

User Guide

**HOT SPOT, HOT SPOT VC,
MICRO SPOT VC, PA5X140,**



TABLE OF CONTENTS

| | |
|---|----|
| WELCOME..... | 1 |
| BEFORE YOU BEGIN..... | 2 |
| OHM'S LAW AND THE HOT SPOT | 2 |
| SOUND REINFORCEMENT BASICS..... | 5 |
| HOT SPOT SERIES/MICRO SPOT VC | 6 |
| POWERED HOT SPOT (PA5X140) | 8 |
| USING THE PA5X140 | 8 |
| USING THE HOT SPOT WITH THE PA5X140 | 10 |
| STAND MOUNTING..... | 10 |
| MOUNTING YOUR MICRO SPOT SERIES SPEAKERS..... | 11 |
| SPECIFICATIONS..... | 12 |
| WARRANTY..... | 14 |
| REGISTRATION..... | 17 |

Welcome

Congratulations on your purchase of a Galaxy Audio Product! Backed by over 25 years of proven real-world performance and a 3 year warranty, the product you have selected is one of the finest personal monitoring devices available. Thank you for choosing Galaxy Audio.

For full specifications of Galaxy Audio products, visit www.galaxyaudio.com

Fill this out and retain for your records

Model: _____

Serial number: _____

Purchased from: _____

Purchase date: _____

To contact Galaxy Audio

call 1-800-369-7768

write to P.O. BOX 16285

Wichita, Ks 67216-0285

or visit www.galaxyaudio.com

CAUTION: THESE PRODUCTS ARE CAPABLE OF PRODUCING SOUND PRESSURE LEVELS WHICH MAY CAUSE PERMANENT HEARING DAMAGE AFTER PROLONGED EXPOSURE.

WARNING! TO PREVENT THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE. TO PREVENT THE RISK OF ELECTRICAL SHOCK, DO NOT REMOVE COVER. NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



This symbol indicates that a dangerous voltage constituting a risk of electric shock is present within this unit.







This symbol indicates that there are important operating and maintenance instructions in the literature accompanying this unit.

BEFORE YOU BEGIN

Before using this product be sure to read and understand all instructions in this manual pertaining to the model(s) you have purchased.

DO...

-  Read this manual
-  Use a unidirectional microphone
-  Handle with care
-  Complete the registration card at the back of the manual

DON'T...

-  Expose any unit covered in this manual to rain or moisture
-  Plug-in or unplug the **HOT SPOT** while it is operating (doing so may damage your amplifier)
-  Attempt to make any repairs (call Galaxy Audio for the nearest authorized repair center). Failure to do so may void your warranty.

OHM'S LAW AND THE HOT SPOT

All unpowered HOT SPOTS have a 16 ohm impedance, and like most professional-type speakers have two jacks which are wired in parallel (meaning the signal can travel into one jack and out of the other). Think of each speaker as a "load" added to the amplifier. The greater the number of speakers, the heavier the load. Adding too many speakers can overload the amplifier, causing it to overheat and distort. If the amplifier begins to distort, or if it becomes hot to the touch, disconnect any extra speakers. One easy way to determine the load on the amplifier is to use Ohm's law, which states: "The total impedance of N speakers in parallel is equal to the reciprocal of the sum of the reciprocals". In equation form:

Where Z1 is the impedance (or ohm rating) for the first speaker, Z2 for the second, and so on, for every speaker in the chain. This equation calculates the total impedance of the speaker system, which should **NOT** be lower than the minimum impedance rating of the amplifier.

$$Z(\text{Total}) = \frac{1}{\frac{1}{Z_1} + \frac{1}{Z_2} + \frac{1}{Z_3} + \frac{1}{Z_4} + \frac{1}{Z_N}}$$

EXAMPLE 1:

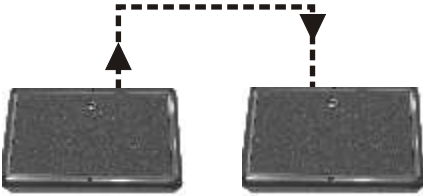
For one pair of speakers use the short form of the equation: the product of the two speakers divided by the sum of the two speakers is equal to the total impedance or the equivalent impedance of the speaker system.

