

autoTWO
Automatic Mixer
Operation Manual

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INTRODUCTION

The **autoTWO** Automatic Mixer is affordable, extremely versatile, and easy to use. Features include NOM attenuation, adaptive threshold sensing, speech-frequency filtering, manual priority override, selectable channel-off attenuation, and selectable last mic hold. The autoTWO is covered by a five-year warranty.

autoTWO features include:

- ◆ eight balanced mic/line inputs on plug-in barrier connectors
- ◆ trim, pad, level, & combined active/peak indicator per channel
- ◆ channel 1 manual 'override' via external contact-closure
- ◆ channel 8 'mix-minus' assign & 'ducking' via channels 1~7
- ◆ balanced main & aux outputs on plug-in barrier connectors
- ◆ selectable last mic on, hpf, automix, & 48V phantom power
- ◆ selectable automix channel-off attenuation (-12dB or -40dB)
- ◆ pre/post automix assignment to main, aux, & direct outputs
- ◆ options selectable via external switches (no internal jumpers)
- ◆ logic outputs from channels for switching of external circuits
- ◆ Adaptive Threshold Sensing minimizes false gate triggering
- ◆ Speech-Frequency Filter minimizes false gating due to noise
- ◆ 6dB of hysteresis reduces gate 'flutter' when near threshold
- ◆ 'stacking' of two units to expand system input capability
- ◆ incorporates **AES** recommended grounding practices
- ◆ **CE** marked and **UL / C-UL** listed power source
- ◆ covered by Biamp Systems' five-year warranty

FRONT PANEL



Active Indicator (Channels 1~8): These dual-color LEDs provide indication of two channel functions: channel active & peak level. When a channel is assigned for automixing (gated) operation, the Active indicator will light green whenever the channel is active (on). **NOTE:** *The Active indicator does not light green on a channel assigned for manual (ungated) operation. See Channel DIP Switches on next page.* The Active indicator will also light red whenever channel signal levels reach +10dB (8dB below clipping). Use this feature to aid in adjusting the Trim controls (see below).

Trim (Channels 1~8): These controls adjust the channel gain (0~60dB) to compensate for different input signal levels. For best performance, adjust these controls so the channel Active indicators flash red (+10dB) on occasional peaks. **NOTE:** *Accurate Trim control settings are essential prior to Threshold adjustment (see Threshold below). Once Threshold has been set, individual channel sensitivities may be fine-tuned using the Trim controls.* If input signals exceed normal operating range of the Trim controls, assign the Pad switch (see DIP switches on next page).

Level (Channels 1~8): These controls adjust the amount of signal sent from the individual input channels to the mixer output section. Optimum Level setting is near the 12 o'clock position (unity gain).

Threshold: This control adjusts the minimum signal level (threshold) at which channels will become active (gate on). The Threshold circuit also has 6dB of hysteresis, which allows a channel to stay open until the signal level drops below the threshold by 6dB. This hysteresis reduces the tendency for a channel to 'flutter' on & off when it detects a signal that is right at the threshold level. Because of the hysteresis, different threshold settings will be arrived at depending on how you adjust this control. If Threshold is set fully clockwise, then turned counter-clockwise until all channels are easily activated by normal signal levels, the threshold will be as high above ambient noise as possible. If Threshold is set counter-clockwise, then turned clockwise until no channels are activated by ambient noise, the threshold will allow for greatest channel sensitivity. The threshold is further controlled by Adaptive Threshold Sensing (ATS). ATS monitors signal from active channels and automatically adjusts the threshold to prevent false activation of other channels. **NOTE:** *Accurate Trim control settings are essential prior to Threshold adjustment. Once Threshold has been set, individual channel sensitivities may be fine-tuned using the Trim controls.*

Release: This control adjusts the length of time that any channel remains active (on) after signal level has dropped below threshold. Release Time is adjustable from 150 milliseconds to 4 seconds. Since channels activate very quickly (4 milliseconds Attack Time), precise adjustment of Release Time may not be critical. However, when using Logic Outputs to control external switching circuits (such as cameras), moderate Release Time settings may provide more appropriate timing (see Logic Outputs on next page).

