CMA Series
Commercial Mixer/Amplifiers
Operation Manual
INTRODUCTION

The CMA Series of commercial mixer/amplifiers combines a versatile 6-input mic/line mixer with either 30, 60, 120, or 350 Watt amplification. Mixing functions include mic/line/telephone inputs, selectable automatic & manual channel muting, channel priority assignment, remote level control, tone control, a built-in compressor, an internal chime, phantom power, and extensive output patching. The amplifier includes an output transformer, and provides rated power into direct or distributed speaker systems. The CMA Series carries a five-year warranty.

CMA Series features include:

♦ integrated mixer, power amplifier, and output transformer
♦ five electronically balanced microphone/line input channels
♦ one transformer balanced microphone/line/tel input channel
♦ rear panel trim control & pad switch on each input channel
♦ +24 Volt phantom power selectable on each input channel
♦ input transformer option on mic/line inputs (except CMA350)
♦ automatic muting of selected channels (-10, -20, or -40dB)
♦ automatic muting triggered by selected “priority” channels
♦ manual muting of selected channels (-10, -20, or -40dB)
♦ manual muting triggered from remote contact closures
♦ remote control of master level via rear panel terminals
♦ integral output compressor with rear panel threshold control
♦ recessed treble & bass controls plus “loudness” & “low-cut”
♦ two insert points for signal processing and remote control
♦ two line-outs and one stack-in for system interconnections
♦ 30, 60, 120, or 350 Watts into direct or distributed systems
♦ front panel indicators for power, fault, signal, and peak
♦ internal ‘pre-announcement’ chime tone with level control
♦ input/output connections provided on barrier strip terminals
♦ integral security cover and removable rack-wing/handles
♦ covered by Biamp Systems’ five-year warranty
♦ CE marked, UL and C-UL (UL Canada) listed
FRONT PANEL FEATURES

CMA30, CMA60, & CMA120 Front Panels

CMA350 Front Panel
FRONT PANEL FEATURES

Level (Channels 1~6): These controls adjust the amount of signal sent from the individual input channels to the mixer output. Optimum Level setting is near the 12 o'clock position (unity gain).

Level (Master): This control adjusts the amount of signal sent from the mixer output to the amplifier input. The Master Level control is used to adjust the overall volume of the system.

Low Cut: This switch inserts a low cut filter (6dB/octave @ 120Hz) at the amplifier input. **CAUTION:** To avoid output fault conditions, Low Cut must be used when driving 25/50/70/100 Volt speaker systems (see Output Selector & Output Terminals on pg. 4). Also, any other system equalization affecting frequencies below 120Hz should remain flat or be used as cut-only. This precludes the use of Loudness Contour or boosting of the Bass control (see below) in these applications.

Loudness Contour: This switch inserts a loudness filter at the mixer output (+6dB @ 100Hz & +4dB @ 10kHz). The Loudness filter provides tonal compensation when operating with low-level music signals.

Tone Control: This switch enables the Bass & Treble controls.

Bass: This screwdriver control adjusts the low-frequencies ("Bass") at the mixer output (±10dB @ 100Hz).

Treble: This screwdriver control adjusts the high-frequencies ("Treble") at the mixer output (±10dB @ 10kHz).

Peak Indicator: This red LED flashes when signal levels at the amplifier output have reached maximum. Occasional flashes of the Peak Indicator are acceptable, however, a continuously lit LED may indicate an excessive level setting.

Signal Indicator: This yellow LED remains lit when signal is present at the amplifier output.

Fault Indicator: This red LED lights to indicate fault conditions due to overheating, DC offset voltage, or failure of low-voltage power. The Fault Indicator will light for 3-5 seconds at turn-on, and then go off if no fault is detected. Some faults (such as overheating) will correct themselves when the unit has been turned off awhile. If the Fault Indicator remains lit when the unit is turned back on, contact your local Biamp Systems dealer.

On Indicator: This green LED remains lit when AC power is applied to the unit.

Power Switch: This switch applies AC power to the unit.
REAR PANEL FEATURES

CMA30, CMA60, & CMA120 Rear Panels

Power Entrance: This receptacle accepts a 3-prong AC power cord. WARNING: DO NOT REMOVE OR DEFEAT THE GROUND PRONG, AS THIS CONSTITUTES A SHOCK HAZARD. The removable lower portion of the receptacle holds the AC fuse. NOTE: See AC Fuse on page 7 for replacement by qualified personnel. A chassis ground post is provided (next to the receptacle) for system grounding.

Power Selector Switch (model CMA350 only): This switch selects either 115 Volt or 230 Volt AC operation for model CMA350 (see Modifications on pg. 7). Power Selector Switches for other models are on the underside of the chassis.

Output Selector: This switch selects either direct output or transformer coupled output from the amplifier. On models CMA60, CMA120, & CMA350 direct output is from the 4Ω terminal. On model CMA30, direct output is from the 8Ω terminal. NOTE: Model CMA350 can be used in 25V "balanced" output applications only with an optional external transformer DT-4 (#909-0031-00) connected at the 4 ohm (direct) output.

