel volume to “10”, then reduce the channel volume to “7” and move on to the next step. If the “PEAK” indicator comes on at “3” for instance, then press the MIC/LINE switch returning it to the “up” position and increase the channel volume control.
   g. Slowly bring up the “MASTER VOLUME” to the desired loudness.

   * If you are using a “condenser microphone” engage the PHANTOM POWER button.





7. **CONNECTING A KEYBOARD, DRUM MACHINE, CD OR MP3 PLAYER TO THE 5/6 STEREO INPUT:**
   a. Turn down both the “Volume” control on channel “5/6” and the “MASTER VOLUME” control.
   b. Connect the output of the device to the “5/6” input of the EON 210P mixer using the appropriate input jacks. (1/4" phone or RCA depending on the output of the device you are trying to connect)
   c. If there is an output gain or volume control on the device, set that to “7”. This level is a starting point but should get you enough output to drive the input of the EON 210P.
   d. Bring up the “5/6 VOLUME CONTROL” to the 5-7 range.
   e. Slowly bring up the MASTER VOLUME to the desired loudness.

8. **CONNECTING A PERSONAL MUSIC PLAYER TO THE 7/8 STEREO INPUT:**
   a. Turn down the “MASTER VOLUME” control.
   b. Connect the output of the device to the “7/8” input of the EON 210P mixer using a 3.5 mm stereo “mini plug”.
   c. If there is an output gain or volume control on the device, set that to “7”. This level is a starting point but should get you enough output to drive the input of the EON 210P.
   d. Slowly bring up the MASTER VOLUME to the desired loudness.

9. **USING THE MONITOR OUTPUTS: You can connect these outputs to a variety of devices like a recording device, a powered sub-woofer, additional power amplifier and speakers or even another mixer.**
   a. Turn the “MONITOR OUTPUT VOLUME” control to “1”.
   b. Connect the MONITOR OUTPUTS (EITHER THE ¼” PHONE OR RCA) to the inputs of the device into which you want to plug the mixer.
   c. Set the input level of the external device according to the manufacturer instructions.
   d. Slowly bring up the “MONITOR OUTPUT VOLUME” to the desired loudness.

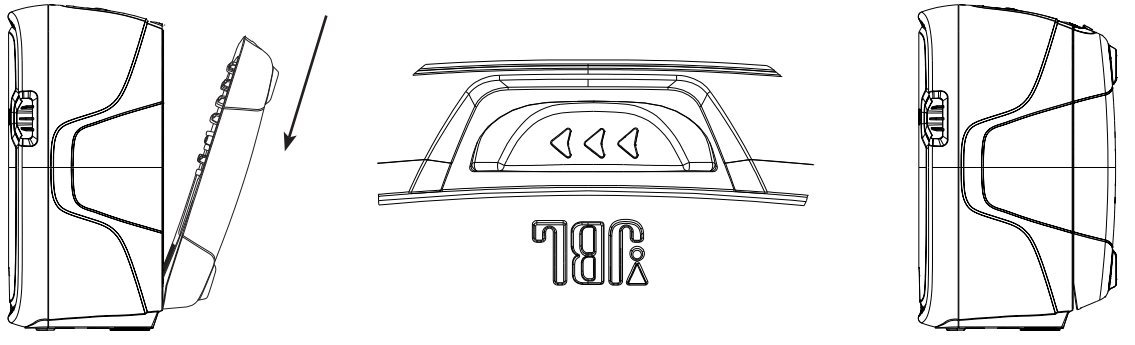
10. **STORING THE EON 210P**

a. Turn down the “MASTER VOLUME” control.
b. Turn the mixer unit off.
c. Disconnect the AC Power cable from the mixer and then unplug the cable from the wall outlet.
d. Disconnect the speaker cables from the mixer and then disconnect the speaker cables from the speakers.
e. Disconnect all other inputs (microphones, instruments or music players) from the mixer.
f. Return the cables to the storage module and secure the latch.
g. To return the storage module or mixer module back to their “attached” position on the rear of the speakers simply reverse the process described in the “Getting Started” portion of the manual. (**EX. 2**)

(**1**) Slide the module into the back of the speaker

(**2**) Gently press forward and snap the module into the latch

(**3**) The module should be securely fastened to the speaker and ready for transport



(**Ex. 2**)

CAUTION:

- The EON 210P was designed as a system and is to be used as such. Use only the EON 210P speakers provided with the system. Substituting different speakers could result in damage to the powered mixer and could void your warranty. The powered mixer will not function with speakers that have an impedance lower than 8 ohms.
- Do not daisy chain the speakers! No more than one 8 ohm speaker should be used on each speaker output.
- The EON 210P utilizes sophisticated Digital Signal Processing that has been optimized for the EON 210P speakers. Substituting speakers may result in decreased performance.

