



biamp.

**AMP-A460H
OPERATION MANUAL**

NOVEMBER 2016

A460H - Setup and Installation

Setup and Use

CAUTION

All speaker wiring connections should be made by qualified personnel and with the amplifier power removed. The 100V output requires Class 3 wiring. Please refer to a qualified electrician or other qualified person according to local codes.

Installation

Each unit requires a space of 1.75 inch (44mm) high, 8.7 inch (221mm) wide with 10.47 inch (266mm) depth and may be mounted on a flat surface or in a rack enclosure.

Install the unit away from heat sources, such as vents and radiators, and in rooms with adequate ventilation. Ensure that air can circulate freely behind, beside, and above the unit where possible. Do not exceed the ambient operating temperature of 104° F (42°C). Be aware of conditions in an enclosed rack that may cause the temperature to exceed ambient room conditions.

Rack Mounting

The unit ships with one 1.75 inch (44mm) high and 19 inch (483mm) wide rack mount panel. This is designed to connect up to two A460H amplifiers. The rack mount kit includes eight screws, four nuts and a faceplate.

Rack mounting the amplifiers is achieved by aligning the supplied rack panel faceplate holes with the corresponding holes in the front of the amplifier and screwing them together.

If only one amplifier is used, then the additional four supplied screws and nuts may be used to 'blank off' the four remaining open holes in the rack panel.

Mounting the faceplate using screws with washers (not supplied) will prevent marring of the front panel.

Custom mounting

Mounting holes that fit four #4 sheet metal screws (not supplied) are available on the top cover of the amplifier.

NOTE

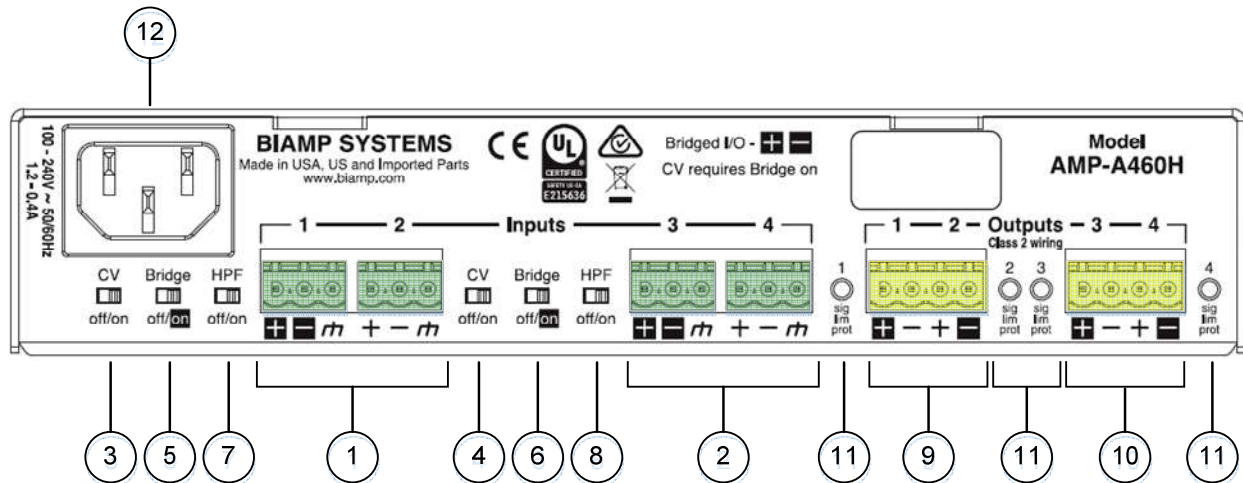
Any screws used must not exceed ¼ inch (6mm) depth into the top of the A460H enclosure

Operational guidelines

CAUTION

Attention should be paid to the Connections and Setup sections to configure the signal path correctly from the input device.

A460H - Rear Panel Overview



1. Input Channels 1 & 2
2. Input Channels 3 & 4
3. Constant Voltage Switch - Channels 1 & 2
4. Constant Voltage Switch - Channels 3 & 4
5. Bridge Mode Switch - Channels 1 & 2
6. Bridge Mode Switch - Channels 3 & 4
7. High Pass Filter Switch - Channels 1 & 2
8. High Pass Filter Switch - Channels 3 & 4
9. Speaker Outputs 1 & 2
10. Speaker Outputs 3 & 4
11. Status LEDs for Channels 1, 2, 3 & 4
 - Green – Signal Present
 - Amber – Signal or Thermal Limit Mode
 - Red – Channel in Protect Mode
12. AC Power Connection

AC Power Socket

Provides for connection of the appropriate power cord. Each amplifier uses a switch mode power supply that has an operating voltage of 100-240V at 50/60 Hz.