Output Terminals: These screw terminals provide connection for speaker loads (4Ω, 8Ω, 25V, 50V, 70V, or 100V) at the amplifier output (see Output Selector above). NOTE: 100V output is an export model option only. WARNING: THE LOUDSPEAKER OUTPUTS POSE A RISK OF HAZARDOUS ENERGY. LOUDSPEAKER CONNECTIONS MUST BE MADE PROPERLY. THE OUTPUT TERMINAL COVER MUST BE INSTALLED WHEN THE DEVICE IS ENERGIZED.

Chime Level: This control adjusts the volume level of the chime tone (see Mute/Chime on next page). To turn the chime tone off completely, set this control to the fully counter-clockwise position.

Send/Return: This 3-conductor TRS 1/4" Phone jack provides an insert point for signal processing or remote control devices. It is wired with Tip as send, Ring as return, and Sleeve as ground. Send/Return is after Stacking In, Loudness, & Tone, but before Compressor, Master Level, & Low Cut. Send/Return is a switching jack, which interrupts the signal flow only when a plug is inserted.
Line Out: This RCA phono jack provides an unbalanced line-level output from the mixer. Line Out is after Stacking In, Loudness, Tone, Compressor, & Master Level, but before Low Cut.

Rec Out: This RCA phono jack provides an unbalanced line-level output from the mixer. Rec Out is after Stacking In, but before Loudness, Tone, Compressor, Master Level, & Low Cut.

Pre Out: This RCA phono jack provides an unbalanced line-level output from the mixer. Pre Out is after Stacking In, Loudness, Tone, but before Compressor, Master Level, & Low Cut. Pre Out and Amp In may be used together as an insert point for signal processing or remote control devices. Remove jumper before connecting devices. To connect Pre Out to both Amp In and an external device, a parallel ('Y') cable must be used.

Amp In: This RCA phono jack provides an unbalanced line-level input to the amplifier. Amp In is after Stacking In, Loudness, Tone, but before Compressor, Master Level, & Low Cut. Pre Out and Amp In may be used together as an insert point for signal processing or remote control devices. Remove jumper before connecting devices.

Compressor: This control adjusts the threshold level at which the internal compressor circuit is activated. The internal compressor has a fixed compression ratio of 4:1, and is used to reduce peaks in output signal level, as well as to moderate volume differences between loud and soft signals.

Auto Mute: This control adjusts the threshold level at which signals from "priority" channels will automatically trigger muting of selected non-priority channels (see Assignment & Priority below).

Remote Level: These two screw terminals (plus "\(\uparrow\)") provide remote volume control of the master level. An internal voltage controlled amplifier (VCA) allows remote control from up to 2000 feet away, using any 5k-50k\(\uparrow\) linear taper potentiometer and/or switch to provide adjustment and/or muting of the master level. Potentiometers are wired with high-side to "\(+10V\)", low-side to "\(\uparrow\)", and wiper to "C". Switches simply connect (or disconnect) "\(+10V\)" to "C", and do not require a ground ("\(\uparrow\)" connection). **NOTE:** The factory installed jumper (between "\(+10V\)" & "C") *must be in place when a remote control is not being used.*

Mute/Chime: This screw terminal (plus "\(\uparrow\)") allows manual muting of any selected channels, via an external switch or contact closure (see Assignment & Priority below). When the Chime Level control is turned up (on), a pre-announcement chime tone will also be activated by the switch or contact closure.

Stacking In: These screw terminals provide a balanced line-level input to the mix bus, for input expansion. Stacking In is before Loudness, Tone, Compressor, Master Level, & Low Cut. For unbalanced input, wire high to (+) and ground to both (-) & (\(\uparrow\)).

Assignment: These five DIP switches are used to assign specific functions to the individual channels. To assign a function, move the respective switch to the left. **Phantom Pwr** assigns +24 Volts DC phantom power to the channel input, for powering condenser microphones. **CAUTION: TO AVOID DAMAGE TO EQUIPMENT, ASSIGN PHANTOM POWER ONLY ON CHANNELS WHICH ARE SELECTED FOR 'MIC INPUT AND WHICH REQUIRE PHANTOM POWER.** Auto Mute assigns a (non-priority) channel to be muted whenever signal is present in any "priority" channel. **Manual Mute** assigns a channel to be muted whenever the Mute/Chime terminals are shorted together via a switch or contact closure. **Mute Level** assigns the amount of muting (-10dB, -20dB, or -40dB) which is applied to a channel, when triggered by either Auto Mute or Manual Mute. **NOTE:** -10dB muting will occur when both switches are to the right. -40dB muting will occur when both switches are to the left.

Trim: This control adjusts the input gain of the channel, to compensate for various input signal levels. Once the Line/Mic switch has been set to the proper position (see Line/Mic below), the Trim control should be adjusted so that peaks in signal level do not cause distortion at the channel input.

