BIAMP®

AudiaEXPI-4, AudiaEXPO-4 & AudiaEXPI/O-2

Input & Output Expanders

Operation Manual

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INTRODUCTION

AudiaEXPI-4 is an input expander that accepts four mic/line analog audio inputs and provides four channels of digital audio output via CobraNet®. AudiaEXPO-4 is an output expander that accepts four channels of digital audio input via CobraNet and provides four mic/line-level analog audio outputs. AudiaEXPI/O-2 is an input/output expander that accepts two mic/line analog audio inputs, provides two channels of digital audio output via CobraNet, accepts two channels of digital audio input via CobraNet, and provides two mic/line-level analog audio outputs. All three expanders are in a convenient half-rack-width format. They can simply add inputs and outputs to a centralized Audia system or extend system boundaries by providing inputs and outputs in remote locations. AudiaEXPI-4, AudiaEXPO-4, and AudiaEXPI/O-2 are represented as explicit CobraNet Input or Output blocks in Audia software for easy inclusion into any system design. All three expanders may also be used to provide additional inputs and outputs to other CobraNet-compliant systems or devices and are Power-over Ethernet (PoE) capable.

AudiaEXPI-4 features:

- 4 mic/line analog inputs on plug-in barrier strips
- 24-bit A/D converters with 48kHz sample rate
- 4 channels of digital audio output via CobraNet
- Supported using explicit CobraNet I/O blocks in Audia software
- Power-over Ethernet (PoE) capable
- Convenient half-rack-width format
- Front panel input level controls and peak indicators
- Rotary encoder with LCD for programming/setup
- May be used with any CobraNet compliant system
- RoHS compliance and AES grounding practices
- CE marked
- Covered by Biamp Systems' five-year warranty

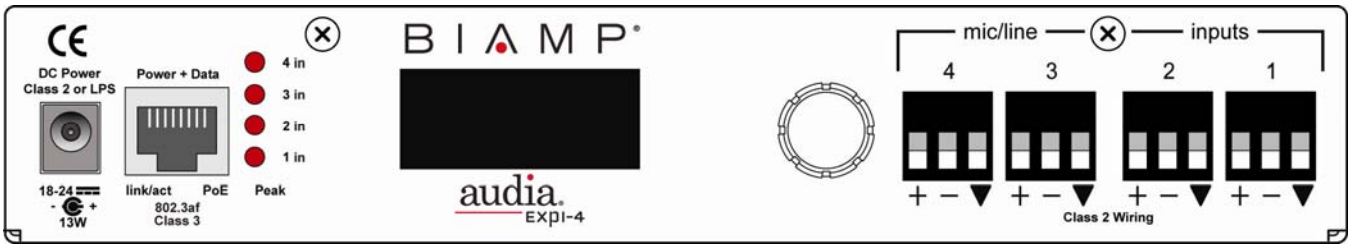
AudiaEXPO-4 features:

- 4 channels of digital audio input via CobraNet
- 24-bit D/A converters with 48kHz sample rate
- 4 mic/line-level analog outputs on plug-in barrier strips
- Supported using explicit CobraNet I/O blocks in Audia software
- Power-over Ethernet (PoE) capable
- Convenient half-rack-width format
- Front panel adjustable analog output level controls
- Rotary encoder with LCD for programming/setup
- May be used with any CobraNet-compliant system
- RoHS compliance and AES grounding practices
- CE marked
- Covered by Biamp Systems' five-year warranty

AudiaEXPI/O-2 features:

- 2 mic/line analog inputs on plug-in barrier strips
- 2 channels of digital audio output via CobraNet
- 2 channels of digital audio input via CobraNet
- 2 mic/line-level analog outputs on plug-in barrier strips
- 24-bit A/D and D/A converters with 48kHz sample rate
- Power-over Ethernet (PoE) capable
- Convenient half-rack-width format
- Front panel adjustable input and analog output level controls and peak indicators
- Rotary encoder with LCD for programming/setup
- Supported using explicit CobraNet I/O blocks in Audia software
- May be used with any CobraNet-compliant system
- RoHS compliance and AES grounding practices
- CE marked
- Covered by Biamp Systems' five-year warranty

AudiaEXPI-4 - Front Panel



Peak Indicators (Inputs 1–4): These red LEDs will light whenever input channel signal levels exceed 6dB below clipping. Use this feature to aid in the adjustment of the Trim controls (see below).

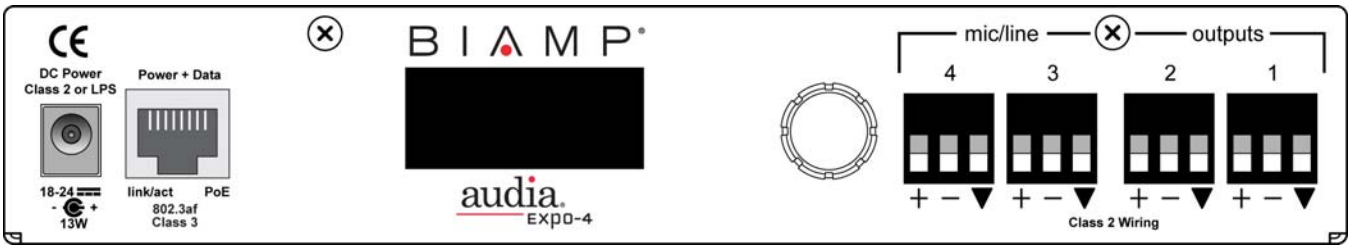
Rotary Encoder & LCD Display: This control and display are used for initial setup of the AudiaEXPI-4 unit. When power is first applied to the unit, the display will cycle through a product description, followed by a title screen. Press the control to enter setup. Rotate the control to make a selection, then press the control again to edit that selection. Additional levels of selection may be available using this same routine. Some edits will require a choice of OK or CANCEL. Some selections are only informational and cannot be edited. Select BACK to return to a previous level, and select → to advance. Primary selections are as follows: BUNDLE NUMBER; COBRANET LATENCY; INPUT GAIN (0 – +66dB steps); PHANTOM POWER (assigns phantom power to inputs); PASSWORD PROTECT (prohibits unauthorized tampering); TITLE DISPLAY (personalized: 2 lines with 8 characters each); ABOUT (Serial#, FW Version, Boot Ver, Board Revisio, CobraNet FW, Mac Address and Up Time)

Mic/Line Inputs: These four mic/line analog audio inputs are provided on balanced plug-in barrier-strip connectors. For unbalanced input, wire high to (+) and ground to both (-) & (▼). For use with condenser microphones, +48 volt volt phantom power is available at these inputs (see Rotary Encoder above).

Power + Data: This RJ45 connector provides the CobraNet digital audio interface. CobraNet allows multiple CobraNet-equipped devices to share digital audio on a system network. A 10/100Base-T Ethernet switch (not hub) is required when networking multiple units. The maximum distance between any unit and an Ethernet switch is 100 meters. Additional Ethernet switches, or even fiber-optics, can be used to further extend distances between units on a system network. A CobraNet-enabled device can support up to 64 channels (depending on manufacturer implementation) of digital audio over Fast Ethernet using CAT-5 cable. CobraNet transmits digital audio on “bundles” of up to (8) channels each. The same is true for receiving digital audio over CobraNet. Bundle numbers are used to determine where digital audio is transmitted and received. Typically, “unicast” bundle numbers (256–65,279) are used to exchange digital audio between two specific devices. With unicast bundles, each CobraNet device can transmit to as many as 16 other devices within a network (2 bundles per channel x 16 bundles max = 32 channels). With “multicast” bundle numbers (1–255), digital audio can be exchanged with multiple devices. Due to network delay, CobraNet has a limitation of seven (7) “hops” (one-way transmissions) within a network.

In order to integrate AudiaEXPI-4 into an Audia system, a CobraNet input block must first be placed into the design layout. AUDIA units intended to receive digital audio from the AudiaEXPI-4 must have their CobraNet jacks connected to the same network. Both the AudiaEXPI-4 unit (hardware) and the CobraNet input block (software) must be assigned matching bundle numbers, before digital audio can be successfully exchanged. CobraNet Latency settings must be identical in all devices, system-wide. Also, unicast and multicast bundle numbers can be used to route digital audio to individual or multiple CobraNet input blocks. Similar considerations may also apply when using AudiaEXPI-4 with other CobraNet compliant systems or devices. AudiaEXPI-4, AudiaEXPO-4, and Audia EXPI/O-2 can exchange digital audio directly (outside of a system network) using either a simple “cross-over” CAT-5 cable or an Ethernet switch.