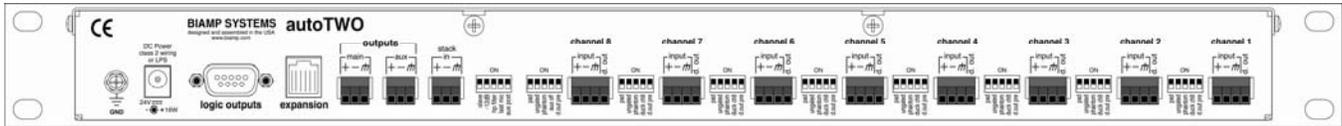
Master: This control adjusts the level of overall signal sent to the Main Output. The Main Output level is also affected by automatic NOM attenuation, which reduces the output level by 3dB for each doubling of active (gated) channels. Optimum Master settings are near the 12 o'clock position (unity gain) or below.

Aux: This control adjusts the level of overall signal sent to the Aux Output. The Aux Output may be assigned either ungated (pre) or gated (post) signals from the channels (see Master DIP Switches on next page). **NOTE:** *Unlike the Main Output, The Aux Output does not provide automatic NOM attenuation.*

-20 Indicator: This dual-color LED provides indication of both signal present & peak level at the Main Output. This indicator will light green when (internal) signal levels reach -20dB (signal present). This same indicator will light red when (internal) signal levels reach +10dB (8dB below clipping). Use this feature to aid in adjusting the Master control. For best performance, adjust the Master control so the -20 indicator flashes red (+10dB) only on occasional peaks in signal level.

On Indicator: When the Power Cord is plugged in, and power is applied to the autoTWO, the red On indicator remains lit.

REAR PANEL



DC Power Cord: The included power supply module provides 24 Volt DC power to the mixer. It is connected to the DC Power Jack on the rear side of the mixer. To ensure compatibility, only use a Biamp Systems supplied power supply.

Logic Outputs: This 9-pin Sub-D (male) connector provides logic outputs from the eight channels, plus a common ground. When a channel becomes active, the associated logic output turns on. Logic Outputs are used to control external circuits for switching speakers, cameras, or indicators (see Logic Outputs on pg. 4).

Expansion: This 6-pin Modular jack is for connection of a second autoTWO mixer to add system inputs. When using two autoTWO mixers in a system, it is necessary for the mixers to share information regarding active channels. This information allows the mixers to properly perform NOM Attenuation & Adaptive Threshold Sensing. This connection requires a single Modular cable (provided). The information shared is processed primarily by the 'master' autoTWO. To prevent system errors, the second autoTWO mixer should be assigned as 'slave' (see Master DIP Switches below). Channel 1 override can be achieved by shorting pins 3 & 6 (see Logic Outputs on pg. 4).

Main Output: These plug-in barrier strip terminals provide the balanced line-level Main Output from the mixer. For balanced connection, wire high (+), low (-), and ground (▼). For unbalanced connection, wire high (+) and ground (▼), leaving (-) unconnected. Signal level will be reduced by 6dB when output is unbalanced. Main Output level is affected by the front panel Master control, as well as by automatic NOM Attenuation, which reduces the output level by 3dB for each doubling of active (gated) channels.

Aux Output: These plug-in barrier strip terminals provide the balanced line-level Aux Output from the mixer. For balanced connection, wire high (+), low (-), and ground (▼). For unbalanced connection, wire high (+) and ground (▼), leaving (-) unconnected. Signal level will be reduced by 6dB when output is unbalanced. Aux Output level is affected by the front panel Aux control, but not by automatic NOM Attenuation.

Stack In: These plug-in barrier strip terminals provide a balanced line-level Stack In to the mixer. Signal entering here is combined with signals from the input channels, and is then sent to the Main Output section. When using multiple autoTWO mixers within a system, connect Main Output of one mixer to Stack In of the next mixer, and so forth. All mixers except the final autoTWO should be assigned as 'slaves' (see Master DIP Switches below). For balanced connection, wire high (+), low (-), and ground (▼). For unbalanced connection, wire high (+) and ground to both (▼) & (-).