Priority: This switch assigns a channel to "priority". When signal is present in a "priority" channel, any (non-priority) channels which are assigned to Auto Mute will be muted by their selected amount. **NOTE:** A "priority" channel *cannot* be auto muted by another "priority" channel, but a "priority" channel *can* be manually muted.

Line/Mic: This switch selects the proper impedance and gain for either microphone or line-level input signals. Depress the switch for line-level input. Release the switch for microphone input. On Channel 1, the Tel switch (see Tel below) must be released for the Line/Mic switch to operate.

Tel (Channel 1 only): This switch selects the proper impedance and gain for input from 600 ohm sources. The input for Channel 1 includes an isolation transformer, which allows connection to most telephone system audio ports.

Inputs: These screw terminals provide a balanced input connection for the channel. For unbalanced input, wire high to (+) and ground to both (-) & (\(\uparrow\)). The input for Channel 1 includes an isolation transformer. Input isolation transformers are optional on the other channels (2-6) of all models, except for the CMA350 (Biamp #908-0040-00).
MODIFICATIONS

CAUTION: THE FOLLOWING INFORMATION IS FOR USE BY QUALIFIED INSTALLATION/SERVICE PERSONNEL.

Removable Rack-Handles: The CMA Series have removable rack-handles. To remove the rack-handles: 1) Remove the two screws from the side of each rack-handle. 2) Remove the rack-handles. 3) Replace the mounting screws in the sides of the chassis.

Security Cover: The CMA Series includes a removable front panel security cover. A hole in the security cover provides access only to the power switch. To remove the security cover: 1) Using a 3mm hex wrench, loosen the two captive security cover mounting screws. 2) Remove the security cover.
WARNING: TO REDUCE THE RISK OF SHOCK, DISCONNECT ALL POWER FROM THE UNIT BEFORE MAKING ANY INTERNAL MODIFICATIONS OR EXTERNAL FIELD WIRING CONNECTIONS.

115V/230V AC Operation: The CMA Series may be converted to 230V operation for use in other countries. To convert to 230V operation: 1) Remove the fuse holder compartment from the lower portion of the rear panel AC Power Cord receptacle. 2) Replace the fuse in the fuse clip with the same type and appropriate value fuse (see table below). 3) Replace the fuse holder compartment.

4) Select the 230V position on the Power Selector Switch. The Power Selector Switch for models CMA30, CMA60, & CMA120 is recessed into the underside of the chassis, near the AC Power Cord receptacle. The Power Selector Switch for model CMA350 is instead located on the left side of the rear panel, above the AC Power Cord receptacle.

**230V fuse values**
- CMA30 - 1A NB 250V
- CMA60 - 2A NB 250V
- CMA120 - 3A NB 250V
- CMA350 - 3.15A SB 250V

**AC Fuse:** The AC Fuse is in the lower portion of the AC Power Cord receptacle. If the AC fuse should require replacement, see table below for proper value. **WARNING: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME VALUE AND TYPE FUSE.**