ACCESSORIES:

JBL tri-pod stands are available at most JBL Authorized Dealers.
Ask for part number: SS2-BK
See a selection of covers and carrying cases at www.jblbags.com.

Harman Professional “Green Edge™” Mission

At Harman Professional we understand and respect that we have a duty to serve our customers and our employees by serving the planet. We accept that responsibility and strive to be energy efficient and environmentally minded in our everyday business. When we design, produce, and deliver our products we look for opportunities to do so more efficiently and sustainably. We’re committed to a healthier planet and healthier life for every living thing.

JBL is proud that the EON 210P has been certified “Green Edge” compliant by Harman Professional. Great care has been taken to engineer this product for lightweight, highly optimized power consumption and superior ergonomics – all factors that lower the carbon footprint and contribute to energy efficiency.

Section 6: System Specifications

EON210P

System	System Type:	Powered mixer with 2 two-way bass-reflex enclosures
	Maximum SPL Output:	124 dB peak system output (pink noise)
	Frequency Range (-10 dB):	60 Hz - 20 kHz
	Frequency Response (±3 dB):	75 Hz - 19 kHz
	AC input :	120 - 240 V 50/60 Hz, voltage selector switch sets operational range
Amplifier	Design:	Crown® Class D
	System Power Rating:	300 Watts (2 X 150 W Sine Wave Burst)
	Output Connector:	2 X 1/4" TS (unbalanced) amplifier outputs
Mixer	Input Connectors:	8 inputs (4 Mono Mic/Line, 2 X Stereo)
	Channels	1-4 are XLR / 1/4" jack combo connectors
		XLR is a mic level input, 1/4" is a line level input
		5-6, one pair of 1/4" balanced TRS jacks (stereo), and a pair of RCA jacks (stereo)
		7-8 is a 3.5 mm stereo jack
	Input Impedance:	Ch 1-4 Combo: XLR 3 K Ohms Balanced
		Ch 1-4 Combo: TRS 20 K Ohms Balanced
		Ch 5-6: TRS 25 K Ohms Balanced
		Ch 5-6: RCA 12 K Ohms Unbalanced
		Ch 7-8: 3.5 mm 30 K Ohms Unbalanced
	Phantom Power:	30 V
	Output Connectors:	Monitor outputs: one pair of 1/4" balanced TRS jacks (stereo), and a pair of RCA jacks (stereo)
		Headphone output: one 3.5 mm stereo jack
	Signal Indicators: Main Output LED Ladder	Limit: Red LED indicates limiter active condition
		Signal: Green LED indicates signal present
	Signal Indicators: Ch 1-4	Peak LED: Green = signal present, Red = input overload
	EQ:	Individual channel Bass and Treble controls, center detent, +/-6 dB cut and boost
	System Limiter:	On Board DSP Limiting and Tuning
Speaker	LF Driver:	1 x JBL 328 H 250 mm (10 in) woofer
	HF Driver:	1 x JBL 2414H-1 37.5 mm (1.5") annular polymer diaphragm, neodymium compression driver
	Coverage Pattern:	100º x 60º nominal
	Crossover Frequency:	2 kHz
	Crossover Type:	Passive network, 2nd order filters (-12 dB per octave) for high pass and low pass filters
	Enclosure:	Polypropylene
	Suspension/ Mounting:	36 mm pole socket with stabilizing screw
	Handles:	One on top
	Grille:	Powder coated perforated steel
	Shipping Package Dimensions (H x W x D):	21.5" x 26" x 13.75" (546 mm x 660 mm x 349 mm)
	Net Weight of System:	33 lbs. (19 lbs. for unit with powered mixer, 14 lbs. for unit with storage pod)

Balanced vs. Unbalanced Lines

Your EON 210P PA system can accept either type of input. There are two basic types of audio system interconnections for audio signals: Balanced and Unbalanced.

Balanced Lines

In audio, a balanced line is a three-conductor system in which the two signal wires carry an equal, but opposite voltage with respect to the ground wire. The ground wire acts only as a shield and does not carry any audio signal current. Outside interference (such as RFI - Radio Frequency Interference) is either shielded from the internal signal conductor, or if it gets into the cable is cancelled out by the opposite signals at the receiving end. Balanced connections are preferred for long cable runs.