Inputs & Direct Outputs (Channels 1-8): These plug-in barrier strip terminals provide the balanced mic/line Inputs to the mixer. For balanced connection, wire high (+), low (-), and ground (▼). For unbalanced connection, wire high (+) and ground to both (▼) & (-). Phantom power (+48VDC) is available (see DIP Switches below). Unbalanced 'pre-fader' Direct Outputs are available on Channels 1-8, using the (d. out) & (▼) terminals.

Master DIP Switches: These switches assign functions to the mixer as a whole (when pushed up). Slave assigns the mixer as an expander to a 'master' mixer. -12dB selects -12dB channel-off attenuation (instead of -40dB). HP Filter assigns a high-pass filter of 6dB/octave @ 170Hz. Last Mic causes the most recently active channel to remain on. Aux Post assigns post-gate/level channel signals to the Aux Output (instead of pre-gate/level signals).

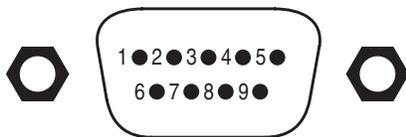
DIP Switches (Channels 1-8): These switches assign functions to the individual channels (when pushed up). Pad attenuates input signal -18dB (line input). Ungated turns channel on (defeats gate). Phantom turns on +48V phantom power (for condenser mics). Duck Ch 8 (Channels 1-7 only) assigns channel signal to activate -12dB attenuation on Channel 8 (ducking). Aux Off (Channel 8 only) removes Channel 8 signal from Aux Output (mix-minus). D. Out Pre assigns pre-gate signal to channel direct output (d. out), instead of post-gate signal.

LOGIC OUTPUTS

The autoTWO provides eight logic outputs on a rear panel 9-pin Subminiature D (male) connector. Logic Outputs can be used to control external switching circuits for speakers, cameras, indicators, etc. The autoTWO Logic Outputs are most often used, in conjunction with external relays, to turn off specific speakers when nearby microphones are active (reducing feedback problems). For example, if a speaker is located directly above microphone #1, the Logic Output for Channel 1 of the autoTWO can be used to turn off that speaker relay when microphone #1 is active (see diagram on next page). The Logic Outputs can also be combined (wired in parallel) to control a single circuit. For example, a speaker relay could be turned off when either microphone #1 or microphone #2 is active. In addition to speaker relays, the autoTWO Logic Outputs may be used to control external indicator lights (see diagram on next page). Another common application for Logic Outputs is to control video cameras. Different cameras could be activated depending upon which microphone (or group of microphones) is currently active. Cameras can be selected using a video switcher and/or 'pan/tilt/zoom' camera presets. The Logic Outputs may also be used in conjunction with the Expansion jack (pin 6 & pin 3) to perform 'automatic priority', which allows all other channels to be muted whenever the Channel 1 microphone is active (see diagram on next page). The Logic Output (pin 1) & ground (pin 9) terminals for the Channel 1 'priority' microphone are wired to pin 6 & pin 3 respectively of the Expansion jack. A switch or contact-closure may instead be used, for manual priority override.

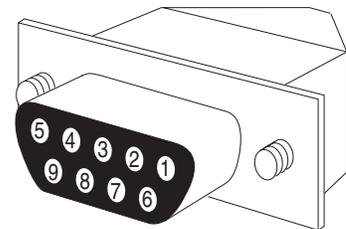
The autoTWO Logic Outputs are 'open collector' outputs. Each Logic Output is an NPN transistor with the collector being the output and the emitter being ground (see diagram on next page). When a Logic Output is turned on, the transistor provides a path for DC current to flow. The Logic Outputs do not provide any voltage or current. They act only as switches (with a common ground return). To activate external relays, an external power supply must be used (see diagram on next page). The Logic Output transistors are rated up to a maximum of 24 VDC and 50 mA per output (24 volt relay coils maximum). However, +12 Volts DC is sufficient power for most applications. When using the Logic Outputs to control relays, protection diodes must be used to suppress high voltage transients that are generated when the relays turn off (see diagram on next page). Any of the 1N4004 family of diodes (1N4001, 1N4002, 1N4003, 1N4004, 1N4005, 1N4006, 1N4007, or equivalent) will provide proper protection. When a Logic Output goes on, the associated relay may be wired to perform on, off, or 'A/B' switching functions. To use logic 'on' to turn on (or activate) a device, wire across the 'normally open' relay contacts, in series with the device (or control voltage source). To use logic 'on' to select between 'A' or 'B' signals (inputs or outputs), wire one signal to the 'normally closed' relay terminal and the other signal to the 'normally open' relay terminal, with the common relay terminal providing the feed (input or output).