<table>
<thead>
<tr>
<th>MODEL</th>
<th>115 VAC</th>
<th>230 VAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMA30</td>
<td>2A NB</td>
<td>1A NB</td>
</tr>
<tr>
<td>CMA60</td>
<td>4A NB</td>
<td>2A NB</td>
</tr>
<tr>
<td>CMA120</td>
<td>6A NB</td>
<td>3A NB</td>
</tr>
<tr>
<td>CMA350</td>
<td>6.3A SB</td>
<td>3.15A SB</td>
</tr>
</tbody>
</table>
This application shows a CMA60 being used in a commercial/industrial paging system. Channel #1 is set for input from the telephone paging line, and is assigned both as a priority channel and manual muting of -20dB. Channel #2 is set for input from the security paging microphone, which also has a push-to-talk switch wired to the Mute/Chime terminals of the CMA60. Channel #3 is set for input from the line-level background music source, and is assigned manual and auto muting of -20dB. Therefore, telephone paging will automatically mute only the background music, whereas, security paging will manually mute both the background music and the telephone paging. The CMA60 is set for 'xfmr' output and is connected to a 70V distributed speaker system. **WARNING: THE ABOVE DIAGRAM SHOWS THE OUTPUT TERMINAL COVER REMOVED FOR CLARITY ONLY. THE COVER MUST BE INSTALLED WHEN THE UNIT IS ENERGIZED.**
This application shows a CMA120 being used in a house of worship sound reinforcement system. Channels #1–5 are set for input from the various microphones. Channel #6 is set for input from the tape deck (playback), which is also connected to Rec Out of the CMA120 (recording). A BIAMP MSP11 is inserted between Pre Out & Amp In of the CMA120, providing equalization to compensate for room acoustics, and automatic gain control for consistent output levels. If additional inputs are required, an auxiliary mixer (such as a BIAMP 601) may be connected to the Stacking In terminals of the CMA120. The CMA120 is set for ‘direct’ (4Ω) output and is connected (in parallel) to the two 8Ω speaker cabinets. **WARNING: THE ABOVE DIAGRAM SHOWS THE OUTPUT TERMINAL COVER REMOVED FOR CLARITY ONLY. THE COVER MUST BE INSTALLED WHEN THE UNIT IS ENERGIZED.**
This application shows a CMA30 and a CMA120 being used in a retail store paging system. Channel #1 of the CMA30 is set for input from the telephone paging line. The telephone system also provides a paging contact closure which is wired to the Mute/Chime terminals of the CMA30. Channel #2 of the CMA30 is set for input from the line-level digital message repeater, and is assigned both as a priority channel and manual muting of -20dB. Channel #3 of the CMA30 is set for input from the line-level background music source, and is assigned manual and auto muting of -10dB. Channel #1 of the CMA120 is set for input from the warehouse paging microphone, which also has a push-to-talk switch wired to the Mute/Chime terminals of the CMA120. Channel #6 of the CMA120 is set for input from the line-level Pre Out of the CMA30, and is assigned manual muting of -40dB. Therefore, the digital message repeater will automatically mute only the background music (-10dB), whereas, telephone paging will manually mute both the background music (-10dB) and the digital message repeater (-20dB). These combined signals from the CMA30 are then fed to the CMA120 in the warehouse, where they are manually muted by any warehouse paging (-40dB). RP-L2 potentiometers are wired to the Remote Level terminals of both the CMA30 and CMA120, providing remote control of store and warehouse levels. The CMA30 and CMA120 are set for ‘xfmr’ output and are connected to 70V distributed speaker systems. **WARNING: THE ABOVE DIAGRAM SHOWS THE OUTPUT TERMINAL COVER REMOVED FOR CLARITY ONLY. THE COVER MUST BE INSTALLED WHEN THE UNIT IS ENERGIZED.**
This application shows three CMA60s being used in a multi-floor office/hospital paging system. An all-call paging microphone and a background music source are connected to a BIAMP DA28R, which distributes those signals independently to the three CMA60s. Channel #1 of each CMA60 is set for input from line-level all-call paging, and is assigned as a priority channel. Channel #2 of each CMA60 is set for input from the respective floor paging microphone, and is assigned auto muting of -40dB. The push-to-talk switch of each floor paging microphone is wired to the Mute/Chime terminals of the respective CMA60. Channel #3 of each CMA60 is set for input from line-level background music, and is assigned manual and auto muting of -20dB. Therefore, local paging will manually mute the background music only on that floor (-20dB), whereas, all-call paging will automatically mute background music (-20dB) and local paging (-40dB) on all floors. The CMA60s are set for 'xfmr' output and are connected to 70V distributed speaker systems for each floor. **WARNING:** THE ABOVE DIAGRAM SHOWS THE OUTPUT TERMINAL COVER REMOVED FOR CLARITY ONLY. THE COVER MUST BE INSTALLED WHEN THE UNIT IS ENERGIZED.
## SPECIFICATIONS

### CMA30, CMA60, & CMA120

<table>
<thead>
<tr>
<th>Output Power</th>
<th>Input Impedance / Sensitivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMA 30</td>
<td>30 Watts</td>
</tr>
<tr>
<td>CMA 60</td>
<td>60 Watts</td>
</tr>
<tr>
<td>CMA 120</td>
<td>120 Watts</td>
</tr>
</tbody>
</table>

#### Power Bandwidth (THD < 0.4%):
- **direct output**: 20Hz–20kHz
- **transformer output**: 50Hz–20kHz

#### Frequency Response (+0/-1.5dB):
- **direct output**: 20Hz–20kHz
- **transformer output**: 50Hz–20kHz

#### Total Harmonic Distortion (1kHz @ rated power):
- < 0.2%

#### Output Regulation (no load to full load):
- < 0.5dB

#### Equivalent Input Noise (mic in, 150Ω termination):
- -123dBu

#### Signal-to-Noise Ratio (20Hz-20kHz @ rated power):
- line inputs: 78dB
- telephone inputs: 78dB
- master level off: 98dB

#### Compressor:
- **attack time**: < 1mSecond
- **release time**: > 1 Second
- **compression ratio**: 4 : 1
- **threshold adjust range**: 15dB

#### Dimensions (all models; includes rack/handles & feet):  
- 3.68” (93.5mm) (height)  
- 19” (483mm) (width)  
- 14.33” (364mm) (depth)

#### Weight:
- CMA 30: 17.64 lbs. (8kg)  
- CMA 60: 22 lbs. (10kg)  
- CMA 120: 26.45 lbs. (12kg)

### CMA350

<table>
<thead>
<tr>
<th>Output Power</th>
<th>350 Watts</th>
</tr>
</thead>
</table>