$$Z = \frac{Z_1 \times Z_2}{Z_1 + Z_2}$$

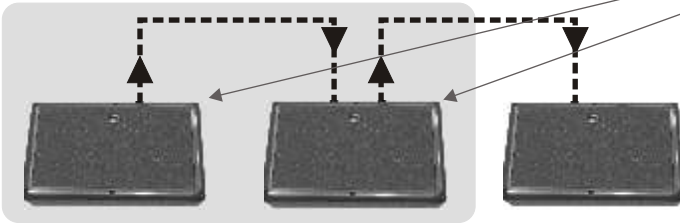
This equation may be used to calculate the equivalent impedance for additional speakers in two-speaker increments. Determine the impedance of the first two speakers, substitute Z total for Z , and include the next speaker. Repeat the process until all speakers have been included. The result should be the same as with the first method. A word of caution: polarity rules must be observed when connecting multiple speakers. Polarity will not affect the Z, but can affect the quality and volume of the sound. If you are having problems with any of these applications use Galaxy Audio's CRICKET Polarity and Continuity Test Set to check the polarity of your cables.

EXAMPLE 2:

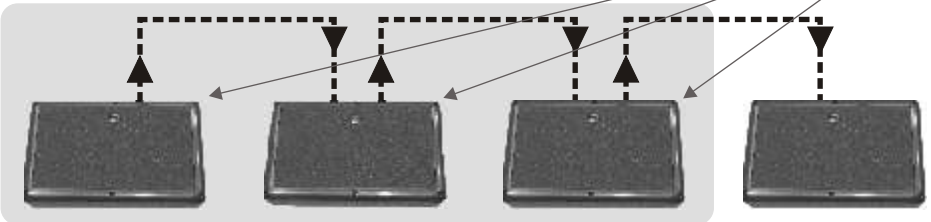
As long as all of the speakers have the same impedance rating, the equivalent impedance of the system is the rated impedance of one speaker divided by the number of equivalent speakers.



$$Z = \frac{16 \times 16}{16 + 16} = 8 \text{ Ohms for two HOT SPOTS}$$



$$Z = \frac{8 \times 16}{8 + 16} = 5.33 \text{ Ohms for three HOT SPOTS}$$



$$Z = \frac{5.33 \times 16}{5.33 + 16} = 4 \text{ Ohms (the total load)}$$

SOUND REINFORCEMENT BASICS

Avoiding feedback

Feedback (the shriek sometimes emitted by PA systems) occurs when the microphone (or pickup) and speaker are positioned too close together for a given level of volume. Once feedback occurs, it will continue until either the volume is decreased or the microphone or speaker is moved. *Gain* is the degree to which the volume may be turned up before feedback begins. In setting up a sound system, the objective is to maximize gain.

Monitor Placement



HOT SPOT Monitors should be positioned within arm's reach of the performer.



Monitors should be placed to the rear of the microphone being used by the performer.

Avoiding Distortion

Distortion in a monitor system usually occurs when the amplifier is being overdriven—nearing the limits of its power output capability. Overdriving the amplifier may be corrected by reducing the bass frequencies in the monitor mix (low notes use a lot of power). Since the HOT SPOT NEOLITE driver will not reproduce tones lower than 200 Hz, reduce the low frequencies if the speaker begins to distort. Distortion may also originate with a bad signal source.

NEO DRIVER

Introduced in 2004, the NEOLITE driver is a state of the art controlled bandwidth speaker that is included in all products covered in this manual. Tailored to reproduce a frequency range from 150 Hz-18 kHz, the NEOLITE is manufactured with the rare earth element Neodymium that has an extremely intense magnetic field in comparison to its weight. This magnetic field is also very concentrated, allowing the speaker to be placed near sensitive equipment that may be affected by a strong magnetic force, such as a TV or a computer monitor.