The 9-pin Sub-D connector used for the autoTWO Logic Outputs is the same type of connector used for RS-232 communications ports on IBM compatible computers. A cable may be created by simply wiring to the proper pins of a female 9-pin Sub-D cable-end connector.



logic outputs

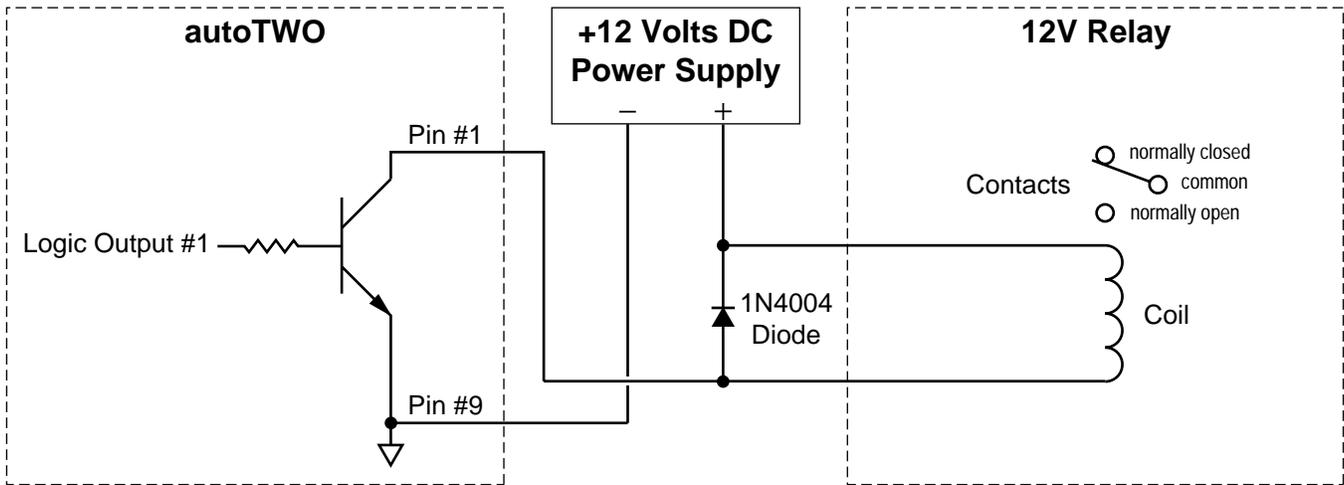
logic out	pin number
channel 1	pin #1
channel 2	pin #2
channel 3	pin #3
channel 4	pin #4
channel 5	pin #5
channel 6	pin #6
channel 7	pin #7
channel 8	pin #8
ground	pin #9