AudiaEXPO-4 - Front Panel



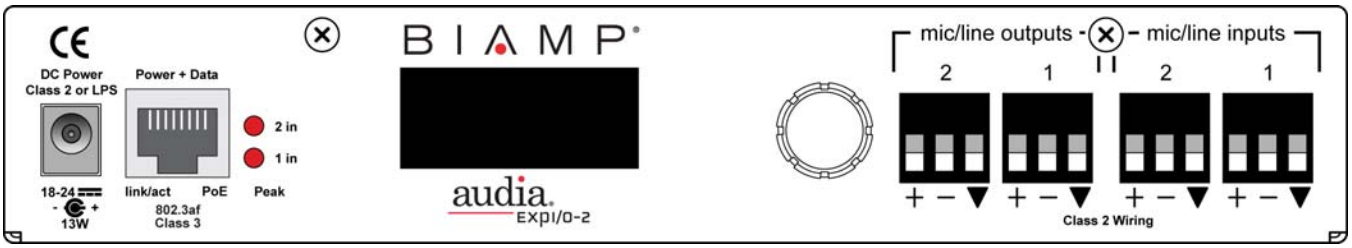
Rotary Encoder & LCD Display: This control and display are used for initial setup of the AudiaEXPO-4 unit. When power is first applied to the unit, the display will cycle through a product description, followed by a title screen. Press the control to enter setup. Rotate the control to make a selection, then press the control again to edit that selection. Additional levels of selection may be available using this same routine. Some edits will require a choice of OK or CANCEL. Some selections are only informational and cannot be edited. Select BACK to return to a previous level, and select → to advance. Primary selections are as follows: BUNDLE NUMBER (CobraNet bundle number); COBRANET LATENCY; OUTPUT GAIN (0, -6, -12, -18, -24, -55db); PASSWORD PROTECT (prohibits unauthorized tampering); TITLE DISPLAY (personalized: 2 lines with 8 characters each); ABOUT (Serial#, FW Version, Boot Ver, Board Revisio, CobraNet FW, Mac Address and Up Time).

Mic/Line Outputs: These four mic/line-level analog audio outputs are provided on balanced plug-in barrier-strip connectors. For unbalanced output, wire high to (+) and ground to (▼), leaving (-) un-connected.

Power + Data: This RJ45 connector provides the CobraNet digital audio interface. CobraNet allows multiple CobraNet-equipped devices to share digital audio on a system network. A 10/100Base-T Ethernet switch (not hub) is required when networking multiple units. The maximum distance between any unit and an Ethernet switch is 100 meters. Additional Ethernet switches, or even fiber-optics, can be used to further extend distances between units on a system network. A CobraNet-enabled device can support up to 64 channels (depending on manufacturer implementation) of digital audio over Fast Ethernet, using CAT-5 cable. CobraNet transmits digital audio on “bundles” of up to (8) channels each. The same is true for receiving digital audio over CobraNet. Bundle numbers are used to determine where digital audio is transmitted and received. Typically, “unicast” bundle numbers (256–65,279) are used to exchange digital audio between two specific devices. With unicast bundles, each CobraNet device can transmit to as many as 16 other devices within a network (2 bundles per channel x 16 bundles max = 32 channels). With “multicast” bundle numbers (1–255), digital audio can be exchanged with multiple devices. Due to network delay, CobraNet has a limitation of seven (7) “hops” (one-way transmissions) within a network.

In order to integrate AudiaEXPO-4 into an Audia system, a CobraNet output block must first be placed into the design layout. Audia units intended to transmit digital audio to the AudiaEXPO-4 must have their CobraNet jacks connected to the same network. Both the AudiaEXPO-4 unit (hardware) and the CobraNet output block (software) must be assigned matching bundle numbers, before digital audio can be successfully exchanged. CobraNet Latency settings must be identical in all devices, system-wide. Also, unicast and multicast bundle numbers can be used to access digital audio from individual or multiple CobraNet output blocks. Similar considerations may apply when using AudiaEXPO-4 with other CobraNet compliant systems or devices. AudiaEXPI-4, AudiaEXPO-4, and AudiaEXPI/O-2 can exchange digital audio directly (outside of a system network) using either a simple “cross-over” CAT5 cable or an Ethernet switch.

AudiaEXPI/O-2 - Front Panel



Peak Indicators (Inputs 1–2): These red LEDs will light whenever input channel signal levels exceed 6dB below clipping. Use this feature to aid in the adjustment of the Trim controls (see below).

Rotary Encoder & LCD Display: This control and display are used for initial setup of the AudiaEXPI/O-2 unit. When power is first applied to the unit, the display will cycle through a product description, followed by a title screen. Press the control to enter setup. Rotate the control to make a selection, then press the control again to edit that selection. Additional levels of selection may be available using this same routine. Some edits will require a choice of OK or CANCEL. Some selections are only informational and cannot be edited. Select BACK to return to a previous level, and select → to advance. Primary selections are as follows: BUNDLE NUMBER (CobraNet bundle number to logic input assignments); COBRANET LATENCY; INPUT GAIN (0 – +66db in 6db steps); OUTPUT GAIN (0, -6, -12, -18, -24, -55 db); PASSWORD PROTECT (prohibits unauthorized tampering); TITLE DISPLAY (personalized: 2 lines with 8 characters each); ABOUT (Serial#, FW Version, Boot Ver, Board Revisio, CobraNet FW, Mac Address and Up Time).

Mic/Line Outputs: These two mic/line-level analog audio outputs are provided on balanced plug-in barrier-strip connectors. For unbalanced output, wire high to (+) and ground to (▼), leaving (-) un-connected.

Mic/Line Inputs: These two mic/line analog audio inputs are provided on balanced plug-in barrier-strip connectors. For unbalanced input, wire high to (+) and ground to both (-) & (▼). For use with condenser microphones, +48 volt phantom power is available at these inputs (see Rotary Encoder above).

Power + Data: This RJ45 connector provides the CobraNet digital audio interface. CobraNet allows multiple CobraNet-equipped devices to share digital audio on a system network. A 10/100Base-T Ethernet switch (not hub) is required when networking multiple units. The maximum distance between any unit and an Ethernet switch is 100 meters. Additional Ethernet switches, or even fiber-optics, can be used to further extend distances between units on a system network. A CobraNet-enabled device can support up to 64 channels (depending on manufacturer implementation) of digital audio over Fast Ethernet, using CAT-5 cable. CobraNet transmits digital audio on “bundles” of up to (8) channels each. The same is true for receiving digital audio over CobraNet. Bundle numbers are used to determine where digital audio is transmitted and received. Typically, “unicast” bundle numbers (256 –65,279) are used to exchange digital audio between two specific devices. With unicast bundles, each CobraNet device can transmit to as many as 16 other devices within a network (2 bundles per channel x 16 bundles max = 32 channels). With “multicast” bundle numbers (1–255), digital audio can be exchanged with multiple devices. Due to network delay, CobraNet has a limitation of seven (7) “hops” (one-way transmissions) within a network.

In order to integrate AudiaEXPI/O-2 into an Audia system, a CobraNet input/output block must first be placed into the design layout. Audia units intended to transmit digital audio to the AudiaEXPI/O-2 must have their CobraNet jacks connected to the same network. Both the AudiaEXPI/O-2 unit (hardware) and the CobraNet input/output block (software) must be assigned matching bundle numbers, before digital audio can be successfully exchanged. CobraNet Latency settings must be identical in all devices, system-wide. Also, unicast and multicast bundle numbers can be used to access digital audio from individual or multiple CobraNet input/output blocks. Similar considerations may apply when using AudiaEXPI/O-2 with other CobraNet compliant systems or devices. AudiaEXPI-4, AudiaEXPO-4, and AudiaEXPI/O-2 can exchange digital audio directly (outside of a system network) using either a simple “cross-over” CAT5 cable or an Ethernet switch.

APPLICATIONS

Airport with Central and Local Announcements, plus Background Music

This application demonstrates the use of Audia® in a moderately large airport with a central control room and six concourses, each with eight boarding gates.