CAUTION

Do not remove or defeat the ground prong on the power cord, as this will constitute a shock hazard. Equipment should be connected to a mains socket outlet with a protective earthing connection. This plug is the main disconnecting device and should remain readily operable. There are no user interchangeable parts. Please contact Biamp Technical Support or your local distributor for all service requirements.

Amplifier Output Connections

CAUTION

All speaker wiring connections should be made by qualified personnel and with the amplifier power removed. The 100V output requires Class 3 wiring. Please refer to a qualified electrician or other qualified person according to local codes.

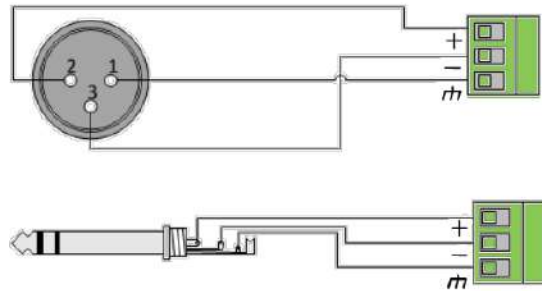
Speaker Connection

To minimize power loss, use a speaker cable of appropriate gauge for the load impedance. For long speaker cables, choose a low capacitance cable to minimize high frequency loss. Use the supplied plug-in barrier strip connectors to connect loudspeaker outputs. If stranded speaker wire is used, be sure to incorporate all strands into the connector, as stray strands can short to the adjacent terminal or chassis. Do not leave excessive bare wire outside the terminals, as this can lead to shorts. Use of the supplied cable restraints is required to secure the cable in the connector. To facilitate parallel wiring, each connector allows for the connection of two conductors to each amplifier channel.

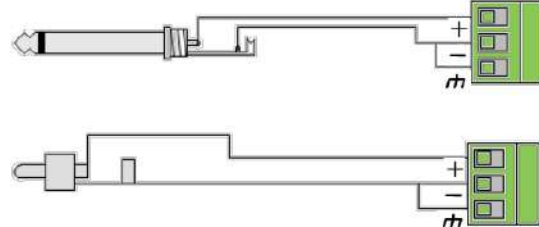
Input Wiring

All wiring examples are Single Channel Connections

Balanced Input Connections



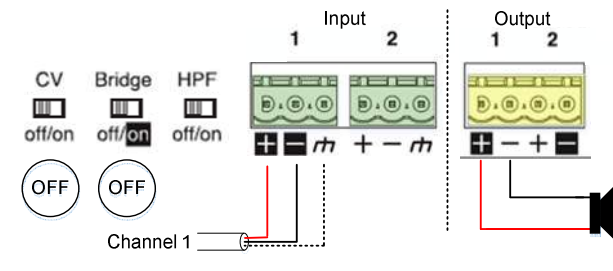
Unbalanced Input Connections



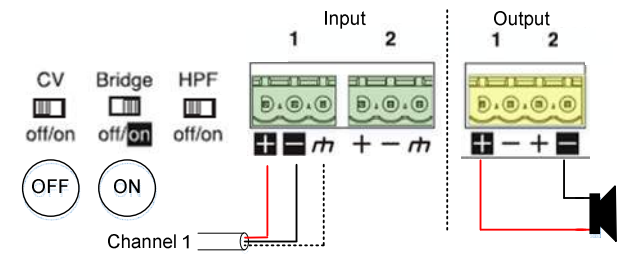
Speaker Wiring

All wiring examples are Single Channel Connections

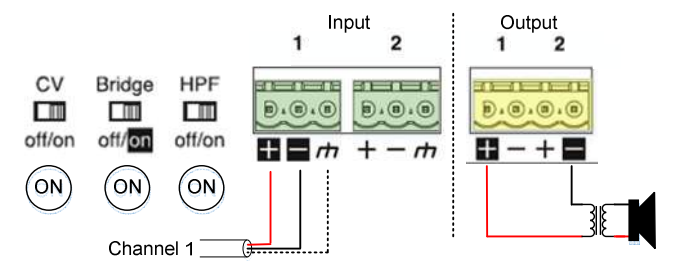
Single Channel 4 or 8 ohm



Bridged mode 4 or 8 ohm



Bridged mode 70/100V



Gain staging

The amplifier channels are intended to be used with the default output blocks available in Tesira Software.

