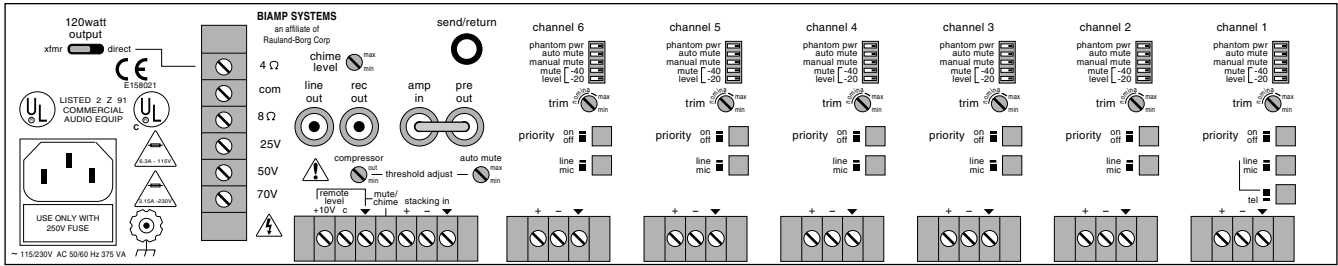
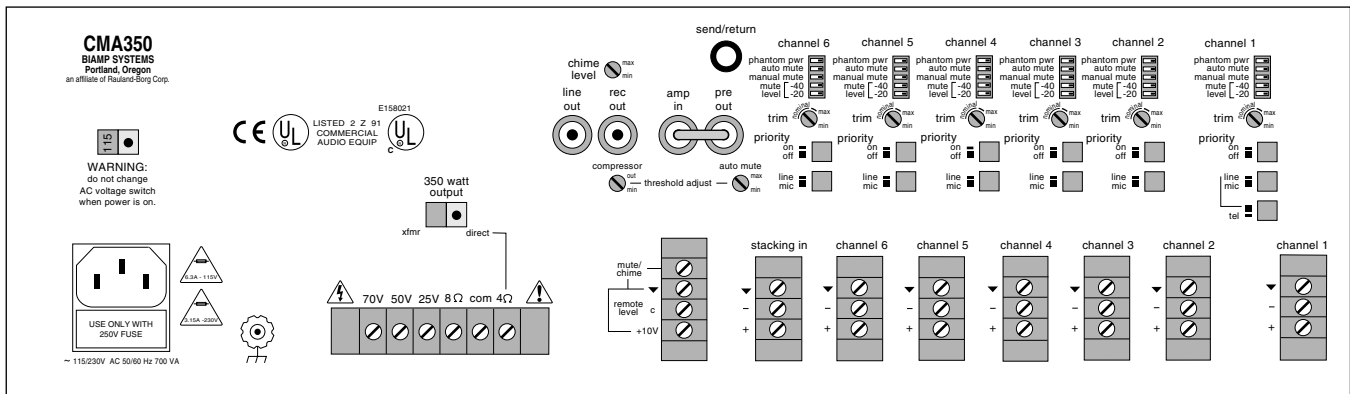