This is a networked system using two Networked Paging Station-1 units, one AudiaEXPI-4 Input Expander unit, one AudiaEXPI/O-2 Input/Output Expander unit in the central control room with an AudiaFLEX unit, two AudiaEXPI-4 Input Expander units, an MCA8050 Multi-Channel Amplifier, and eight Networked Paging Station-1 units in each concourse. Signals from the central control room are distributed to all concourses via fiber-optic transmission of CobraNet® and Ethernet.

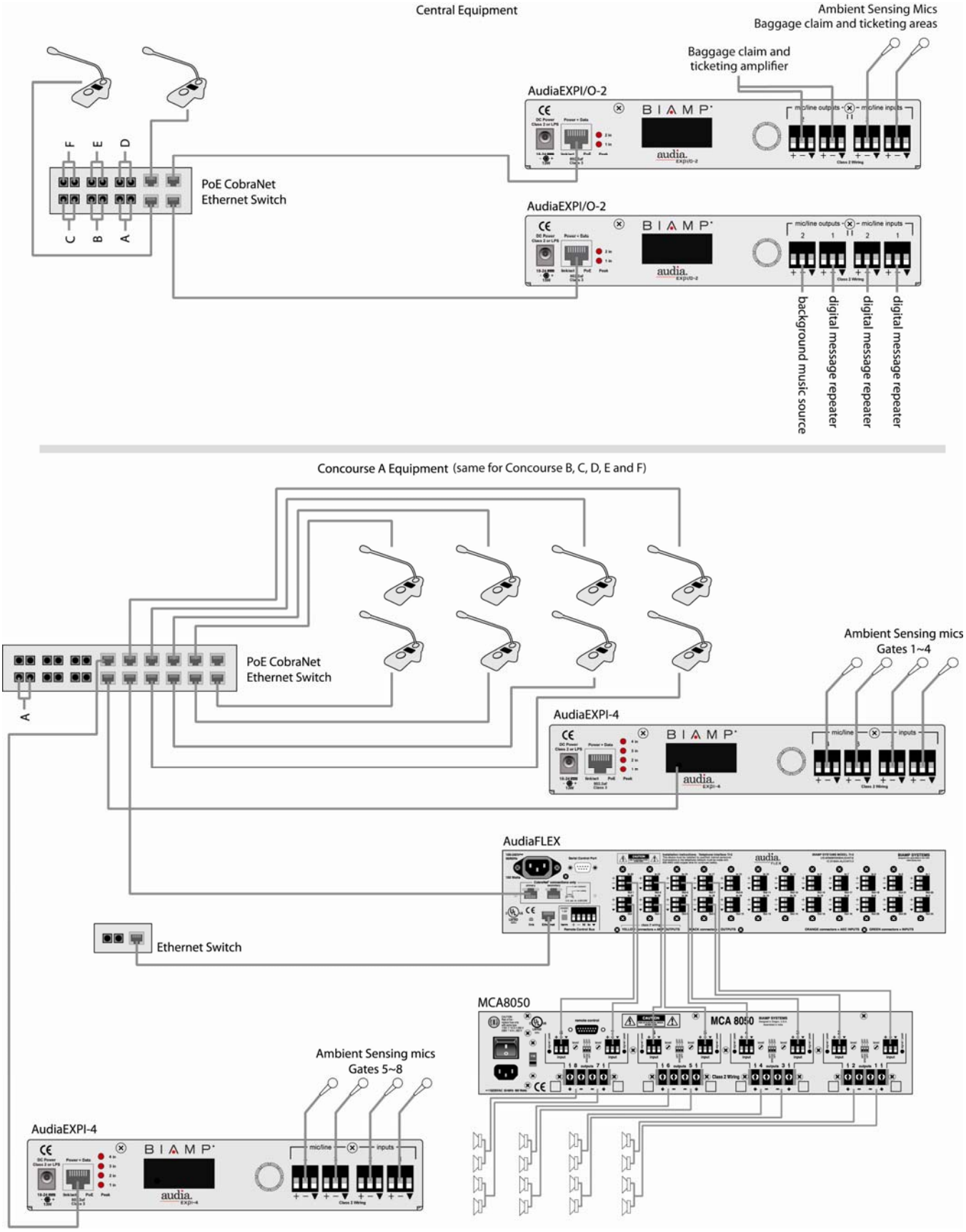
The central control room has two Networked Paging Station-1 units for all-call paging, three digital message repeaters for announcements, a single background music source, one AudiaEXPI-4 Input Expander unit, and one Audia EXPI/O-2 Input/Output Expander unit. Outputs are provided in the central control room for distributed speaker systems (ticket counters, baggage claim, etc.).

Each of the airport's six concourses includes eight boarding gates. An AudiaFLEX unit with an MCA 8050 amplifier unit in each concourse powers the individual boarding gate speaker systems, utilizing two EXPI-4 Input Expander units for analog inputs and eight Networked Paging Station-1 units for local pages. Each boarding gate has its own local announcement microphone, ambient sensing microphone and distributed speaker system.

Signals from the central control room are distributed to all concourses as digital audio via CobraNet. To span the physical distances between units, fiber-optic transmission of CobraNet and Ethernet is employed. In the system design, all microphones are brought in through Levelers (to provide more consistent paging volumes) and all outputs include equalization (to enhance intelligibility). Central paging is mixed for distribution to all areas via a Matrix Mixer (2x1). Signals from the three digital message repeaters are mixed via a Matrix Mixer (3x1), which then feeds a ducker. Background music is fed to this same ducker, thereby allowing distribution of a "message-over-music" signal to all areas. The message-over-music and central paging signals are then fed to another ducker, which allows paging to override the message-over-music signals. Output of this ducker is in turn fed with equalization to the two distributed speaker systems in the central control room.

In each concourse, eight announcement microphones are brought in through individual duckers. The message-over-music signal from the central control room is distributed to all of these duckers. This allows the message-over-music signal to appear at all boarding gates, but to be overridden at each boarding gate by announcements from the local push-to-talk microphone.

The outputs of these duckers then feed an additional set of duckers, all of which receive a central paging signal as their other input. This establishes the following priority-override scheme for each boarding gate: central paging (priority 1); local announcement (priority 2); digital message repeaters (priority 3); background music (priority 4). Due to periodic arrival and departure of passengers, background noise levels at each boarding gate fluctuate significantly. Paging and announcements must continue to be audible, regardless of changes in ambient noise. Therefore, each boarding gate output utilizes an Ambient Noise Compensator, which provides input for an associated ambient sensing microphone. This allows the volume level at each boarding gate to be automatically adjusted in compensation for changes in the local ambient noise.


Central Equipment
Ambient Sensing Mics
Baggage claim and ticketing areas
Baggage claim and ticketing amplifier
AudiaEXPI/O-2
AudiaEXPI/O-2
PoE CobraNet Ethernet Switch
F
E
D
C
B
A
background music source
digital message repeater
digital message repeater
digital message repeater
Concourse A Equipment (same for Concourse B, C, D, E and F)
PoE CobraNet Ethernet Switch
A
Ambient Sensing mics Gates 1~4
AudiaEXPI-4
AudiaFLEX
Ethernet Switch
MCA8050
Ambient Sensing mics Gates 5~8
AudiaEXPI-4

Courthouse with multiple courtrooms and hard-disk court recording

This application describes a major installation in four courtrooms, each with sound reinforcement of ten inputs. Each courtroom includes an assisted listening system, as well as a centralized multi-track computer hard-disk court recording system and localized sound reinforcement. This networked system uses four AudiaEXPO-4 Output Expander units and two AudiaFLEX 20x4 CM units with outputs feeding an MCA8050 Multi-Channel Amplifier. An example system diagram is shown on the following page.