Unbalanced Lines

Unbalanced cable is a two-wire system where the shield (ground wire) acts as one of the current carrying signal conductors. The center conductor enclosed by the shield is commonly known as the “hot” conductor. Unbalanced audio cables do not reject noise as well as balanced lines. Unbalanced lines are typical in home hi-fi type systems and on the outputs of electronic musical instruments. These work well if the distance between the components is short, the signal level is relatively high and all of the electronics used in the system are plugged into the same AC service.

Section 8: Cables and Connectors

XLR/F to XLR/M Microphone Cable	The standard cable for interconnection of microphone and line level signal in professional audio systems. • Microphone to mixer
TRS (balanced) 1/4 inch phone jack to XLR/M	For connecting balanced devices with 1/4 inch phone and maybe used interchangeably.
TRS (unbalanced) 1/4 inch phone jack to XLR/M	For connections of instruments with unbalanced outputs to balanced XLR inputs.
TS (unbalanced) 1/4 inch phone jack to XLR/M	This cable is electrically identical to “TRS” (unbalanced) 1/4 inch phone and may be used interchangeably.
XLR/M to RCA (phono) cable	Connects consumer audio products and some DJ mixer outputs to professional audio equipment inputs
TRS 1/4 inch Phone jack to dual 1/4 inch Phone jack	Splits a stereo output into separate left/right signals.
TRS 1/4 inch Phone jack to dual 1/4 inch Phone jack	Change to a TRS mini-phone jack to connect to the output of a portable. MP3/CD – player and computer sound cards to a mixer.
XLR/F to XLR/M audio ground lift	Only with balanced in - and outputs

XLR/F to XLR/M Microphone Cable

TRS (Balanced) 1/4" Phone to XLR/M Cable

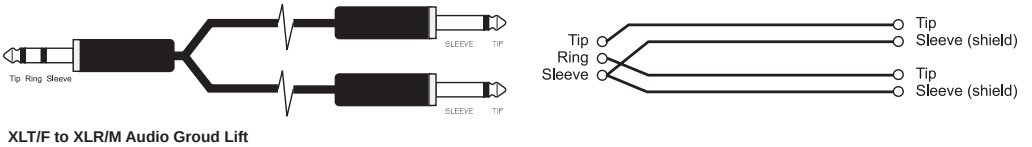
TRS (Unbalanced) 1/4 Phone to XLR/M Cable

TS (Unbalanced) 1/4” Phone to XLR/M Cable

XLR/M to RCA (phono) Cable

TS (Unbalanced) 1/4” Phone to RCA (phono) Cable

TRS 1/4” Phone to dual TS 1/4” Phone



XLT/F to XLR/M Audio Groud Lift

Section 9: Trouble Shooting

Symptom	Likely Cause	What to do
No sound	No Power	Make sure that the AC cord is properly seated into the AC receptacle both at the wall outlet and on the mixer. Make sure the AC switch is in the "ON" position. If you are using an "AC Strip" check to see that it is working properly.
	Volume's are turned down	Make sure both the mixer's channel volume and master volume are turned up. Double check to see if the source volume is turned up.
	Mechanical connections are loose	Check to see if the input to the mixer is properly seated.
		Check the speaker connections to see if they plugged in all of the way.
	Bad Cables	Your speaker cables may have been damaged. Inspect for any cuts or crimps and if found, replace the cables.
	Phantom Power is off	If you are using a "Condenser" type microphone you will need to activate the "Phantom Power" switch for the microphone to work.
Sound is distorted	Input overload	If the "Peak LED Indicator" is flashing red or on constantly you may be overloading the input. On channels 1-4 turn the channel volume down and press the MIC/LINE switch. Slowly bring the volume up. If the distortion is gone but you don't have enough volume, turn up the master volume.
		If you are using an external device like a personal music player or electronic instrument try lowering the volume on that device.
	System is overloading	Check the "SYSTEM LEVEL INDICATOR" LED's and if the "LIMIT" or red light at the top of the ladder is on constantly you may be overdriving the system. Turn down the MASTER VOLUME.
Sound is thin	Too much treble	Check the channel's "TREBLE" control and turn it to the "0" position.
	Not enough bass	Check the channel's "BASS" control and turn it to the "0" position.
	Speakers not connected properly	Check the speaker connections to see if they plugged in all of the way.
	Effects levels may be too high	Try turning down the MASTER EFFECTS RETURN.
Sound is too boomy or dark	Not enough treble	Check the channel's "TREBLE" control and turn it to the "0" position.
	Too much bass	Check the channel's "BASS" control and turn it to the "0" position.
Hum or Buzz that increases or decreases when the mixer level controls are moved	Improper A/C ground or faulty equipment connected to mixer input	Disconnect or mute channels one at a time to isolate the problem. Refer to the owner's manual of the faulty equipment for troubleshooting help.
	Faulty cable between source equipment and mixer	Substitute a known-good cable for the suspected faulty cable.
Hum or Buzz	Improper A/C grounding, ground loops	Try using a ground lift adaptor. Connect all power cords to the same power strip.
	Excessively long unbalanced cable run	Try a shorter cable if possible, otherwise use a DI box to convert the unbalanced signal to a balanced signal and use the appropriate cabling.
	Improper system gain structure	Reduce the INPUT level controls and increase the output level of your source devices.