Care should be taken to match the speaker load to the output capabilities (wattage) of the amplifier. For example, if a low-impedance single channel speaker load is 60 watts you are perfectly matched at the nominal input level.

Speaker loads less than the rated output of the amplifier will require adjustment to the analog output of the output device.

Note

To keep correct input level and noise floor ratio the use of the 'Full Scale' analog output attenuation on the output device should be used to adjust the input gain being sent to the amplifier.

Low impedance considerations

Single Channel Mode

In Single Channel mode - up to four 60 watt channels can be driven at 4 or 8 Ohms at the same time.

Bridge and 70/100V Mode

In Bridged or CV mode (Constant Voltage mode, or 70/100V mode), channel 1 and 2 as well as 3 and 4 can be independently bridged together. Inputs 1 and 3 should be used.

Constant Voltage considerations

There is no wiring or switch setup difference between 70V and 100V operation. When using the amplifier in Constant Voltage mode, the CV, Bridge, and HPF switches **must** be enabled. The amplifier only supports Constant Voltage mode when the amplifier channels are bridged.

For 70V operation the nominal signal being sent from the output device to the amplifier input should be 0dbu.

For 100V operation increasing the nominal signal being sent from the output device to the amplifier input should be +1.6dbu.

Note

The HPF (High Pass Filter) switch should be enabled as part of the 70V or 100V configuration.

The Bridge switch must be enabled when using the amplifier in 70V or 100V mode.

A460H - Amplifier Current Draw

AMP-A460H

Current Draw	<i>1/8 Power</i>					
	4 ohm Amps	8 ohm Amps	Bridged		Constant Voltage	
			4 ohm Amps	8 ohm Amps	70V Amps	100V Amps
100VAC 50Hz	1.1	0.7	0.9	0.8	0.8	0.8
100VAC 60Hz	1.1	0.7	0.9	0.8	0.8	0.8
120VAC 60Hz	1.0	0.6	0.8	0.7	0.7	0.7
230VAC 50Hz	0.6	0.4	0.5	0.5	0.4	0.4
240VAC 50Hz	0.6	0.4	0.5	0.4	0.4	0.4

Current Draw	<i>1/3 Power</i>					
	4 ohm Amps	8 ohm Amps	Bridged		Constant Voltage	
			4 ohm Amps	8 ohm Amps	70V Amps	100V Amps
100VAC 50Hz	1.5	1.3	1.7	1.5	1.6	1.7
100VAC 60Hz	1.5	1.3	1.7	1.5	1.6	1.7
120VAC 60Hz	1.5	1.1	1.4	1.2	1.3	1.4
230VAC 50Hz	0.7	0.7	0.8	0.7	0.8	0.8
240VAC 50Hz	0.7	0.7	0.7	0.7	0.7	0.8

Current Draw	<i>Rated Power</i>					
	4 ohm Amps	8 ohm Amps	Bridged		Constant Voltage	
			4 ohm Amps	8 ohm Amps	70V Amps	100V Amps
100VAC 50Hz	3.9	3.6	4.4	3.9	4.4	3.3
100VAC 60Hz	3.8	3.6	4.4	3.9	4.4	3.3
120VAC 60Hz	3.1	2.9	3.6	3.2	3.6	3.0
230VAC 50Hz	1.6	1.5	1.8	1.6	1.8	1.5
240VAC 50Hz	1.5	1.4	1.7	1.6	1.7	1.5