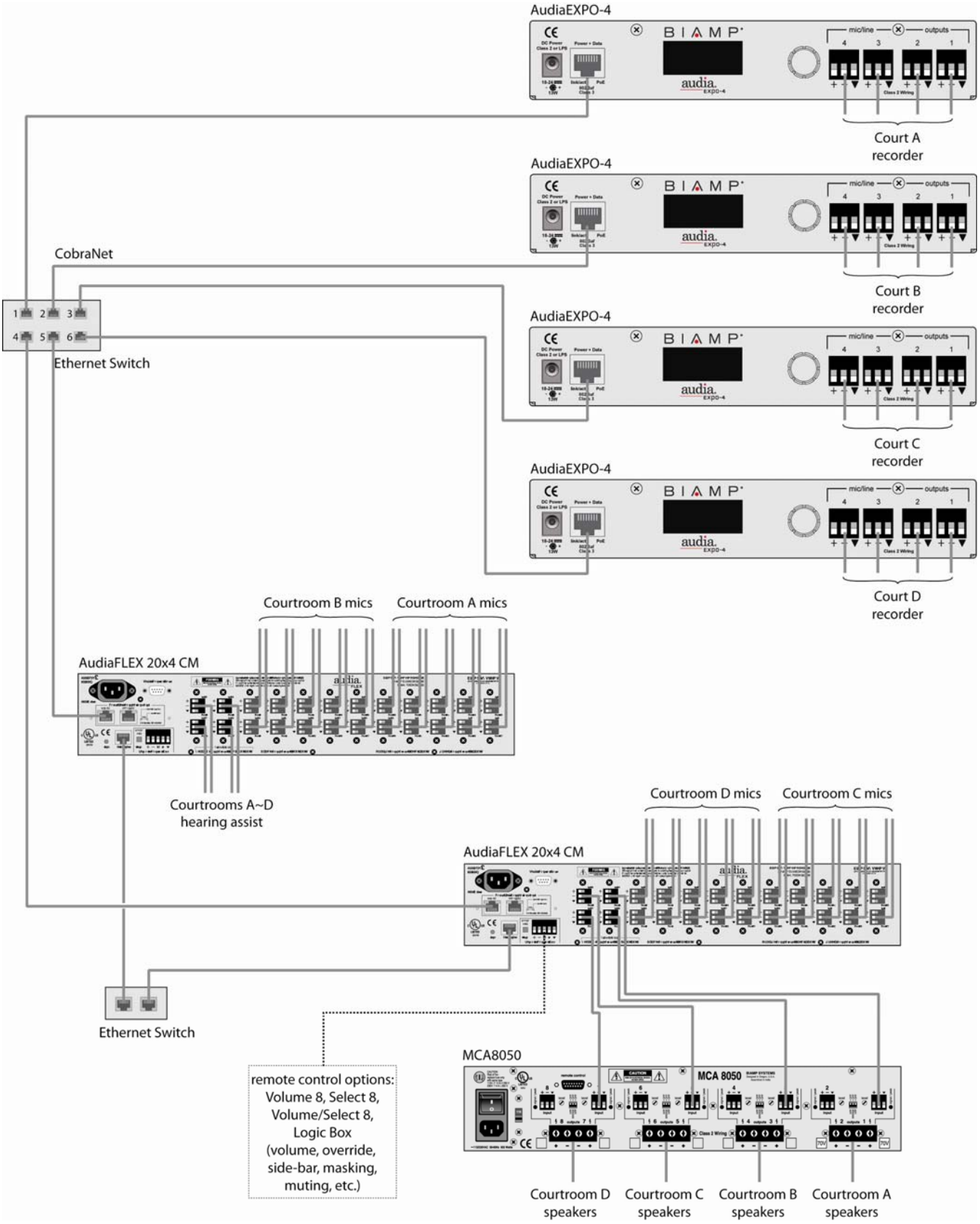
Each courtroom is shown as having ten microphones. Audia inputs accept microphone or line-level signals equally well, so some inputs could instead be from sources such as playback of recorded evidence. Inputs from the four courtrooms are connected to the two AudiaFLEX units, which are located in a local equipment closet. Each AudiaFLEX unit accommodates inputs from two of the courtrooms and provides four system outputs. One unit provides the outputs necessary to feed a hearing assistance system in each of the courtrooms. The other unit provides the outputs needed for sound reinforcement. These outputs feed an MCA8050 Multi-Channel Amplifier.

The MCA8050 amplifier has eight channels that have been bridged in pairs, essentially creating four channels of 100 watts each. With four TDT100 transformers installed internally, the MCA8050 is prepared to drive the 70-volt distributed speaker system in each of the four courtrooms.

CobraNet and Ethernet from both AudiaFLEX units are tied together through separate Ethernet switches. This allows sharing of digital audio signals (CobraNet) and control data (Ethernet) on their own networks. Also connected to, and functioning as part of, the CobraNet network, are four AudiaEXPO-4 Output Expander units. These four AudiaEXPO-4 units are physically located in a central computer/recording office. The maximum distance between any Audia unit and an Ethernet switch is 100 meters. Therefore, this system can span up to 300 meters between the equipment closet and the computer/recording office. Additional Ethernet switches, or even fiber-optics, can further extend distances between units on the network.

Each AudiaEXPO-4 receives four channels of digital audio via CobraNet over a single CAT-5 cable. These four channels of digital audio are then converted to analog audio and appear on four separate output connections. Each AudiaEXPO-4 provides the appropriate channels of audio for one of the four court recording systems. Mixing and processing of these signals (to achieve proper microphone/track assignment and consistent recording levels) has been accomplished back at the AudiaFLEX units.

APPLICATIONS



AudiaEXPI-4 SPECIFICATIONS

Frequency Response (20Hz~20kHz @ -20dBFS):	+0 /-0.4dB
THD+N (20Hz~20kHz @ -20dBFS):	
line level (0dBu):	<0.0065%
mic level (-60dBu):	<0.045%
Equivalent Input Noise (20Hz~20kHz, 66dB gain, 150 ohm):	-125dBu
Dynamic Range:	>107dB
Maximum Gain (input channels):	66dB
Crosstalk (channel-to-channel @ 1kHz):	
line level:	<-90dB
mic level:	<-80dB
Input Impedance (mic/line balanced):	6.6K ohms
Maximum Input (mic/line):	+23dBu
Phantom Power:	+48VDC @ 10mA (Compliant with IEC 1938)

Input Gain Range (variable in 6dB steps):	0-66dB
A/D Converters:	24-bit @ 48KHz sampling
Power Consumption:	<13W
Dimensions:	
height	1.5 inches (38mm)
width	8.5 inches (216mm)
depth	6 inches (152mm)
Weight:	3 lbs. (1.36kg)
Compliance:	ES48-2005 Grounding & EMC practices
	IEC 1398 Phantom Power
	IEEE 803.3af PoE
	EU Directive 2002/95/EC, RoHS directive
	CE marked
Power Supply:	IEEE 802.3af Power over Ethernet (Class 3 device)
	+18-24VDC @ 13W Class-III External Power Supply

AudiaEXPO-4 SPECIFICATIONS

Frequency Response (20Hz~20kHz @ -20dBFS):	+0/-0.4dB
THD+N (20Hz~20kHz @ -20dBFS):	<0.006%
Dynamic Range:	110dB
Crosstalk (channel-to-channel @ 1kHz):	<-90dB
Output Impedance (balanced):	200 Ohms
Maximum Output (balanced):	+23dBu
Output Gain Range (variable in 6dB steps):	-24 – 0dB, -55dB Mic Pad
D/A Converters:	24-bit (48kHz sampling)

Dimensions:	
height	1.5 inches (38mm)
width	8.5 inches (216mm)
depth	6 inches (152mm)
Weight:	3 lbs. (1.36kg)
Compliance:	AES48-2005 Grounding & EMC practices
	IEEE 803.3af PoE
	EU Directive 2002/95/EC, RoHS directive
	CE marked
Power Consumption:	<13W
Power Supply:	IEEE 802.3af Power over Ethernet (Class 3 device)
	+18-24VDC @ 13W Class-III External Power Supply

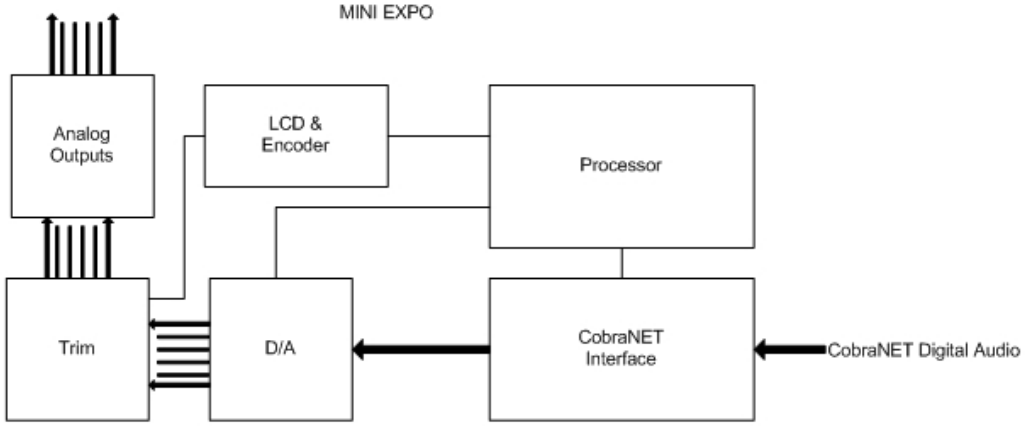
AudiaEXPI/O-2 SPECIFICATIONS

Frequency Response (20Hz~20kHz @ -20dBFS):	+0/-0.4dB
THD+N (20Hz~20kHz @ -20dBFS):	
Line Level	<0.0065%
Mic Level	<0.045%
Equivalent Input Noise:	-125dBu
Dynamic Range:	
Input	>107dB
Output	>110dB
Crosstalk (channel-to-channel @ 1kHz):	
Line Level	<-90dB
Mic Level	<-80dB
Output Impedance (balanced):	200 Ohms
Input Impedance (balanced):	6.6K Ohms
Maximum Output (balanced):	+23dBu
Max Input (mic/line):	+23dBu
Phantom Power:	+48V @ 10mA per input