HOT SPOT SERIES/MICRO SPOT VC

HSRG/HSVC The HOT SPOT was created as the solution to the problem of musicians and public speakers not being able to hear themselves while performing. The HOT SPOT's design is unsurpassed in efficiently reproducing the crucial vocal range frequencies from 150Hz to 18 kHz.

Each Hot Spot comes with a built in stand mount that allows the unit to be placed on nearly any microphone stand, close to the performer, for true near field vocal monitoring (some microphone stands may require the optional stand adaptor SA-1)

The Hot Spot VC (HSVC) comes with a volume control that not only affects the volume of the unit, but also the impedance of the unit. (See chart [T.1] pg.7 for more information about the volume control).

MSVC

Like the Hot Spot series, the Micro Spot VC is also tailored to the vocal frequencies. The Micro Spot can be mounted to a microphone stand using the included yoke bracket kit. For information regarding the bracket kit see, MOUNTING YOUR MICRO SPOT SERIES SPEAKERS. [A.1](pg. 13)

Like the Hot Spot VC, the Micro Spot VC is also equipped with a volume control. (Please refer to table [T.1] pg. 7 for information regarding the positions on the volume control).

The HOT SPOT VC and MICRO SPOT VC

The impedance of the **HOT SPOT VC** and **MICRO SPOT VC** is determined by the position of its volume control. Use the table below to determine the actual impedance.

[T.1]

| POSITION | IMPEDANCE | dB REDUCTION |
|----------------|-----------|--------------|
| Full Clockwise | 16 ohms | 0 |
| 2nd | 23 ohms | -3 |
| 3rd | 33 ohms | -6 |
| 4th | 46 ohms | -9 |
| 5th | 64 ohms | -12 |
| 6th | 90 ohms | -15 |
| 7th | 130 ohms | -18 |



POWERED HOT SPOT

FEATURES OF GALAXY AUDIO'S POWERED SPEAKER

- CUL Listed
- Black cast aluminum faceplate (used as an integral heat sink)
- Fire-retardant styrene plastic outer shell
- SmartALIC input circuitry automatically distinguishes between microphone and line level signals without having to flip a switch.

Using the PA5X140 as a...

Powered Monitor



When connected to a mixer's monitor output or auxiliary output, the **PA5X140** enables each performer to create his/her own monitor mix.



Additional monitors can be attached to the **PA5X140's** speaker output.



A recorder can be attached to the **PA5X140's** LINE output.



Virtually any type of signal (instrument, mic level from a mixing console, guitar, keyboard, tape player or condenser mic can be plugged into the **PA5X140** inputs.

Ultra-Compact PA System



The **PA5X140** by itself is a one-piece PA system. Simply plug in a mic or instrument for 100 watts of sound reinforcement power.



When two 16 ohm Galaxy Audio **HOT SPOT** personal monitors are attached to the SPEAKER OUTPUT, the **PA5X140's** power output increases to 146 watts. Whether using the **HOT SPOT** or another speaker, the **PA5X140's** power output depends on the impedance of the speakers being powered. The load on the **PA5X140's** amplifier section must be greater than or equal to 4 ohms. Anything less will overload the amplifier.

Practice Amp



A balanced signal from a microphone or second instrument may be fed into one input while an instrument, CD player or tape deck is fed into the other.



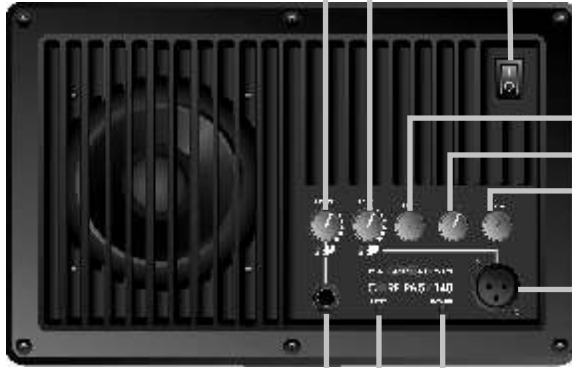
Effects devices for microphones or a second instrument may be fed into one input while an instrument, CD player or tape deck is fed into the other.