#### Power Bandwidth (THD < 0.5%):
- **direct output**: 20Hz–20kHz
- **transformer output**: 50Hz–20kHz

#### Frequency Response (+0/-1.5dB):
- **direct output**: 20Hz–20kHz
- **transformer output**: 50Hz–20kHz

#### THD + Noise (1kHz @ rated power):
- < 0.25%

#### Output Regulation (no load to full load):
- < 0.5dB

#### Equivalent Input Noise (mic in, 150Ω termination):
- -123dBu

#### Signal-to-Noise Ratio (20Hz-20kHz @ rated power):
- line inputs & telephone input: 78dB
- master level off: 98dB

#### Input Impedance / Sensitivity:
- mic inputs: 6kΩ / -77dBu (110µV)
- line inputs: 15kΩ / -37dBu (14mV)
- telephone inputs: 600Ω / -60dBu (775µV)
- amplifier input: 10kΩ / +4dBu (1.2V)
- stacking input: 20kΩ / -8dBu (300mV)
- patch/return input: 10kΩ / -8dBu (300mV)

#### Output Impedance / Level:
- record output, preamp output, & line output: 200Ω / +4dBu (1.2V)
- patch/send output: 50Ω / -8dBu (300mV)

#### Amplifier Output Impedance / Level:
- CMA 30: 4Ω / 11V  
- CMA 60: 8Ω / 16V  
- CMA 120: 8Ω / 22V  
- 20.8Ω / 25V  
- 10.4Ω / 25V  
- 5.2Ω / 25V  
- 83.3Ω / 50V  
- 41.7Ω / 50V  
- 20.8Ω / 50V  
- 163.3Ω / 70V  
- 81.7Ω / 70V  
- 40.8Ω / 70V  
- 333.3Ω / 100V (export)  
- 166.7Ω / 100V (export)  
- 83.3Ω / 100V (export)

#### Power Consumption (120VAC 60Hz / 240VAC 50Hz):
- < 90W  
- < 220W  
- < 375W

#### Power Consumption (120/240VAC 60/50Hz):
- < 760 Watts

#### Dimensions (includes rack/handles & feet):
- height (three rack spaces): 5.24” (133mm)
- width: 19” (483mm)
- depth: 14” (356mm)

#### Weight:
- CMA 30: 17.64 lbs. (8kg)  
- CMA 60: 22 lbs. (10kg)  
- CMA 120: 26.45 lbs. (12kg)

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### CMA350

<table>
<thead>
<tr>
<th>Output Power</th>
<th>350 Watts</th>
</tr>
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</table>

#### Power Bandwidth (THD < 0.5%):
- **direct output**: 20Hz–20kHz
- **transformer output**: 50Hz–20kHz

#### Frequency Response (+0/-1.5dB):
- **direct output**: 20Hz–20kHz
- **transformer output**: 50Hz–20kHz

#### THD + Noise (1kHz @ rated power):
- < 0.25%

#### Output Regulation (no load to full load):
- < 0.5dB

#### Equivalent Input Noise (mic in, 150Ω termination):
- -123dBu

#### Signal-to-Noise Ratio (20Hz-20kHz @ rated power):
- line inputs & telephone input: 78dB
- master level off: 98dB

#### Input Impedance / Sensitivity:
- mic inputs: 6kΩ / -77dBu (110µV)
- line inputs: 15kΩ / -37dBu (14mV)
- telephone inputs: 600Ω / -60dBu (775µV)
- amplifier input: 10kΩ / +4dBu (1.2V)
- stacking input: 20kΩ / -8dBu (300mV)
- patch/return input: 10kΩ / -8dBu (300mV)

#### Output Impedance / Level:
- record output, preamp output, & line output: 200Ω / +4dBu (1.2V)
- patch/send output: 50Ω / -8dBu (300mV)

#### Amplifier Output Impedance / Level:
- 4Ω / 37.4V
- 8Ω / 53V
- 1.8Ω / 25V
- 7.1Ω / 50V

#### Power Consumption (120/240VAC 60/50Hz):
- < 760 Watts

#### Dimensions (includes rack/handles & feet):
- height (three rack spaces): 5.24” (133mm)
- width: 19” (483mm)
- depth: 14” (356mm)

#### Weight:
- 51 lbs. (23.13kg)
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.

BIAMP Systems expressly warrants this product to be free from defects in material and workmanship for a period of 5 YEARS from the date of purchase as a new product from an authorized BIAMP Systems dealer under the following conditions.

1. In the event the warranted BIAMP Systems product requires service during the warranty period, BIAMP Systems will repair or replace, at its option, defective materials, provided you have identified yourself as the original purchaser of the product to any authorized BIAMP Systems Service Center. Transportation and insurance charges to and from an authorized Service Center or the BIAMP Systems factory for warranted products or components thereof to obtain repairs shall be the responsibility of the purchaser.

2. This warranty will be VOIDED if the serial number has been removed or defaced; or if the product has been subjected to accidental damage, abuse, rental usage, alterations, or attempted repair by any person not authorized by BIAMP Systems to make repairs; or if the product has been installed contrary to BIAMP Systems's recommendations.