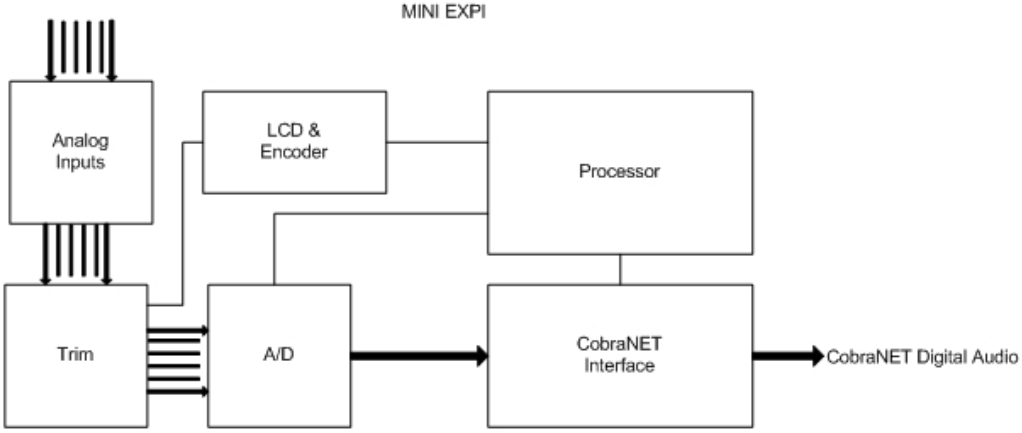
Input Gain Range (variable in 6dB steps):	0 - 66dB
Output Gain Range (variable in 6dB steps):	-24 - 0dB, -55dB Mic Pad
D/A Converters:	24-bit (48kHz sampling)
A/D Converters:	24-bit (48KHz sampling)
Dimensions:	
height	1.5 inches (38mm)
width	8.5 inches (216mm)
depth	6 inches (152mm)
Weight:	3 lbs. (1.36kg)
Compliance:	AES48-2005 Grounding & EMC practices
	IEC 1398 Phantom Power
	IEEE 803.3af PoE
	EU Directive 2002/95/EC, RoHS directive
	CE marked
Power Consumption:	<13W
Power Supply:	IEEE 802.3af Power over Ethernet (Class 3 device)
	+18-24VDC @ 13W Class-III External Power Supply

BLOCK DIAGRAMS

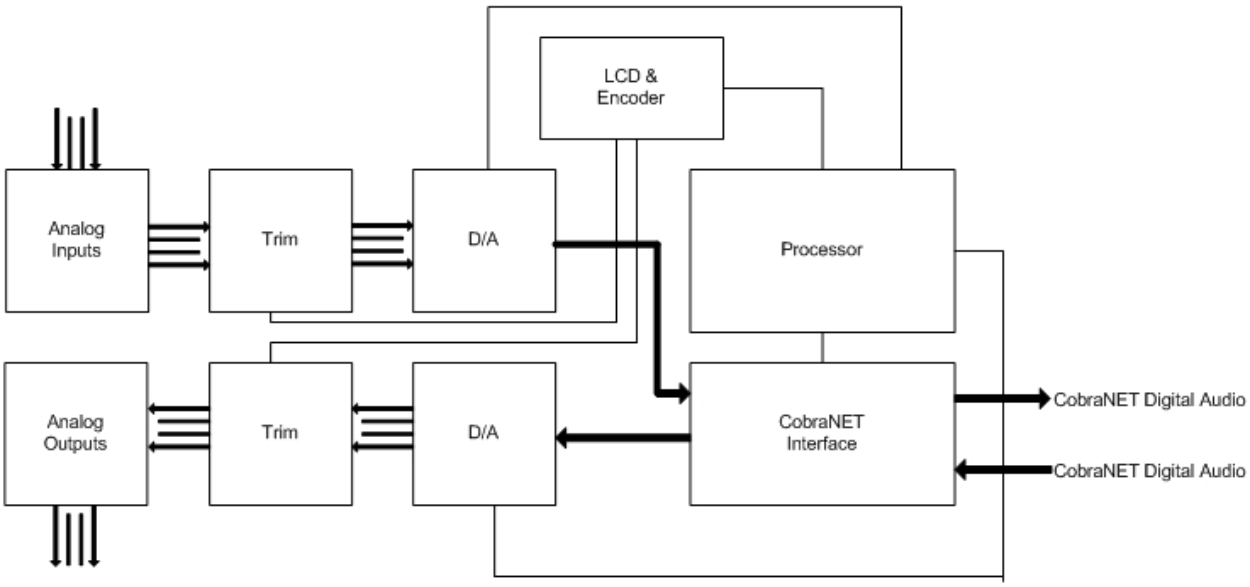
MINI EXPO



MINI EXPI



MINI EXPI/O 2



WARRANTY

BIAMP SYSTEMS IS PLEASED TO EXTEND THE FOLLOWING 5-YEAR LIMITED WARRANTY TO THE ORIGINAL PURCHASER OF THE PROFESSIONAL SOUND EQUIPMENT DESCRIBED IN THIS MANUAL

1. BIAMP Systems warrants to the original purchaser of new products that the product will be free from defects in material and workmanship for a period of 5 YEARS from the date of purchase from an authorized BIAMP Systems dealer, subject to the terms and conditions set forth below.

2. If you notify BIAMP during the warranty period that a BIAMP Systems product fails to comply with the warranty, BIAMP Systems will repair or replace, at BIAMP Systems' option, the nonconforming product. As a condition to receiving the benefits of this warranty, you must provide BIAMP Systems with documentation that establishes that you were the original purchaser of the products. Such evidence may consist of your sales receipt from an authorized BIAMP Systems dealer. Transportation and insurance charges to and from the BIAMP Systems factory for warranty service shall be your responsibility.

3. 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; or installed in any manner that does not comply with BIAMP Systems' recommendations.

4. Electro-mechanical fans, electrolytic capacitors, and normal wear and tear of items such as paint, knobs, handles, and covers are not covered under this warranty.

5. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED. BIAMP SYSTEMS DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

6. The remedies set forth herein shall be the purchaser's sole and exclusive remedies with respect to any defective product.

7. 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.

8. No action for breach of this warranty may be commenced more than one year after the expiration of this warranty.

9. 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.

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Beaverton, Oregon 97008
(503) 641-7287

585.0185.90B

EC Declaration of Conformity

Biamp Systems Corporation, as manufacturer having sole responsibility, hereby declares that the following described product complies with the applicable provisions of the DIRECTIVES below except as noted herein. Any alterations to the product not agreed upon and directed by Biamp Systems Corporation will invalidate this declaration.

Product Models:	EXPI-4, EXPI/O-2, EXPO-4
Product Description:	Input and Output Expanders for networking with audio DSPs.

Applicable EC Directives:	Applicable Harmonized Standards:	
LVD Directive (2006/95/EC)	Safety	EN 60065:2002
EMC Directive (2004/108/EC)	Emissions	EN 55103-1:1996, Environment E2
	Immunity	EN 55103-2:1996

Special Considerations for Product Environment or Compliance:

Use only CE marked Power over Ethernet (PoE) device.

Use only CE and “LPS” marked 24 VDC External Power Adaptor.

Shielded cabling must be used for system connections.