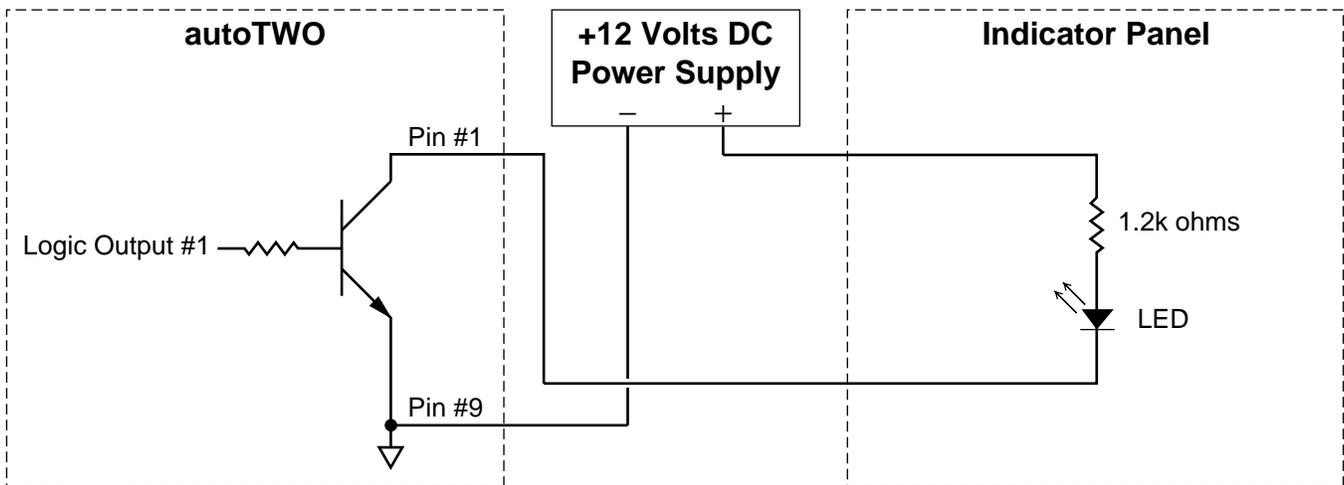
9-pin cable-end

LOGIC OUTPUTS

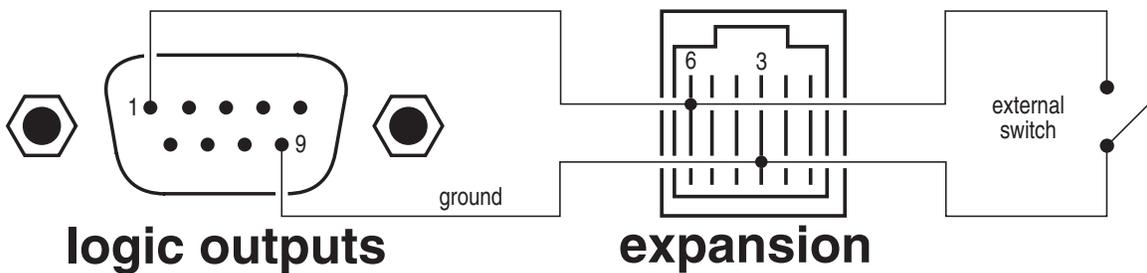
Logic/Relay circuit



Logic Outputs controlling indicators



Channel 1 'automatic' (logic output) or 'manual' (external switch) override of Channels 2-8