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

4. BIAMP SYSTEMS SHALL NOT IN ANY EVENT BE LIABLE FOR SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, INCLUDING LOST PROFITS, LOSS OF USE, PROPERTY DAMAGE, INJURY TO GOODWILL, OR OTHER ECONOMIC LOSS OF ANY SORT. EXCEPT AS EXPRESSLY PROVIDED HEREIN, BIAMP SYSTEMS DISCLAIMS ALL OTHER LIABILITY TO PURCHASER OR ANY OTHER PERSONS ARISING OUT OF USE OR PERFORMANCE OF THE PRODUCT, INCLUDING LIABILITY FOR NEGLIGENCE OR STRICT LIABILITY IN TORT.

5. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED. BIAMP SYSTEMS EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE REMEDIES SET FORTH HEREIN SHALL BE THE PURCHASER'S SOLE AND EXCLUSIVE REMEDIES WITH RESPECT TO ANY DEFECTIVE PRODUCT. THE AGENTS, EMPLOYEES, DISTRIBUTORS, AND DEALERS OF BIAMP SYSTEMS ARE NOT AUTHORIZED TO MODIFY THIS WARRANTY OR TO MAKE ADDITIONAL WARRANTIES BINDING ON BIAMP SYSTEMS. ACCORDINGLY, ADDITIONAL STATEMENTS SUCH AS DEALER ADVERTISEMENTS OR REPRESENTATIONS DO NOT CONSTITUTE WARRANTIES BY BIAMP SYSTEMS.

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

Thank you for purchasing BIAMP SYSTEMS...
AMERICAN SOUND CRAFTSMANSHIP

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(503) 641-7287
CE Mark (Communaute Europeenne)

The European Communities conformity mark having "CE" letters has been introduced within the European Union as an indication that products conforms to relevant European Directives. There are currently two Directives covering electrical and electronic products: 1. EMC Directives 89/336/EEC w. e. f. the 1st of January 1996; and 2. Low Voltage Directives 73/23/EEC w. e. f. the 1st of January 1997.

The Low Voltage Directive covers electrical safety for products connected to the domestic electricity supply and is relatively self explanatory. (In our case, it means that this equipment has been designed, manufactured and from 1st January 1997 independently tested for compliance with the electrical safety standard EN 60065.). EN 60065 is identical to the British Standard BS 415 and is similar to the International Standard IEC 65.

The Electromagnetic compatibility (EMC for short) evolving from the European Directive 89/336/EEC requires that the product should not generate electromagnetic interference that would be likely to cause other electrical or electronic apparatus to malfunction, and should not get unduly affected by electromagnetic interference from such apparatus.

Similar regulations covering interference generated by intentional or unintentional radio frequency devices, including digital devices, have existed for several years in the United States. The FCC Telecommunications regulations (part 15) specifically addresses product Emission limits. Currently Immunity is not covered under these regulations.

This product has therefore been tested to recognised EMC standards. The exact standards used are listed in the declaration of conformity. Different types of products may use different standards.

Please note that the Directive requires only what is called an 'adequate' level of immunity. It does not mean that the product will be totally unaffected in all possible situations.

As part of the requirements of the Directive we are obliged to explain the effects that may be observed.
Immunity

Immunity is the ability to maintain a specified performance when the product is subjected to interference signals of specified levels. If the product is operated in environments with unusually high levels of emissions from other apparatus, its performance may be degraded. Due to the large number of variables possible in the usage of this product and its control settings, it is impossible to define the exact degradation that may occur in every possible situation.

For your ready reference we have made some observations of the test results in what we consider to be typical operating situations: Susceptibility/Immunity to 'fast transients' on the a.c. power and signal connections and to electrostatic discharge may result in momentary noises from the product such as beeps, chirps, clicks, small plops or sparking type noise. Operation will otherwise remain unaffected.

Since these events are usually infrequently encountered the results should not give cause for concern.

Susceptibility to radio frequency fields (3V/m): Result depends on products and test frequency.

For our product - no audible degradation was observed.

Degradation may occur at specific spot frequencies, so unless the product happens to be located near an apparatus transmitting at exactly that frequency, no degradation will occur. If affected, improvements can be made to minimise the reduction in performance by adopting one or more actions as noted in the following section of the Guidelines To Minimise Interference.

Emissions

Generally, an audio equipment is incapable of generating harmful interference unless it is misused or a fault exists. However, audio products containing microprocessors or other digital circuitry often operate in radio frequency range and may emit some of this energy into the environment.

The product has been tested for compliance with established standards for emissions. These standards consider specific emission levels and distances for usage in "normal" environments for the intended product application. This does not mean the product will not cause interference with other equipment under all circumstances.

If the product is found to cause any interference with another apparatus; application of one or more of the actions noted in the following section of Guidelines To Minimise Interference may improve the condition.
Guidelines To Minimise Interference

If the product is used as intended, we are confident that in practice, you are unlikely to encounter any problems in normal everyday use.