Technical Construction File, Location and Contact:

Biamp Systems, Inc.	phone:	(503) 641.7287
9300 S.W. Gemini Drive	fax:	(503) 626.0281
Beaverton, OR USA 97008	e-mail:	biamp@biamp.com

Authorized Representative: Larry Copley, Compliance Engineer

Authorized Signature: 

Issued: March, 2010

SAFETY INFORMATION

The words WARNING and CAUTION throughout the manual, and on the device, call attention to important safety information. These words have the following meanings.

WARNING: The related information alerts you to conditions that could result in serious injury or damage to property if the instructions are not followed properly.

CAUTION: The related information instructs you on how to prevent damage to the equipment or how to avoid conditions that could result in minor injury if proper steps are not followed.

Product labelling and the operation manual may use the internationally recognized symbols defined below to note safety messages.

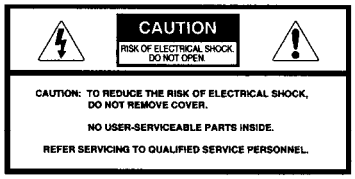
The lightning flash with arrowhead symbol, enclosed within a triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the apparatus's enclosure or at connection terminals that may be of sufficient magnitude to constitute a risk of electrical shock.

The exclamation point, enclosed within a triangle, is intended to alert the user to important installation, operation, and maintenance (servicing) instructions in the literature accompanying the apparatus.

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRICAL SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE.

CAUTION: Installation of this apparatus should be made by a qualified installation person and should conform to all applicable local codes.

Modification and optional equipment information referenced in this manual is for use by qualified installation and service personnel only.



"INFORMACIÓN DE SEGURIDAD"

Las palabras **PELIGRO** (WARNING) y **PRECAUCIÓN** (CAUTION) a lo largo del manual y en el dispositivo (sistema), llaman la atención acerca de una importante información de seguridad. Estas palabras tienen los siguientes significados :

PELIGRO (WARNING) : la información relata las condiciones en que podría ser dañada seriamente la propiedad si no se siguen adecuadamente las instrucciones.

PRECAUCIÓN (CAUTION) : la información que se relata te instruye en cómo prevenir daños al equipo o como evitar condiciones que podrían resultar en perjuicio menor si los pasos adecuados no son seguidos correctamente.

El etiquetado del producto y el manual de operación pueden hacer uso de los símbolos reconocidos internacionalmente y cuyos mensajes estan definidos a continuación para modificar mensajes de seguridad:

El símbolo del rayo encerrado en un triángulo pretende alertar al usuario de la presencia de un peligroso voltaje no aislado ,dentro de la caja del aparato o a un terminal de conexión y que podría ser de suficiente magnitud como para constituir un grave riesgo de descarga eléctrica.

El punto de exclamación dentro de un triángulo pretende alertar al usuario de la importancia de las instrucciones de instalación, operación y mantenimiento (servicio) que acompañan al aparato.

PELIGRO (WARNING) : para reducir el riesgo de fuego o una descarga electrica, no exponer este aparato a la lluvia o la humedad.

PRECAUCIÓN (CAUTION) : la instalación de este aparato debería hacerse por una persona cualificada en la instalación, y debería conformar todos los códigos locales aplicables.

La modificación y la información opcional del equipo referenciada en este manual es para ser utilizada únicamente por personal cualificado en instalación y servicio.

INFORMATION CONCERNANT VOTRE SECURITE

Les mots **WARNING** et **CAUTION** dans le manuel d'utilisation et sur les appareils attirent votre attention sur les plus importantes informations concernant votre sécurité. Ces mots ont la signification suivante:

WARNING: Ce mot vous indique les circonstances dans lesquelles vous pourriez être blessé ou endommager votre équipement si les instructions ne sont pas suivies correctement.

CAUTION: Ce mot vous indique comment éviter d'endommager votre matériel et comment éviter de vous blesser si vous ne suivez pas les instructions.

Vous trouverez peut-être les symboles suivants sur votre appareil ou dans le manuel d'utilisation.

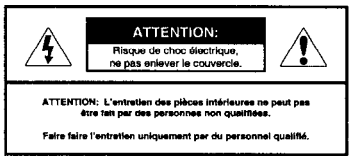
L'éclair se terminant en flèche dans un triangle permet de prévenir l'utilisateur d'un voltage dangereux non isolé dans l'appareil ou d'une connexion d'une amplitude suffisante pour constituer un risque de choc électrique.

Le point d'exclamation dans un triangle permet de prévenir l'utilisateur des points importants concernant l'installation, le fonctionnement et l'entretien de l'appareil figurant dans le manuel d'utulisation.

WARNING: POUR REDUIRE LES RISQUES DE FEU OU DE CHOC ELECTRIQUE, NE PAS METTRE L'APPAREIL SOUS LA PLUIE OU DANS L'HUMIDITE.

CAUTION: L'installation de cet appareil doit être faite par un installateur qualifié et doit être en conformité avec toutes les lois locales en application.

Les informations concernant une modification ou un équipement en option dans le manuel doivent être effectué par du personnel qualifié.



INFORMAZIONI PER LA SICUREZZA

Le parole **AVVERTENZA** (WARNING) e **PRUDENZA** (CAUTION) poste sul manuale d'uso e sul apparato richiamano la vostra attenzione su delle importanti informazioni per la vostra sicurezza. Queste parole hanno il seguente significato.

AVVERTENZA: (WARNING) La suddetta indicazione vi avvisa sul rischio di incorrere in danni a cose o a persone ,se le procedure d'uso e installazione non saranno seguite propriamente.

PRUDENZA: (CAUTION) La suddetta indicazione vi instruisce su come prevenire e ridurre al minimo, il rischio di danni agli apparati e alle persone se le instruzioni saranno seguite propriamente.

Le apparecchiature e i manuali di instruzioni riporteranno la simbologia standard raffigurata qui sotto ,accompagnate dalle relative informazioni per la sicurezza.

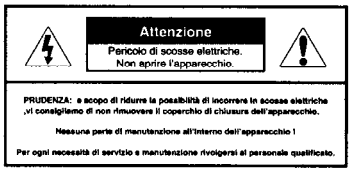
La simbologia con il fulmine all'interno di un triangolo, intende avvisare l'utente della presenza di alto volaggio all'interno del apparecchio in questione, e che il suddetto apparecchio si alimenta attraverso una tensione di rete ad alto voltaggio e che dunque si potrebbe incorrere sul rischio di una possibile scossa elettrica.

La simbologia con il punto esclamativo all'interno di un triangolo, intende avvisare l'utente di una serie di instruzioni contenute nel manuale d'uso riguardanti : operato,manutenzione e assistenza. Il suddetto manuale sarà a corredo dell'apparecchio.

AVVERTENZA: (WARNING) PER RIDURRE IL RISCHIO DI POSSIBILI INCENDI O SCOSSE ELECTTRICHE ,SCONSIGLIAMO DI ESPORRE L'APPARECCHIO ALLA PIOGGIA O ALL'UMIDITA'.

PRUDENZA: (CAUTION) l'Installazione di questo apparato dovrà essere effettuata solo da personale qualificato e il tipo di installazione dovrà essere in regola con le norme vigenti locali..

Modifiche e ulteriori informazioni specificate in questo manuale sono solamente riservate al personale qualificato all'installazione.



Sicherheitshinweise

Die Bergriffe **WARNUNG** (engl. WARNING) und **ACHTUNG** (engl. CAUTION) in der Bedienungsanleitung und auf den Geräten machen auf wichtige Sicherheitsinformationen aufmerksam. Diese Begriffe haben die folgende Bedeutung:

WARNUNG: (WARNING) Der folgende Text warnt Sie vor ernsthaften Verletzungen oder Beschädigungen, die aus einer fehlerhaften Bedienung bzw. Handhabung des Gerätes resultieren können.

ACHTUNG: (CAUTION) Der folgende Text informiert Sie über Bedienungshinweise zum Schutz Ihres Gerätes oder weist auf mögliche Schäden hin, wenn die Bedienungshinweise nicht beachtet werden.

Die Beschriftung der Geräte und die Bedienungsanleitungen weisen unter Umständen international bekannte Symbole auf, die die folgende Bedeutung haben:

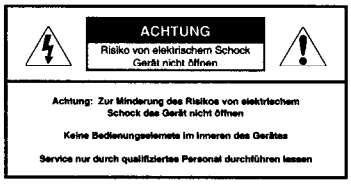
Das Blitzsymbol im Dreieck warnt vor anliegender, nicht isolierter „gefährlicher Spannung" im Inneren oder an den Anschlüssen des Gerätes. Die Berührung der unter Spannung stehenden Teile kann zu einem elektrischen Schock führen.