The PA5X140 (POWERED HOT SPOT) CONTROLS/INDICATORS and their operation (Front Panel)

LEVEL CONTROL FOR MIC (XLR) INPUT

LEVEL CONTROL FOR 1/4" INPUT

POWER SWITCH



TONE CONTROLS

When all three controls are set to the 12 o'clock (detent) position, the output frequency response is flat.

HIGH +/- 12dB shelving at 15 kHz

MID +/- 10dB peak/dip at 2 kHz

LOW +/- 10dB peak/dip at 300 Hz

MIC (XLR) INPUT

Balanced input with 24 VDC phantom power for electret microphones.

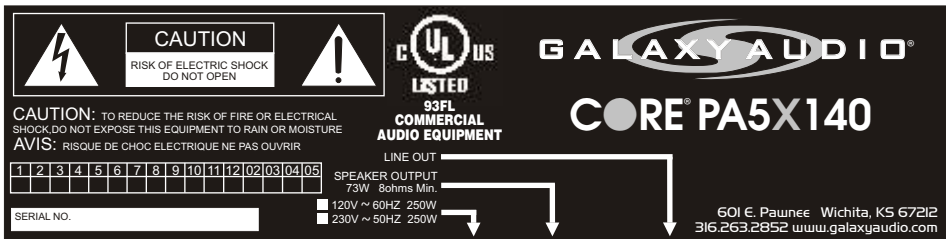
1/4" INPUT

POWER LED

LIMIT LED

Indicates when the built-in compression circuit is activated. By automatically reducing gain before clipping occurs the compression circuit prevents distortion. The LIMIT LED remains lit about half the time when the amplifier is being driven to its maximum potential. Do not allow it to remain lit more than half the time.

CONNECTORS/INDICATORS and their operation (Rear Panel)



SPEAKER OUTPUT

1/4" connector output from the internal amplifier. It can supply an external 8 ohm speaker with 73 watts of RMS power. This means two 16 ohm HOT SPOTS can be connected to the system without overloading the amplifier; great for a small PA or monitor setup.

POWER CORD

LINE OUT

RCA jack -10dB line level output can be fed to a recorder, or to other sound system components. It is post-EQ, pre-compressor and pre-amplifier.

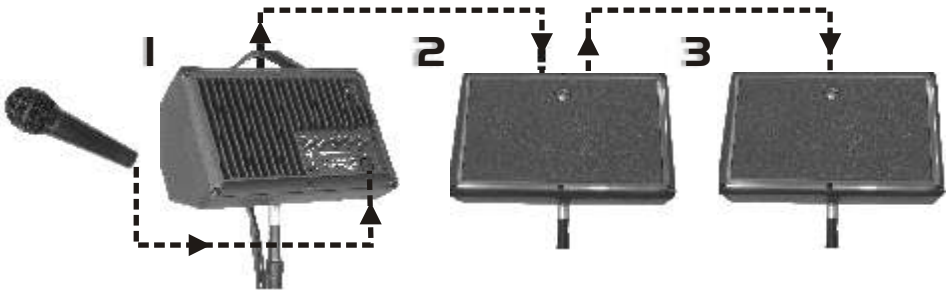
USING THE HOT SPOT WITH THE PA5X140 POWERED MONITOR

The PA5X140's SPEAKER OUTPUT jack is designed to allow a maximum of two HOT SPOTS to be "daisy-chained" to it.

The PA5X140 produces 146 watts when powering two HOT SPOTS (see figure below)

Route cables:

- 1) From the microphone to Galaxy Audio's PA5X140.
- 2) From the output of the PA5X140 to the first HOT SPOT.
- 3) From the first HOT SPOT to the second HOT SPOT.



STAND MOUNTING

All HOT SPOT's, both powered and un-powered, have a built in microphone stand mount: just slide the microphone stand into the receptacle on the bottom of the HOT SPOT. Some microphone stands may require an adaptor (contact any Galaxy Audio dealer and ask for an SA-1, microphone stand adaptor).