In order to minimise the possibility of interference from, or in, other apparatus while using this product; we recommend the following:

It is important that high quality screened cables are used for all signal connections. Note that low cost screened cables may have inadequate poor quality screening which does not fully cover the internal wires. Screened cable which relies on conductive plastic screening also has poorer R.F. characteristics. It is advisable to use cable that has full coverage lapped copper screening. Speaker connections can use unscreened cable. XLR style connectors should have the screen connected to the shell of the connector as well as pin 1. Some connector manufacturers provide this ability as a solder lug on the connector body.

Minimise cable lengths when interconnecting equipment. Excessive cable lengths increases an antenna effect. Use balanced connections wherever possible, especially if equipment is located in different racks or locations.

Don't place sensitive equipment directly next to units with large power transformer such as amplifiers, or near digital devices. Computers, monitors and associated peripherals may cause interference, especially older equipment. Locate video monitors a prudent distance from any sensitive signals.

In case of the interference affecting the product, relocation of the product, even to another room can be sufficient. Check the quality of the ground connection to the product. Product designed for earth grounding must be connected to earth ground. Determine the source of the interference by switching off and on other electrical and electronic products in the vicinity. Move any interfering product to a more distant location. Connect apparatus to a different AC Mains power circuit.

Fit a partial or complete R.F. screening (known as a Faraday cage) around the product or to the room in which the product is used.

Typical mains transients may be caused by defective equipment in the surrounding. This may be determined by switching them off and on. Products with Thermostats, such as heating / cooling devices & refrigerators, often can generate transients due to faulty or worn thermostat switch. Additionally mains transients may be generated by apparatus that are external of your facility, such as main feeder wiring or street lighting. In such cases you will need to contact your electrical supply authority to resolve the interference.

Finally if all else fails you may wish to add an external filter which may be obtained from electrical retailers.

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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.

The labeling 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.

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'icône d'un triangle avec un avertissement indique la présence de tensions dangereuses à l'intérieur de l'appareil ou de points de connexion à des tensions suffisantes pour constituer un risque de choc électrique.

Le point d'exclamation dans un triangle indique que l'utilisateur a été informé 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 effectuées par du personnel qualifié.

“INFORMACIÓN DE SEGURIDAD”

Las palabras PELIGRO (WARNING) y PRECAUCIÓN (CAUTION) a lo largo del manual y en el dispositivo (aparato), llaman la atención sobre situaciones que podrían resultar en 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 y no se sigan adecuadamente las instrucciones.

PRECAUCIÓN (CAUTION): la información que se relata le insta a tomar medidas para evitar daños al equipo o a los demás o condiciones que podrían resultar en un peligro menor si no se siguen adecuadamente.

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

El símbolo del rayo encerrado en un triángulo pretende alertar al usuario de la existencia de un peligroso voltaje que no está aislado dentro de la caja del aparato o a un terminal de conexión y que podría ser de suficiente magnitud como para constituir un peligro para el manejo.

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 acompañen al aparato.

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

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

INFORMAZIONI PER LA SICUREZZA

Le parole AVVERTENZA (WARNING) e PRUDENZA (CAUTION) poste sul manuale d'uso o sul dispositivo attirano la vostra attenzione sulle importanti informazioni per la vostra sicurezza. Queste parole hanno il seguente significato:

AVVERTENZA (WARNING): la sottolineata indicazione si riferisce a una situazione di pericolo che, se non viene evitata, potrebbe causare morte o lesioni gravi.

PRUDENZA (CAUTION): la sottolineata indicazione si riferisce a una situazione che potrebbe causare lesioni meno gravi o danni al bene o al bene.

Le simboli che si troveranno nel manuale d’uso o sul dispositivo rappresentano la simbologia standard riconosciuta in tutto il mondo a seguito delle informazioni per la sicurezza.

La simbologia con il simbolo del tetto di un tetto indica la presenza di un potenziale di scarica elettrica che potrebbe far sì che si verifichi un'ingresso di etere elettricamente condizionato in una situazione di manutenzione o di riparazione dell'apparecchiatura.

AVVERTENZA (WARNING): PER RIDURRE IL RISCHIO DI POSSIBILI INCENDI O SCOSSE ELETTRICHE, SCOSTIAMOLO DI SPAZIO ESIPORE IL APPARECCHIO ALLA PIGIA O ALL’UMIDITÀ.

PRUDENZA (CAUTION): l'installazione di questo apparecchio dovrà essere eseguita esclusivamente da personale qualificato a tipo di installazione dovrà essere eseguita in regola con le norme vigenti locali.

Modifiche e ulteriori informazioni specificate in questo manuale sono solamente riferite 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 weist Sie auf ernsthaften Verletzungen oder Beschädigungen, (WARNUNG) die aus einer fehlerhaften Bedienung bzw. Handhabung des Geräts 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 Beschreibung der Geräte und die Bedienungshinweise weisen unter Umständen internationale bekannte Symbole auf, die die folgende Bedeutung haben:

- Das Blitzsymbol in Dreieck weist vor anlehnender, nicht isolierter „gefährlicher Spannung“ im Innern oder an den Anschlüssen des Geräts. Die Berührung der unter Spannung stehenden Teile kann zu einem elektrochemischen Schock führen.
- Das Rutschigen in 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 (WARNUNG) Gerät vor Regen und Feuchtigkeit.