Das Rufzeichen im Dreieck macht auf wichtige Installations-, Bedienungs- und Servicehinweise in der zugehörigen Bedienungsanleitung aufmerksam.

WARNUNG: (WARNING) Zur Minderung des Risikos von Feuer und elektrischem Schock schützen Sie das Gerät vor Regen und Feuchtigkeit.

ACHTUNG: (CAUTION) Die Installation des Gerätes sollte nur durch qualifiziertes Personal durchgeführt werden und muß den jeweiligen Bestimmungen entsprechen.

Die Modifikationen und die Informationen zu den optionalen Erweiterungen in der Bedienungsanleitung sind nur für qualifiziertes Personal bestimmt.



Sikkerhedsinformation

Ordene ***ADVARSEL*** (WARNING) og ***FORSIGTIG*** (CAUTION), brugt i henholdsvis brugervejledning og på selve produktet, indikerer, at vigtig information omkring sikkerhed følger. Ordene betyder følgende:

ADVARSEL: (WARNING) Den efterfølgende information advarer Dem om forhold, der kan føre til alvorlige ulykker og ejendomsskader, hvis ikke vejledningen følges.

FORSIGTIG: (CAUTION) Den efterfølgende information vejleder Dem i, hvordan De undgår skade på produktet, samt undgår forhold der kan føre til mindre ulykker og ejendomsskader, hvis ikke vejledningen følges.

Produktetiketter og brugervejledning kan indeholde de internationalt anerkendte symboler der er vist nedenfor:

Trekanten med et lyn i midten har til hensigt at advare brugeren om, at produktet indeholder "farlig spænding", og at det derfor er forbundet med fare for elektrisk stød at åbne produktet.

Trekanten med udråbstegn har til hensigt at advare brugeren om, at vigtig information omkring installation, brug, service og vedligeholdelse af produktet er indeholdt i den medfølgende brugervejledning.

ADVARSEL: (WARNING) Med henblik på at reducere risikoen for brand eller elektrisk stød, må produktet ikke udsættes for regn eller fugt.

FORSIGTIG: (CAUTION) Installation af dette produkt skal foretages af en autoriseret installatør og skal være i overensstemmelse med alle anvendelige lokale retningslinier.

Modifikationer samt alternativt udstyr beskrevet i denne brugervejledning er kun henvendt til kvalificerede installatører og servicepersonale.

VEILIGHEIDSINFORMATIE

De woorden **WAARSCHUWING** (WARNING) en **VOORZICHTIG** (CAUTION) welke in de handleiding en op het apparaat voorkomen, waarschuwen U voor belangrijke veiligheidsinformatie. Zij hebben de volgende betekenis:

WAARSCHUWING: (WARNING) De betreffende informatie waarschuwt U voor omstandigheden die kunnen leiden tot defecten of beschadigingen aan apparaten als de instructies niet volledig worden opgevolgd.

VOORZICHTIG: (CAUTION) De betreffende informatie instrueert U hoe U defecten aan apparatuur kunt voorkomen of hoe U omstandigheden kunt vermijden die kunnen resulteren in schade als de juiste stappen niet worden opgevolgd.

Produkt informatie en handleiding hanteren onderstaande internationaal erkende symbolen om veiligheidsinstructies aan te geven.

De bliksemschicht in een driehoek wordt gebruikt om de gebruiker te attenderen op ongeïsoleerde "gevaarlijke spanning" in het apparaat of bij de aansluitklemmen, die het risico van een electrische schok kunnen geven.

Het uitroepteken in een driehoek wordt gebruikt om de gebruiker te attenderen op belangrijke installatie, gebruiks- en onderhoudsinstructies in de beschrijving die bij het apparaat hoort.

WAARSCHUWING: (WARNING) OM HET RISICO VAN BRAND OF EEN ELECTRISCHE SCHOK TE VERMIJDEN DIENT U HET APPARAAT NIET AAN VOCHT BLOOT TE STELLEN.

VOORZICHTIG: (CAUTION) Installatie van dit apparaat dient te geschieden door gekwalificeerd personeel en dient te geschieden conform de plaatselijke voorschriften.

Modificaties en aanvullende informatie waar in de handleiding naar wordt verwezen, dient alleen voor gebruik door gekwalificeerd personeel.

TURVALLISUUSTIEDOTE

Sanat **VAROITUS** (WARNING) ja **HUOMIO** (CAUTION), jotka esiintyvät manuaalissa ja itse laitteessa, ilmoittavat tärkeästä turvallisuusinformaatiosta. Näillä sanoilla on seuraava merkitys:

VAROITUS: (WARNING) Yhteydessä oleva informaatio varoittaa olosuhteista, jotka saattavat johtaa vakaviin vammoihin tai laitteen vaurioitumiseen, mikäli ohjeita ei täysin noudateta.

HUOMIO: (CAUTION) Yhteydessä oleva informaatio neuvoo, miten laitteen vaurioituminen voidaan ehkäistä tai miten voidaan välttää olosuhteet, jotka voivat johtaa lievin vammoihin, mikäli ohjeita ei noudateta.

Tuotteessa tai käyttöohjeessa voidaan käyttää seuraavia alla määriteltyjä kansainvälisiä symboleja, jotka viittaavat turvallisuusinformaatioon.

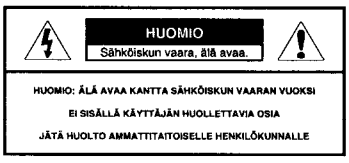
Kolmion sisällä olevan nuolipäinen salama varoittaa käyttäjää laitteen sisällä tai liitännöissä olevasta eristämättömästä vaarallisesta jännitteestä, joka saattaa olla tarpeeksi suuri aiheuttaakseen sähköiskun vaaran.

Kolmion sisällä oleva huutomerkin tarkoituksena on ilmoittaa käyttäjälle tärkeistä asennusta, käyttöä tai huoltoa koskevista ohjeista laitteen mukana seuraavassa kirjallisuudessa.

VAROITUS: (WARNING) ÄLÄ ALTISTA LAITETTA SATEELLE TAI KOSTEUDELLE TULIPALON JA SÄHKÖISKUN VAARAN VUOKSI.

HUOMIO: (CAUTION) Laitteen asentaminen tulisi jättää ammattitaitoisen henkilön suoritettavaksi ja asennuksessa tulee noudattaa kaikkia paikallisia säännöksiä.

Tässä manuaalissa oleva informaatio, joka koskee muutostöitä ja lisälaitteita, on tarkoitettu vain ammattitaitoisten asennus- ja huoltohenkilöiden käyttöön.



SIKKERHETS INFORMASJON

Når ordene **ADVARSEL** (WARNING) og **VIKTIG** (CAUTION) blir brukt i manualen og på produktet, gjelder det informasjon som har med brukerens sikkerhet å gjøre. Ordene har følgende mening:

ADVARSEL: (WARNING) Tilhørende informasjon viser til forhold som kan resultere i alvorlige skader eller ødeleggelser hvis anvisningene ikke følges nøye.

VIKTIG: (CAUTION) Tilhørende informasjon forteller deg hvordan du skal unngå feil på utstyret, eller unngå situasjoner som kan resultere i mindre skader.

Produkt merkingen og bruksanvisningen bruker internasjonale symboler for å merke punkter som er viktige for brukerens sikkerhet.

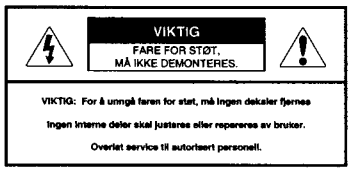
Lynet i en triangel advarer brukeren om uisolert "farlig spenning" inne i apparatet, eller tilkoblings terminaler som kan gi støt.

Etter utropstegnet i en triangel følger informasjon som er viktig når det gjelder installasjon, bruk og vedlikehold (service) av apparatet.

ADVARSEL: (WARNING) FOR Å REDUSERE FAREN FOR BRANN ELLER STØT MÅ APPARATET IKKE UTSETTES FOR VANN ELLER FUKTIGHET.

VIKTIG: (CAUTION) Installasjon av apparatet skal foretas av autorisert installatør etter gjeldende forskrifter.

Modifikasjoner og tilleggs informasjon som følger er kun for kvalifiserte installatører eller service personell.