THE SA-1 WILL ALLOW YOU TO SECURELY PLACE YOUR HOT SPOT ON ANY MICROPHONE STAND.



No SA-1 needed

Atlas and SHURE stands allow HOT SPOT to sit deep enough on the stand

Stands that don't need SA-1's

Atlas™
SHURE™

Permanent piece and the collar will not allow HOT SPOT to sit deep enough

← SA-1 needed

Stands that need SA-1's
K&M™ series stands
AKG™
Beyer™
Sennheiser™
Ultimate™

MOUNTING YOUR MICRO SPOT SERIES SPEAKERS

The Micro Spot VC comes equipped with a stand mount bracket kit. Wall mount options are available for the Micro Spot VC from any Galaxy Audio dealer, or online at www.galaxyaudio.com

Stand Mounting

To install the yoke bracket, attach the SA-1 to the yoke bracket using the included 1/4-20 hex bolt and washer as shown in picture below (A.1). Tighten using a 7/16 wrench or socket. The yoke bracket assembly can now be screwed on to the microphone stand. Remove the two plastic threaded inserts from the T-nuts in each side of the Micro Spot with a small flat blade screwdriver. Place the Micro Spot into position so that the wing screws at the ends of the yoke line up with the T-nuts in the cabinet. Tighten the wing screws by hand.



SPECIFICATIONS

| | HOT SPOT | HOT SPOT VC | MICRO SPOT VC |
|--------------------------------|---|--|---|
| Speaker Compliment | 2- 5" drivers (S5N-8) | 2- 5" drivers (S5N-8) | 1- 5" driver (S5N-16) |
| Magnet Structure | 14.8 oz. (.42 kg) total | 14.8 oz. (.42 kg) total | 7.4 oz. (.21 kg) |
| Power Handling | 200 watts cont. | 200 watts cont. | 100 watts cont. |
| Sensitivity (1 watt @ 1 meter) | 98 dB (1 KHz octave band) | 98 dB (1 KHz octave band) | 92 dB (1 KHz octave band) |
| Frequency Response | 150 Hz- 18 KHz | 150 Hz- 18 KHz | 150 Hz- 18 KHz |
| Nominal Impedance | 16 ohms | 16 ohms | 16 ohms |
| Input Connections | 1/4" jacks | 1/4" jacks | 1/4" jacks |
| SPL/OWT | 28 | 28 | 43.37 |
| Enclosure | ABS Plastic | ABS Plastic | Fire Regardant Styrene |
| Dimensions | 6.75" x 10.94" x 6" (171mm x 278mm x 52mm) | 6.75" x 10.94" x 6" (171mm x 278mm x 152mm) | 7" x 6" x 5.125" (178mm x 152mm x 130mm) |
| Net Weight | 4.5 lbs. (2.04kg) | 4.5 lbs. (2.04kg) | 2.7 lbs. (1.23kg) |
| Additional Feature | | Volume control; range 18 dB | Volume control; range 18 dB |

The Galaxy Audio SSN-8 is ferro fluid cooled

Far-O-SOUND
The Solution Is Loud And Clear™

SPECIFICATIONS

PA5X140

| | |
|--------------------------------|--|
| Speaker Compliment | 1- 5" driver (S5N-8) |
| Magnet Structure | 7.4 oz. (.21 kg) |
| Power Handling | 100 watts cont. |
| Sensitivity (1 watt @ 1 meter) | 98 dB (1 kHz octave band) |
| Frequency Response | 150 Hz- 18 kHz |
| Nominal Impedance | 8 ohm |
| Input Connections | see amplifier section |
| SPLOWT | 9.12 |
| Enclosure | Fire Retardant Styrene |
| Dimensions | 7"x 11"x 5.25" (177mm x 279mm x 133mm) |
| Net Weight | 10.7 lbs. (4.9kg) |
| Additional Feature | see amplifier section |
| AMPLIFIER | |
| Power Output | 100 watts @ 8 ohms 146 watts @ 4 ohms |
| Distortion | 8 ohm < 0.05% |
| Minimum Load | 4 ohm < 0.1% |
| Frequency Response | 4 ohms |
| Equalization | 200 Hz- 20 kHz three band center detent LOW: +/-10 dB @ 300 Hz MID: +/-10 dB @ 2 kHz HIGH: +/-12 dB @ 16 kHz |
| Input Connections | one 1/4-inch balanced one XLR 24V Phantom PWR |
| Output Connections | one 1/4-inch for 8 ohm load one RCA line out |