A460H Specifications

Specification Table

Number of Channels	4	Power	
Maximum Rated Output (Single Channel Driven):		AC	100V-240V, 50Hz / 60 Hz
4Ω, 8Ω	60W	Environment:	
Bridged 4Ω, 8Ω:	120W	Cooling	Convection
Bridged 70V/100V:	120W	Ambient Operating Temperature	32-104°F (0-40°C)
THD +N		Humidity	95%, non-condensing
20Hz-20kHz, at rated power:	<0.3%	Rear Panel Indicators	
	(all power ratings at rated power), 20Hz to 20kHz		Per channel signal
Frequency Response	+/-1dB, 20Hz to 20kHz		Per pair protection mode
Dynamic Range	100 dB, 8 ohm reference, 20Hz to 20 kHz, unweighted		Per channel limiting indicator
Input Sensitivity		Rear Panel Control	
0 dBu at rated power	4, 8 ohm and 70V modes	80 Hz HPF:	On or Off, per pair
+1.6 dBu at rated power	100V mode	Mode selection:	Standard or Bridged per pair
Amplifier Topology	Class D	Constant Voltage selection:	Per pair (bridge mode only)
Accessories included	Rack mount kit	Compliance:	
Dimensions:			UL and C-UL Listed (USA and Canada)
Height:	1.75 Inches (44mm)		FCC Part 15B (USA)
Width:	8.7 Inches (221mm)		CE Marked(Europe)
Depth:	10.47 Inches (266mm)		RCM (Australia)
Weight:	4.2lbs (1.91 kg)		EAC (Eurasian Customs Union) Pending
			RoHS Directive (Europe)
			CCC (China) Pending
			KCC (Korea) Pending

ВАЖНЫЕ ИНСТРУКЦИИ ПО ТЕХНИКЕ БЕЗОПАСНОСТИ

- 1) Прочтите эту инструкцию.
- 2) Сохраните эту инструкцию.
- 3) Обратите внимание на все предостережения.
- 4) Соблюдайте все указания этой инструкции.
- 5) Не используйте данное устройство вблизи воды.
- 6) Очищайте данное устройство только сухой тканью.
- 7) Не перекрывайте вентиляционные отверстия устройства. Производите установку согласно инструкциям производителя.
- 8) Не устанавливайте устройство вблизи источников тепла, например радиаторов, обогревателей, электроплит и других приборов (включая усилители), выделяющих тепло.
- 9) Не пренебрегайте защитной функцией вилки с заземлением. Вилка с заземлением имеет два питающих контакта и вывод заземления. Вывод заземления обеспечивает безопасность. Если вилка не подходит к разъему розетки, проконсультируйтесь с электриком касательно замены устаревшей розетки.
- 10) Не наступайте на шнур электропитания и не перегибайте его, особенно в местах крепления вилки, возле электрических розеток и мест выхода шнура из устройства.

11) Используйте только предусмотренные производителем комплектующие и аксессуары.

12) Используйте достаточно прочные аппаратные стойки, тележки, подставки или столы, обеспечивающие требуемое тепловыделение и крепление к конструкции здания.





Соблюдайте осторожность при перемещении тележки с устройством, чтобы избежать травм при опрокидывании.


13) Отключите устройство от сети во время грозы и в случае, если оно не используется в течение длительного времени.

14) Для технического обслуживания обращайтесь только к квалифицированным специалистам. Обслуживание необходимо, если устройство было каким-либо образом повреждено, например, если повреждены шнур питания или вилка, пролита жидкость, внутрь попали предметы, устройство подвергалось воздействию дождя или влаги, не функционирует нормально, а также если устройство уронили.


Пояснение графических символов

 Разряд молнии: наличие опасного для жизни напряжения во время работы данного устройства. Не прикасайтесь к контактам, обозначенным этим символом, когда устройство подключено к питанию.

 Знак восклицания: заменяйте компоненты (например, предохранители) только компонентами с характеристиками, рекомендованными производителем. Невыполнение этого правила негативно скажется на безопасной работе устройства.

 Опасность движущихся лопастей вентилятора: перед обслуживанием отключите питание и держитесь на расстоянии от движущихся лопастей вентилятора..

ПРЕДУПРЕЖДЕНИЕ! Для снижения риска возгорания или поражения электрическим током не подвергайте устройства воздействию дождя или влаги. Защищайте устройства от капель и брызг и не ставьте на них какие-либо предметы, наполненные жидкостью, например, вазы.

ПРЕДУПРЕЖДЕНИЕ! Контакты 100 В громкоговорителей, обозначенные символом  опасны для жизни, когда находятся под напряжением. Внешняя проводка, подводимая к этим контактам, должна устанавливаться квалифицированным обученным персоналом.

ПРЕДУПРЕЖДЕНИЕ! Устройства с питанием от сети используют защитное заземление, поэтому должны подключаться к надлежащим образом заземленной сетевой розетке.

Отключение устройства. Электрическая вилка используется для отключения питания от сети и должна оставаться доступной для эксплуатации.