SÄKERHETS INFORMATION

Orden **VARNING** (WARNING) och **OBSERVERA** (CAUTION) vilka används i denna manual och på apparaten, är menade att uppmärksamma viktig säkerhets information. Dessa ord har följande betydelse.

VARNING: (WARNING) Information som uppmärksammar på omständigheter som kan resultera i allvarlig personskada eller skada på egendom om instruktionerna ej följs.

OBSERVERA: (CAUTION) Information som uppmärksammar på instruktioner om hur skada på utrustning eller hur situationer där lättare personskador kan uppstå undvikes.

Följande internationellt använda ord och symboler används i handboken och på märkningar på produkten för att uppmärksamma användare på viktiga säkerhets instruktioner.

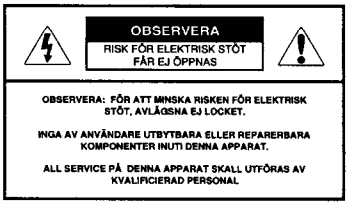
En blixt med pil, innesluten i en triangel, menad att uppmärksamma användare på närvaron av oisolerade "farliga spänningar" i apparaten eller på anslutnings kontakter vilka har tillräcklig styrka för att medföra risk för elektrisk söt.

Ett utropstecken, innesluten i en triangel, menad att uppmärksamma användare på viktiga installations, handhavande eller underhålls-instruktioner i medföljande dokumentation.

VARNING: (WARNING) FÖR ATT MINSKA RISKEN FÖR BRAND ELLER ELEKTRISK STÖT, UTSÄTT EJ APPARATEN FÖR FUKT ELLER VÄTSKA.

OBSERVERA: (CAUTION) Installation av denna apparat skall utföras av kvalificerad installatör samt enligt alla gällande lokala bestämmelser.

Eventuella modifierings instruktioner och annan information av teknisk art i denna manual är endast avsedd att användas av kvalificierad installations och service personal.



ΠΛΗΡΟΦΟΡΙΕΣ ΑΣΦΑΛΕΙΑΣ

Οι λέξεις **ΚΙΝΔΥΝΟΣ** (WARNING) και **ΠΡΟΣΟΧΗ** (CAUTION) που αναφέρονται μέσα στο εγχειρίδιο και στη συσκευή, επικεντρώνουν την προσοχή σε σημαντικές πληροφορίες ασφαλείας. Οι λέξεις αυτές έχουν την παρακάτω σημασία.

ΚΙΝΔΥΝΟΣ : (WARNING) Η αναγραφόμενη πληροφορία επιστά την προσοχή σας σε καταστάσεις που θα μπορούσαν να έχουν σαν αποτέλεσμα σοβαρό τραυματισμό ή καταστροφή της ιδιοκτησίας αν οι οδηγίες δεν ακολουθηθούν κατάλληλα.

ΠΡΟΣΟΧΗ : (CAUTION) Η αναγραφόμενη πληροφορία σας καθοδηγεί πώς να προλάβετε καταστροφή του εξοπλισμού ή πώς να αποφύγετε καταστάσεις που θα μπορούσαν να έχουν ως αποτέλεσμα μικροτραυματισμούς αν δεν ακολουθηθούν τα σωστά βήματα.

Στις επιγραφές των προτόντων και στο εγχειρίδιο λειτουργίας, χρησιμοποιούνται τα σιεθνώς αναγνωρισμένα σύμβολα, των οποίων ο ορισμός δίνεται παρακάτω έτσι ώστε να υπογραμμιστούν τα μηνύματα ασφαλείας.

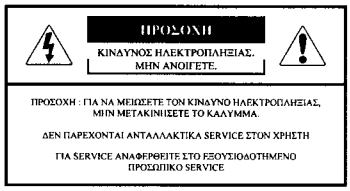
Η φωτενή αναλαμπή με σύμβολο το βέλος, μέσα στο τρίγωνο, έχει σκοπό να επιστήσει την προσοχή του χρήστη, στην ύπαρξη μη- μονωμένης « επικίνδυνης ισχύος ρεύματος » στο εσωτερικό της συσκευής ή στις άκρες σύνδεσης οι οποίες μπορεί να έχουν αρκετό μέγεθος ώστε να περιέχουν κίνδυνο ηλεκτροπληξίας.

Το επεξηγηματικό σημείο, μέσα στο τρίγωνο, έχει σκοπό να επιστήσει την προσοχή του χρήστη στις σημαντικές οδηγίες εγκατάστασης, λειτουργιας και συντήρησης (service) που περιέχονται στα φυλλάδια που συνοδεύουν την συακευή.

ΚΙΝΔΥΝΟΣ : (WARNING) Για να αποφύγετε τον κίνδυνο φωτιάς ή ηλεκτροπληξίας, μην εκθέτετε αυτή τη αυσκευή σε βροχή ή σε υγρασία.

ΠΡΟΣΟΧΗ : (CAUTION) Η εγκατάσταση αυτής της συσκευής θα πρέπει να γίνει από εξειδικευμένο άτομο και θα πρέπει να προσαρμόζεται σε όλους τους εφαρμόσιμους τοπικούς κώδικες.

Οι τροποποιήσεις και οι προϋποθετικές πληροφορίες για τον εξοπλισμό, που αναφέρονται σε αυτό το εγχειρίδιο, προορίζονται για χρήση μόνο από εξειδικευμένα στην εγκατάσταση και στο service, άτομα.



INFORMAÇÃO SOBRE SEGURANÇA

As palavras ADVERTÊNCIA (WARNING) e PRECAUÇÃO (CAUTION) neste manual, e no dispositivo, alertam para importantes informações sobre segurança. Estas palavras significam o seguinte:

ADVERTÊNCIA : (WARNING) Informação relacionada que alerta sobre condições que poderão resultar em lesões sérias ou prejuízo, se as instruções não forem seguidas adequadamente.

PRECAUÇÃO : (CAUTION) Informação relacionada que instrúi como prevenir danos no equipamento ou como evitar condições que poderão resultar em lesões leves, se os passos não forem seguidos adequadamente.

As etiquetas do produto e do manual de operações podem usar os símbolos internacionalmente reconhecidos definidos abaixo para advertir mensagens de segurança.

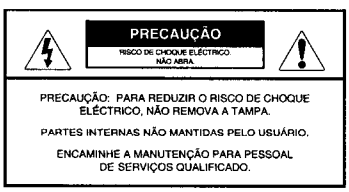
símbolo do relâmpago com uma seta, dentro de um triângulo, tem o fim de alertar o usuário a presença de "voltagem perigosa" sem isolação dentro da caixa isolamento do aparelho ou nos terminais de ligação que podem ter a magnitude suficiente que constitui um risco de choque eléctrico.

ponto de exclamação, dentro de um triângulo, tem o fim de alertar o usuário sobre instruções importantes de instalação, operação e manutenção (serviços) na literatura que acompanha o aparelho.

ADVERTÊNCIA : (WARNING) PARA REDUZIR O RISCO DE INCÊNDIO OU CHOQUE ELÉCTRICO, NÃO EXPONHA ESTE APARELHO A CHUVA OU HUMIDADE.

PRECAUÇÃO : (CAUTION) A instalação deste aparelho deve ser feita por um profissional qualificado e deve obedecer a todos os códigos locais aplicáveis.

Modificação e informação sobre equipamento adicional citados neste manual são para o uso exclusivo do pessoal qualificado de instalação e manutenção.



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

有害物质表

Biamp 系统
EXPI-4、EXPI/O-2 和 EXPO-4
音频输入和输出设备

部件名称	有毒有害物质或元素					
	Pb（铅）	Hg（汞）	Cd（镉）	Cr+6（六价铬）	PBB	PBDE
EXPI-4、EXPI/O-2 或 EXPO-4 设备	X	O	X	O	O	O
电源变压器	X	O	X	O	O	O
可插拔 Euroblock 连接器	O	O	O	O	O	O
手册和其他书面文档	O	O	O	O	O	O
包装箱和所有包装材料	O	O	O	O	O	O

0：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铅。

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 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 95-265V AC，50/60Hz
- 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

EU RoHS COMPLIANT

This Biamp product -- including all attendant cables and accessories supplied by Biamp -- meets all requirements of EU Directives 2002/95/EC of January 27, 2003, and 2005/618/EC of August 18, 2005, the EU RoHS Directives.An EU RoHS Materials Content Declaration document may be obtained at http://www.biamp.com