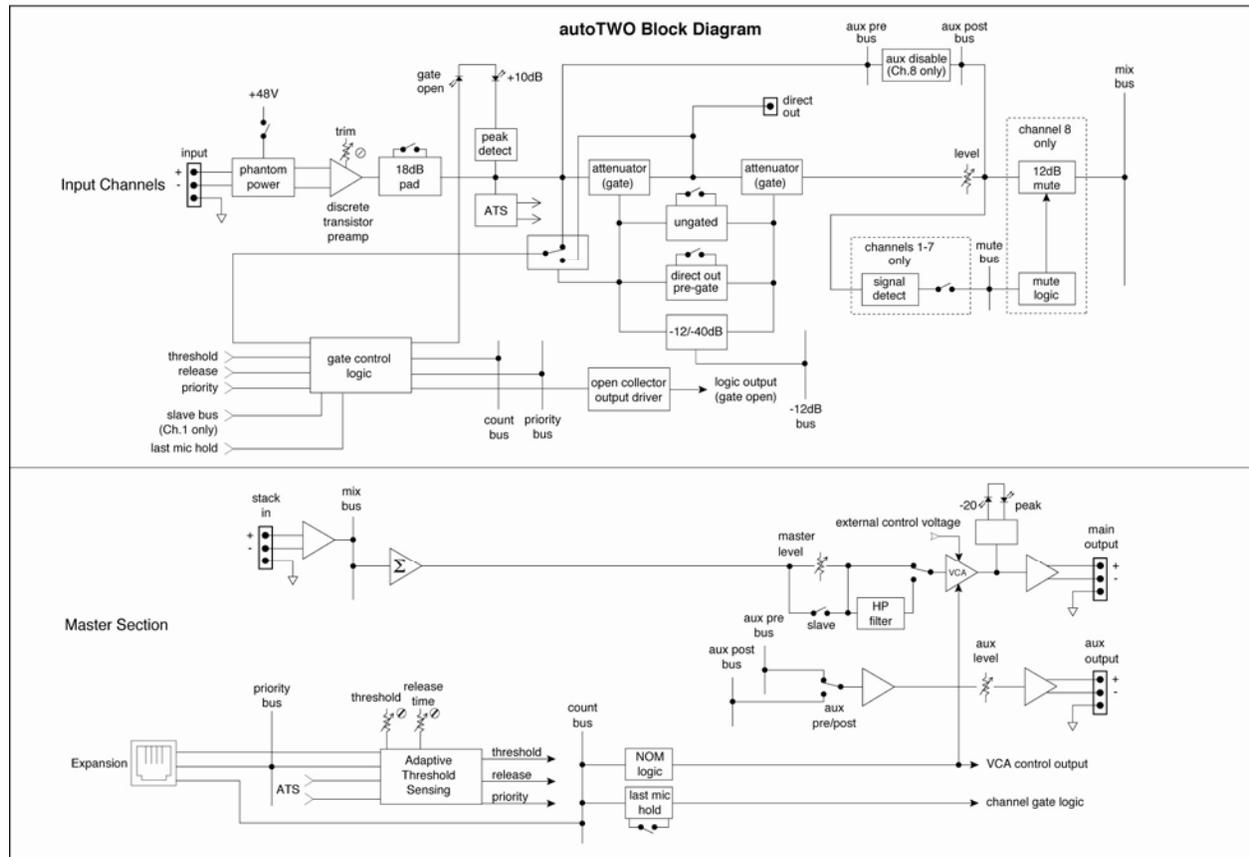


SPECIFICATIONS & BLOCK DIAGRAM

autoTWO SPECIFICATIONS

Frequency Response (20Hz~20kHz @ +4dBu):	+0/-0.5dB	High-Pass Filter:	6dB/octave @ 170Hz
THD+N (20Hz~20kHz @ +4dBu):	< 0.03%	Automixing:	
Output Noise (20Hz~20kHz, main & 1 channel @ nominal):	-75dBu	gate attack time	4ms
Maximum Gain:		release time (adjustable)	150ms to 4 seconds
mic/line inputs to main & aux outputs	86dB	threshold (adjustable)	-32dBu to -8dBu
stack in to main output	10dB	channel-off attenuation (selectable)	-12dB or -40dB
Crosstalk (channel-to-channel @ 1kHz):	< -65dB	NOM attenuation (doubling of active inputs)	-3dB
Output Impedance:		Feedback/Noise Improvement (8 channels)	9dB
main & aux outputs (balanced)	200 ohms	Power Consumption (115/230VAC 50/60Hz):	< 12 watts
Input Impedance:		Dimensions:	
mic/line inputs (balanced)	4.7k ohms	height	1.75 inches (44mm)
stack in (balanced)	28k ohms	width	19 inches (483mm)
Maximum Output:		depth	11 inches (279mm)
main & aux outputs	+24dBu	Weight:	< 10 lbs. (4.55kg)
channel direct outs	+18dBu	Compliance:	AES48-2005 Grounding & EMC practices
Maximum Input:			EU Directive 2002/95/EC, RoHS directive
mic/line inputs	+18dBu		CE marked
stack in	+24dBu		UL listed power source

autoTWO BLOCK DIAGRAM



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.

Biamp Systems
9300 S.W. Gemini Drive
Beaverton, Oregon 97008
(503) 641-7287



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 Model: autoTWO

Product Description: Automatic Mic/Line Mixer

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 Biamp Systems supplied 24 VDC External Power Supply 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:

A handwritten signature in cursive script that reads "Larry Copley".

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

PRECAUCIÓN : la información que se relata le 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 están definidos a continuación para modificar mensajes de seguridad:



El símbolo del rayo encorvado 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 : para reducir el riesgo de fuego o una descarga eléctrica, no exponer este aparato a la lluvia o la humedad.

PRECAUCIÓN : 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.



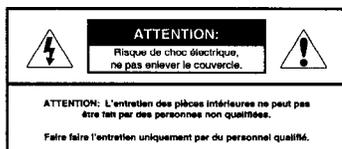
Le point d'exclamation dans un triangle permet de prévenir l'utilisateur des points importants concernant l'installation, le fonctionnement et l'entretien de l'appareil figurant dans le manuel d'utilisation.