ПРЕДОСТЕРЕЖЕНИЕ! При наличии телефонного интерфейса POTS подключение устройства к телефонным линиям должно производиться квалифицированным обученным персоналом. Для снижения риска возгорания при подключении к телефонным линиям используйте только одножильный медный провод типа 26 AWG.

Предназначено для установки и обслуживания только опытным персоналом

ПРЕДОСТЕРЕЖЕНИЕ! Для снижения риска поражения электрическим током установку и обслуживание устройств Viamp должны выполнять только лица, которые являются опытными специалистами по установке аудиосистем Viamp.

Не проводите какое-либо обслуживание, помимо указанного в инструкциях по эксплуатации, если вы не обладаете соответствующим опытом и квалификацией.

Опытный персонал должен отключить питание прежде чем открывать устройство.

ПРЕДОСТЕРЕЖЕНИЕ! Шаги по установке, касающиеся вспомогательного питания, предназначены только для опытного персонала и должны отвечать всем нормам и законам, действующим в вашей стране.

- Национальный электрический кодекс, ANSI/NFPA 70 для США.
- Канадский электрический кодекс, часть 1, CSA C22.1, разделы 2–128, 12–010(3) и 12–100 для Канады.

Инструкции по настенному монтажу. Устройства, монтируемые на стену, должны надежно крепиться к гипсокартону или подобной поверхности не менее чем 4 винтами для дерева (2 винта для устройств с двумя монтажными отверстиями). Можно использовать альтернативные крепления, в том числе анкеры для гипсокартона, саморезы для листового металла, размещенные в металлических стойках, или винты для дерева, заходящие в деревянные стойки не менее чем на 1,5 см.

RoHS COMPLIANT



This Biamp product, including all attendant cables and accessories supplied by Biamp, meets all requirements of EU Directive 2011/65/EU (RoHS2). The EU RoHS Materials Content Declaration document may be obtained at www.biamp.com

(This information is presented to comply with the requirements of Chinese law SJ/T11363-2006)

有害物质表 (Hazardous Substances Table)

Biamp Systems Corporation

AMP-A460H 擴音器 (AMP-A460H Amplifier)

部件名称 (Part Name)	有毒有害物质或元素 (Substances)					
	Pb 铅	Hg 汞	Cd 镉	Cr+6 六价铬	PBB	PBDE
设备机箱 (Equipment Chassis)	X	O	X	O	O	O
插拔式接线端子 (Plug-in Terminal Blocks)	O	O	O	O	O	O
手册和其他书面文档 (Manual and Paper Documents)	O	O	O	O	O	O
包装箱和所有包装材料 (Box and Packing Materials)	O	O	O	O	O	O

O: 表示该部件所有均质材料中的这种有毒有害物质低于 SJ/T11363-2006 的限制要求.

X: 表示该部件中至少有一种均质材料所含的这种有毒有害物质高于 SJ/T11363-2006 的限制要求.

在电触头和 (或) 镀镉所含的均质材料中, 镉及其化合物的含量可以超过 0.01%, 但欧盟指令 91/338/EEC (根据欧盟指令 76/769/EEC) 限制销售和使用某些危险物质和制剂部分中所禁止的用途除外

在以下一种或多种物质所含的均质材料中, 铅及其化合物的含量可以超过 0.1%:

- 1) 电子元器件中玻璃内所含的铅
- 2) 铅在钢材中是作为一种合金元素, 含量可达 0.35%
- 3) 铅在铝材中是作为一种合金元素, 含量可达 0.4%
- 4) 铅在铜材中是作为一种合金元素, 含量可达 4%
- 5) 高熔点类焊料中的铅 (即铅料合金, 铅含量超过 85%)
- 6) 电子陶瓷部件内的铅
- 7) 由两种以上元素组成的焊料中所含的铅, 用于连接针脚和微处理器包装, 其中铅的含量超过 80% 但低于 85%
- 8) 顺应针连接系统内的铅
- 9) 倒装芯片封装中半导体芯片及载体之间形成可靠连接所用焊料中的



在正常使用情况下, 中国环保使用期限为 10 年, 条件是:

- 环境温度为 (Ambient Temperature) 0-40C (32-104°F)
- 湿度为 0-95%, 无凝结
- 海拔高度为 0-10,000 英尺
- 气流不受阻碍
- 没有水或其他液体进入任何部件
- 电源为 PoE+, IEEE 802.3at, Class 4
- 部件没有损坏 (损坏部件应立即修理)
- 由工厂授权人员使用批准的材料进行所有维修