ACHTUNG: Die Installation des Geräts 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.


Keine Bedienungselemente im Inneren des Geräts Service nur durch qualifiziertes Personal durchführen lassen.

Sicherhedsinformation

Andre ADVARSEL (WARNING) og FORSIGTIG (CAUTION), brugt i henholdsvis brugehjælpede og på selv produkter, indikerer, at vigtige information omkring sikkerhed følger.

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

Produkttiketter og brugehjælpvede kan indeholde de internationalt anerkendte symboler der er vist nedenfor.

- Teksten med en lyserød maling har til hensigt at advarre bruken om, at produktet indeholder "farlig spænding", og at det derfor er forbudt med fare for elektrisk stød at tânde produktet.
- Teksten med uldbetegne har til hensigt at advarre bruken om, at vigtige information omkring installation, brug, service og vedligeholdelse af produktet er inddelt i den medfølgende brugehjælpede.

ADVARSEL: Med hensyn på at reducere risikoen for brand eller elektrisk stød, må produktet ikke udsættes forregn eller fugt.

FORSIGTIG: Installation af dette produkt skal foretages af en autoriseret installer og skal være i overensstemmelse med alle anvendelige lokale retningslinjer.

- Modifikationer samt ændringer udført udefra denne brugehjælpede er kun tilladt ved kvalificeret installerings- og servicepersonalet.

TURVALLISUUSTIEDOTE

Sanat VAROITUS (WARNING) ja HUOMIO (CAUTION), jotka esitysysteemissä ja ilme laitteessa, ilmoitavat tärkeät turvallisuusohjeet. Näillä sanoin on seuraava merkitys:

VAROITUS: Yleisesti oleva informaatio varastaa olosuhteita, jotka saattavat johtaa vakaviin ongelmii.

HUOMIO: Yleisesti oleva informaatio, joka lienee vaihdettavissa tai jollei ole ollut mahdollista ottaa huomioon.

Turvaoikeus tai käyttöohjeessa voidaan käyttää seuraavia lain määritteleviä sanomia, jotka vahvistavat turvallisuusohjeittua.

- Kolmio sisältää olevan ruutulain, joka vastaa käytännössä laatteen laadun tai tilavuuden vähentämistä vastaseasta liimattisesta, jota saattaa olla tarpeen seurata hoitoa tai huoltoa.

Kolmio sisältää olevan ruutulain, joka vastaa käytännössä seuraavia: a) luokan; b) muita vastaaviin: t) seuraavaa; c) muuta vastaavia.

HUOMIO: Laiteen asentaminen tulee jättää ammattitaitoon henkilön selvitysteokselle ja seuraamiseksi tullessa laatikossa valmistuksen käsikirjastossa.

VAAROITUS: Älä altista laitetta sateelle tai kosteille tiloille (säännösten mukaan)!

HUOMIO: Laitteen asentaminen tulee jättää ammattitaitoon henkilön järjestelyihin ja seuraamiseksi tullessa laatikossa valmistuksen käsikirjastossa.
SAKERHETS INFORMATION

Ordren VARNING (WARNING) och OBSERVERA (CAUTION) vilka använda i denna manual och på appen, menar att uppmärksammar viktig säkerhetsinformation. Dessa ord har följande betydelse.

VARNING: Information som uppmärksammar på omedelbarheter som kan resultera i alvarlig personskada eller skada på egendom om instruktionerna ej följs.

OBSERVERA: Information som uppmärksammar på påpekande om hur skada på allmänhet eller miljö kan förhindras om instruktionerna följs.

Följande internationellt använda ord och symboler används i handboken och på märkningar på produkten för att uppmärksammar användare på viktiga säkerhetsinformationer.

FÖR ATT MINSKA RISKEN FÖR BRAND ELLER ELEKTRISK STÖT, UTSETTS ELLER Fukt eller Väta.

Installation av denna apparat skall utföras av kvalificerad inställare samt endigt alla gällande lokale bestämmelser.

Observera: Risk för elektrisk stöt kan uppstå.

Observera: FÖR ATT MINSKA RISKEN FÖR BRAND ELLER ELEKTRISK STÖT, DÅDRA ALLA APPARATENS SÄKERHETSATT ILOCKET.

Observera: Klikka på alls av kvalificerad personal.

INFORMATION SOBRE SEGURANÇA

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

ADVERTÊNCIA (WARNING) - Informações relacionadas à segurança que podem causar lesões leves ou graves.

PRECAUÇÃO (CAUTION) - Informações relacionadas a práticas que podem causar lesões leves ou graves.

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

Símbolos de advertência de perigo.

Segurança da rede elétrica.

Sinal de perigo.

Sinal de advertência.

Point de exclamação.

Advertência: Para reduzir o risco de incêndio ou choque elétrico, não exponha este aparelho a chuva ou umidade.

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 citado neste manual não são para o uso exclusivo do pessoal qualificado de instalação e manutenção.