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

Le apparecchiature e i manuali di istruzioni 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 voltaggio all'interno dell'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.



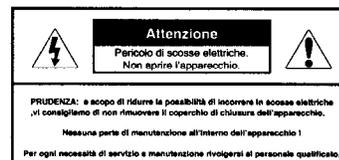
La simbologia con il punto esclamativo all'interno di un triangolo, intende avvisare l'utente di una serie di istruzioni contenute nel manuale d'uso riguardanti: operato, manutenzione e assistenza. Il suddetto manuale sarà a corredo dell'apparecchio.

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

PRUDENZA: 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 Begriffe **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: Der folgende Text warnt Sie vor ernsthaften Verletzungen oder Beschädigungen, die aus einer fehlerhaften Bedienung bzw. Handhabung des Gerätes resultieren können.

ACHTUNG: 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 Fußzeichen im Dreieck macht auf wichtige Installations-, Bedienungs- und Servicehinweise in der zugehörigen Bedienungsanleitung aufmerksam.

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

ACHTUNG: 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.

	ACHTUNG Risiko von elektrischem Schock Gerät nicht öffnen	
Achtung: Zur Minderung des Risikos von elektrischem Schock das Gerät nicht öffnen		
Keine Bedienungselemente im Inneren des Gerätes		
Service nur durch qualifiziertes Personal durchführen lassen		

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

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

FORSIGTIG: 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.

	FORSIGTIG Fare for elektrisk stød - må ikke åbnes.	
FORSIGTIG: Med henblik på at reducere risikoen for elektrisk stød, må svæbet ikke fjernes.		
Indeholder ingen komponenter relevante for brugeren.		
Anvend autoriseret servicepersonale ved alle serviceeftersøg.		

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 betekenissen:

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

VOORZICHTIG: 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 elektrische 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: OM HET RISICO VAN BRAND OF EEN ELECTRISCHE SCHOK TE VERMIJDEN DIENT U HET APPARAAT NIET AAN VOCHT BLOOT TE STELLEN.

VOORZICHTIG: 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.

	VOORZICHTIG. Risiko van elektrische schok. Niet openen.	
Waarschuwing: Om het risico van een elektrische schok te verminderen het apparaat niet openen.		
Er zijn geen, door gebruiker, vervangbare onderdelen in dit apparaat.		
Service overlaten aan gekwalificeerd service personeel.		

TURVALLISUUSTIEDOTE

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

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

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

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



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



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

VAROITUS: ÄLÄ ALTISTA LAITETTA SATEELLE TAI KOSTEUELLE TULIPALON JA SÄHKÖISKUN VAARAN VUOKSI.

HUOMIO: Laitteen asentaminen tulisi jättää ammattitaitoisen henkilön suorittavaksi ja asennuksessa tulee noudattaa kaikkia paikallisia säännöksiä.



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

	HUOMIO Sähköiskun vaara, älä avaa.	
HUOMIO: ÄLÄ AVAA KANTTA SÄHKÖISKUN VAARAN VUOKSI		
EI SISÄLLÄ KÄYTTÄJÄN HUOLLETTAVIA OSIA		
JÄTÄ HUOLTO AMMATTITAITOISELLE HENKILÖKUNNALLE		

SIKKERHETS INFORMASJON

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

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

VIKTIG: 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 brukers sikkerhet.



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



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

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

VIKTIG: 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.

	VIKTIG FARE FOR STØT, MÅ IKKE DEMONTERES.	
<p>VIKTIG: For å unngå faren for støt, må ingen deksler fjernes Ingen interne deler skal justeres eller repareres av bruker. Overlet service til autorisert personell.</p>		

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: Information som uppmärksammar på omständigheter som kan resultera i allvarig personskada eller skada på egendom om instruktionerna ej följs.

OBSERVERA: Information som uppmärksammar på instruktioner om hur skada på utrustning eller hur situationer där lättare personskador kan uppstå undvikas.

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



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



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

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

OBSERVERA: 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 kvalificerad installations och service personal.