Biamp's Limited Warranty

BIAMP SYSTEMS IS PLEASED TO EXTEND THE FOLLOWING 5-YEAR LIMITED WARRANTY TO THE ORIGINAL END USER CUSTOMER OF THE PRODUCTS DESCRIBED IN THIS MANUAL

1. This limited warranty is being offered by Biamp Systems Corporation. Biamp Systems warrants to the original end user customer of new Biamp Systems products from an authorized Biamp Systems dealer that the product will be free from defects in materials and workmanship for a specified period (the "Warranty Period"), subject to the terms and conditions set forth below. The Warranty Period for the products described in this manual shall be five (5) years. The Warranty Period begins (a) the date of the original end user's purchase from an authorized Biamp Systems dealer or (b) six months after the product is first shipped from Biamp Systems' factory to an authorized Biamp Systems dealer or distributor, whichever occurs earlier. This warranty extends only to the original end user customer and is not assignable or transferrable.
2. Within the Warranty Period, Biamp Systems will repair or replace, at Biamp Systems' option, nonconforming product, provided that Biamp Systems is notified within 30 days of the identification of such defect or failure. Replacement products may be new or reconditioned. If the repair or replacement of your nonconforming product is not reasonably available, at Biamp Systems' discretion, Biamp Systems will refund you the purchase price. As a condition to receiving the benefits of this warranty, you must provide Biamp Systems with documentation that establishes that you were the original end user purchaser of the product from an authorized Biamp Systems dealer. Such evidence may consist of your sales receipt.
3. Upon notice, Biamp Systems will provide instructions on the warranty claim procedures to be followed and issue a Return Authorization (RA) number if required. Any export/import authorizations or duties, transportation and insurance charges to the Biamp Systems factory, or other service facility designated by Biamp Systems, for warranty service shall be your responsibility. Transportation and insurance charges from the Biamp Systems' factory or service facility after a warranty repair or for a warranty replacement will be paid by Biamp Systems. Biamp Systems is not responsible for any damage to the product during transit to the Biamp Systems' factory or service facility. Biamp Systems, at its sole discretion, will determine warrantable failures upon receipt of your product or upon inspection of your product by an authorized Biamp Systems dealer. All products that are returned by you and replaced by Biamp Systems will become the property of Biamp Systems.
4. This warranty will be VOID if the serial number has been removed or defaced; or if the product has been altered, subjected to damage, abuse or rental usage, repaired by any person not authorized by Biamp Systems to make repairs; damaged due to improper or inadequate maintenance; operated outside the normal environmental specifications for the product; or installed in any manner that does not comply with Biamp Systems' recommendations. This warranty does not apply to damage caused by an accident, power surge, flooding, fire, earthquake, or other external causes. This warranty does not apply to damage caused by abuse or misuse of the product.
5. Electro-mechanical fans, electrolytic capacitors, gooseneck microphones, cords connecting handheld microphones, hard-drives, displays, consumable parts (i.e. batteries), and normal wear and tear of items such as paint, knobs, handles, keypads and covers are not covered under this warranty. All software or firmware distributed by Biamp Systems is provided AS IS and without any warranty of any kind, except as expressly provided in any documentation or license agreement furnished with the software or firmware. This warranty does not apply to third party products resold by Biamp Systems.
- 6. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. BIAMP SYSTEMS DISCLAIMS ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.**
7. The remedies set forth herein shall be the purchaser's sole and exclusive remedies with respect to any defective product. No repair or replacement of any product or part thereof will extend the applicable warranty period for the entire product. The specific warranty for any repair will extend for a period of 90 days following the repair or the remainder of the warranty period for the product, whichever is longer.
8. No agent, employee, distributor or dealer of Biamp Systems is authorized to modify this warranty or to make additional warranties on behalf of Biamp Systems. Statements, representations or warranties made by any dealer do not constitute warranties by Biamp Systems. Biamp Systems shall not be responsible or liable for any statement, representation or warranty made by any dealer or other person. Biamp Systems makes no other warranty beyond what is contained in this writing.
9. No action for breach of this warranty may be commenced more than one year after the expiration of this warranty.
- 10. BIAMP SYSTEMS SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, INCLUDING LOST PROFITS OR LOSS OF USE ARISING OUT OF THE PURCHASE, SALE, OR USE OF THE PRODUCTS, EVEN IF BIAMP SYSTEMS WAS ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.**