The Galaxy Audio S5N-8 is ferro fluid cooled

Fer·osound
The Solution Is Loud And Clear™

THREE YEAR LIMITED WARRANTY

This warranty gives you specific legal rights, and you may also have other rights which may vary from state to state. This warranty is extended to the purchaser and to any purchaser from him for value.

GALAXY AUDIO warrants the materials and workmanship of its products for a period of three full years from the date of the original purchase.

The following are not covered by the warranty:

1. Damage to or deterioration of the exterior cabinet which occurs after delivery.
2. Damage after initial delivery resulting from accident, misuse or neglect.
3. Damage resulting from failure to follow instructions contained in the owner's manual.
4. Damage resulting from the performance of repairs by someone other than GALAXY AUDIO or an authorized GALAXY AUDIO service center.
5. Damage occurring during the shipment or delivery of any GALAXY AUDIO product to GALAXY AUDIO or an authorized service center after initial delivery of the product to you.
6. Damage to any GALAXY AUDIO product which has been altered, or on which the serial number has been effaced or removed.

If your unit requires service, it must be returned, shipping charges prepaid to an authorized GALAXY AUDIO service center in the United States. (This warranty is not enforceable outside the U.S.) If you are not able to locate an authorized service center in your area, please call or write GALAXY AUDIO, 601 E.Pawnee, Wichita, Kansas 67211, (316) 263-2852. We will then refer you to an authorized service center to which the unit may be returned, or we may advise you to return your unit to the factory for service. Under no circumstances should you return your unit to the factory without written instruction to do so. If service is required, you must present the original or a copy of the bill of sale as a proof of date of purchase of your unit. Upon receipt of your unit for service, GALAXY AUDIO or the authorized service center will repair or replace your unit as soon as possible, but in no event later than 30 days after the receipt of the unit. We will return the unit to you, shipping charges prepaid, provided the necessary repairs are covered by this warranty. IMPLIED WARRANTIES OF MERCHANT ABILITY AND FITNESS FOR PARTICULAR PURPOSE ARE LIMITED IN DURATION TO THE LENGTH OF THIS WARRANTY, UNLESS OTHERWISE PROVIDED FOR BY STATE LAW. GALAXY AUDIO'S LIABILITY IS LIMITED TO THE REPAIR OR REPLACEMENT, AT OUR OPTION, OF ANY DEFECTIVE PRODUCT, AND SHALL IN NO EVENT 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 OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS AND EXCLUSIONS MAY NOT APPLY TO YOU.

GALAXY AUDIO does not authorize any third party, including any dealer or Authorized Service Center, to assume any liability on behalf of GALAXY AUDIO or to make any warranty for GALAXY AUDIO.



GALAXY AUDIO

1-800-369-7768 www.galaxyaudio.com
P.O. BOX 16285 Wichita, Ks 67216-0285

Specifications in this manual are subject to change without notice.



1-800-369-7768 www.galaxyaudio.com
P.O. BOX 16285 Wichita, Ks 67216-0285

REGISTRATION CARD

Registration information is used ONLY by GALAXY AUDIO and will be kept strictly confidential.

Registration

Name _____ Phone _____
Address _____
City, State, Zip _____
email _____
Dealer _____ PurchaseDate _____

Serial number

Model

This Galaxy Audio product will be used for:

- Live Sound
- Church
- Recording**
- Home/Project Studio
- Commercial Studio
- Post-Production/Mastering

Broadcast

- On-Air
- Production

What magazines do you read? _____

How can Galaxy Audio better serve you?

PLACE
STAMP
HERE

GALAXY AUDIO
P.O. BOX 16285
WICHITA, KS 67216-0285