	OBSERVERA RISK FÖR ELEKTRISK STÖT FÄR EJ ÖPPNAS	
<p>OBSERVERA: FÖR ATT MINSKA RISKEN FÖR ELEKTRISK STÖT, AVLÅSNÄ EJ LOCKET. INGA AV ANVÄNDARE UTBYTBARA ELLER REPARERBARA KOMPONENTER INUTI DENNA APPARAT. ALL SERVICE PÅ DENNA APPARAT SKALL UTFÖRAS AV KVALIFICERAD PERSONAL</p>		

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: 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: 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 προτόνων και στο εγχειρίδιο λειτουργίας, χρησιμοποιούνται τα σεινάς αναγνωρισμένα σύμβολα, των οποίων ο ροισμός δίνεται παρακάτω έτσι ώστε να υπογραμμιστούν τα μηνύματα ασφαλείας.



Η φωτεινή 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, λειτουργίας και συντήρησης (service) που περιέχονται στα φυλλάδια που συνοδεύουν την συσκευή.

ΚΙΝΔΥΝΟΣ: Για να αποφύγετε τον κίνδυνο φωτιάς ή ηλεκτροπληξίας, μην εκθέτετε αυτή τη συσκευή σε βροχή ή σε υγρασία.

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



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

	ΠΡΟΣΟΧΗ ΚΙΝΔΥΝΟΣ ΗΛΕΚΤΡΟΠΛΗΞΙΑΣ. ΜΗΝ ΑΝΟΙΓΕΤΕ.	
<p>ΠΡΟΣΟΧΗ: ΓΙΑ ΝΑ ΜΕΙΩΣΕΤΕ ΤΟΝ ΚΙΝΔΥΝΟ ΗΛΕΚΤΡΟΠΛΗΞΙΑΣ, ΜΗΝ ΜΕΤΑΚΙΝΗΣΕΤΕ ΤΟ ΚΑΛΥΜΜΑ. ΔΕΝ ΠΑΡΕΧΟΝΤΑΙ ΑΝΤΑΛΛΑΚΤΙΚΑ SERVICE ΣΤΟΝ ΧΡΗΣΤΗ ΓΙΑ SERVICE ΑΝΑΦΕΡΘΕΤΕ ΣΤΟ ΕΞΟΥΣΙΟΔΟΤΗΜΕΝΟ ΠΡΟΣΩΠΙΚΟ SERVICE</p>		

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

PRECAUÇÃO: Informação relacionada que instrui 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.



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



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

PRECAUÇÃO: 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.

	PRECAUÇÃO RISCO DE CHOQUE ELÉCTRICO NÃO ABRA	
<p>PRECAUÇÃO: PARA REDUZIR O RISCO DE CHOQUE ELÉCTRICO, NÃO REMOVA A TAMPA. PARTES INTERNAS NÃO MANTIDAS PELO USUÁRIO. ENCAMINHE A MANUTENÇÃO PARA PESSOAL DE SERVIÇOS QUALIFICADO.</p>		

有害物质表
Biamp Systems
AutoTwo
自动混音器

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
AutoTwo 设备	X	○	X	○	○	○
电源变压器	X	○	X	○	○	○
可插拔 Euroblock 连接器	○	○	○	○	○	○
手册和其他书面文档	○	○	○	○	○	○
包装箱和所有包装材料	○	○	○	○	○	○

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。

除限制销售和使用某些危险物质和制剂的欧盟指令 76/769/EEC 的修正指令-欧盟指令 91/338/EEC 所禁止的用途外，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或许超过 0.01%。

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或许超过 0.1%：

- 1) 电子元器件中玻璃内。
- 2) 铅作为合金元素的钢材中，铅含量可高达 0.35%。
- 3) 铅作为合金元素的铝材中，铅含量可高达 0.4%。
- 4) 铅作为合金元素的铜材中，铅含量可高达 4%。
- 5) 高熔点类焊料（即含铅量 85% 以上的铅基焊料）中。
- 6) 电子陶瓷部件内。
- 7) 由两种以上元素组成、用于连接管脚和微处理器封装、铅含量超过 80% 但低于 85% 的焊料中。
- 8) 兼容性管脚连接器系统中。
- 9) 倒装芯片封装内半导体芯片及载体之间完成可靠电子连接的焊料中。



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 0-40°C (32-104°F)
- 湿度为 0-95%，无凝结
- 海拔高度为 0-10,000 英尺
- 空气流通
- 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>