Symptom	Likely Cause	What to do
Noise or hiss heard at outputs	Noisy source device	Disconnect the devices that are connected to your mixer one at a time. If the noise goes away, the problem is with the source or the connecting cable.
	Unused channel volumes are up too high	Lower the channel volume on unused channels to “0”
Feedback	Microphones are too close to the speakers	Speakers should be between the audience and the microphones in order to avoid feedback.
Headphone signal is weak	MONITOR OUTPUT is turned down	Turn up the "monitor output volume" on the mixer
	Channel Input is too low	Make sure that the channel input volume is turned up
	Impedance mismatch	Your headphones have too high of an impedance. Try a different set of headphones.

Section 10: Contact Information

Mailing Address:
JBL Professional
8500 Balboa Blvd.
Northridge, CA 91329

Shipping Address:
JBL Professional
8500 Balboa Blvd., Dock 15
Northridge, CA 91329
(Do not return product to this address without first obtaining prior authorization from JBL)

Customer Service:
Monday through Friday
8:00am - 5:00pm
Pacific Coast Time in the U.S.A.
(800) 8JBLPRO (800.852.5776)
www.jblproservice.com

On The World Wide Web:
www.jblpro.com

Professional Contacts, Outside the USA:
Contact the JBL Professional Distributor in your area. A complete list of JBL Professional international distributors is provided at our U.S.A. website: www.jblpro.com

Product Registration:
Register your product online at www.jblpro.com

Section 11: Warranty Information

The JBL Limited Warranty on professional loudspeaker products (except for enclosures) remains in effect for five years from the date of the first consumer purchase. JBL amplifiers are warranted for three years from the date of original purchase. Enclosures and all other JBL products are warranted for two years from the date of original purchase.

Who Is Protected By This Warranty?

Your JBL Warranty protects the original owner and all subsequent owners so long as: A.) Your JBL product has been purchased in the Continental United States, Hawaii or Alaska. (This Warranty does not apply to JBL products purchased elsewhere except for purchases by military outlets. Other purchasers should contact the local JBL distributor for warranty information.); and B.) The original dated bill of sale is presented whenever warranty service is required.

What Does The JBL Warranty Cover?

Except as specified below, your JBL Warranty covers all defects in material and workmanship. The following are not covered: Damage caused by accident, misuse, abuse, product modification or neglect; damage occurring during shipment; damage resulting from failure to follow instructions contained in your Instruction Manual; damage resulting from the performance of repairs by someone not authorized by JBL; claims based upon any misrepresentations by the seller; any JBL product on which the serial number has been defaced, modified or removed.

Who Pays For What?

JBL will pay all labor and material expenses for all repairs covered by this warranty. Please be sure to save the original shipping cartons because a charge will be made if replacement cartons are requested. Payment of shipping charges is discussed in the next section of this warranty.

How To Obtain Warranty Performance

If your JBL product ever needs service, write or telephone us at JBL Incorporated (Attn: Customer Service Department), 8500 Balboa Boulevard, PO. Box 2200, Northridge, California 91329 (818-893-8411). We may direct you to an authorized JBL Service Agency or ask you to send your unit to the factory for repair. Either way, you'll need to present the original bill of sale to establish the date of purchase. Please do not ship your JBL product to the factory without prior authorization. If transportation of your JBL product presents any unusual difficulties, please advise us and we may make special arrangements with you. Otherwise, you are responsible for transporting your product for repair or arranging for its transportation and for payment of any initial shipping charges. However, we will pay the return shipping charges if repairs are covered by the warranty.

Limitation of Implied Warranties

ALL IMPLIED WARRANTIES, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO THE LENGTH OF THIS WARRANTY.

EXCLUSION OF CERTAIN DAMAGES

JBL'S LIABILITY IS LIMITED TO THE REPAIR OR REPLACEMENT, AT OUR OPTION, OF ANY DEFECTIVE PRODUCT AND SHALL NOT INCLUDE INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS AND/OR DO NOT ALLOW THE EXCLUSION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS AND EXCLUSIONS MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS, WHICH VARY, FROM STATE TO STATE.

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