REAR PANEL FEATURES

CMA30, CMA60, & CMA120 Rear Panels



CMA350 Rear Panel



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.**

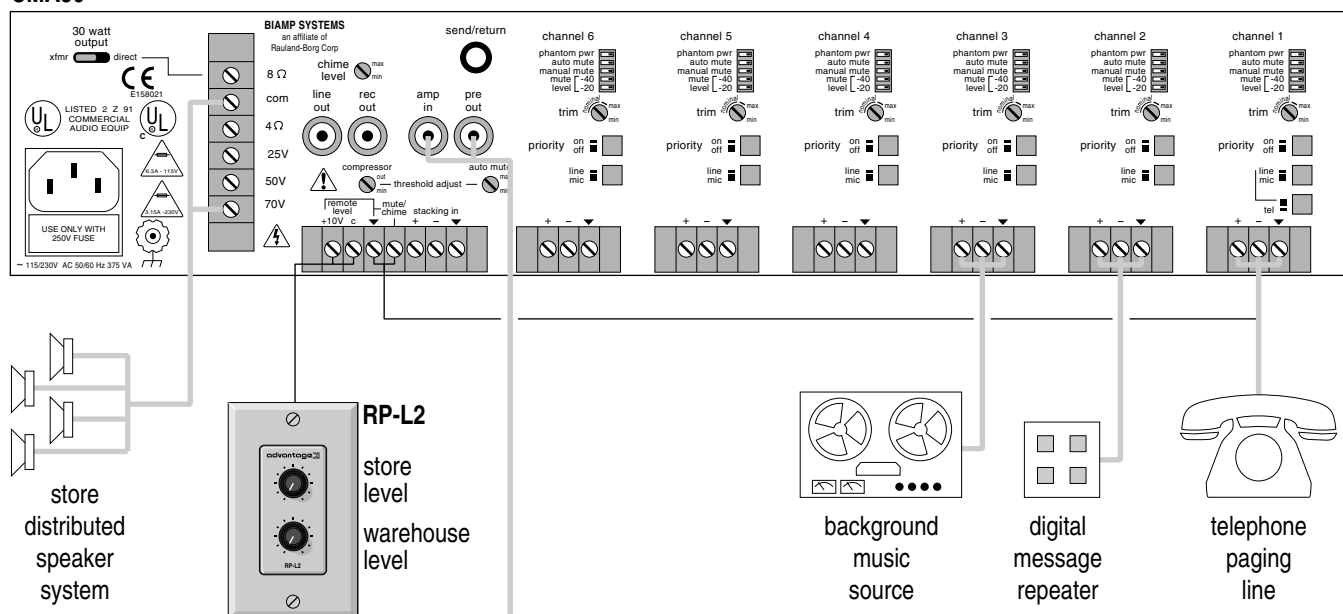
Chime Level: This control adjusts the volume level of the chime tone (see Mute/Chime on next page). To turn the chime tone off completely, set this control to the fully counter-clockwise position.

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.

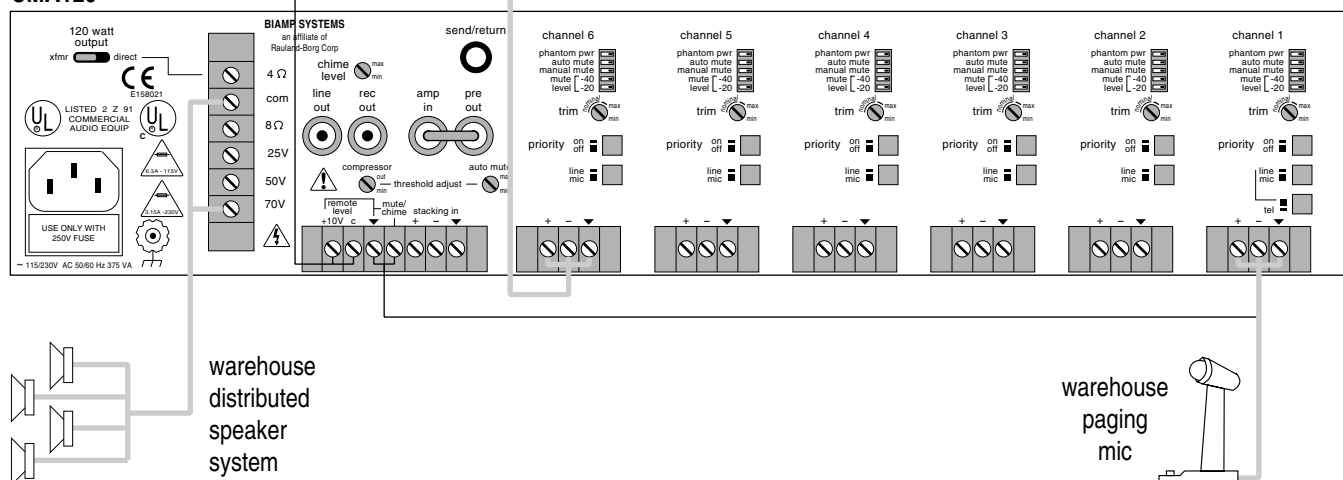
APPLICATIONS

Retail Store Paging System

CMA30



CMA120



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 'xmr' 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.**

SPECIFICATIONS

CMA30, CMA60, & CMA120

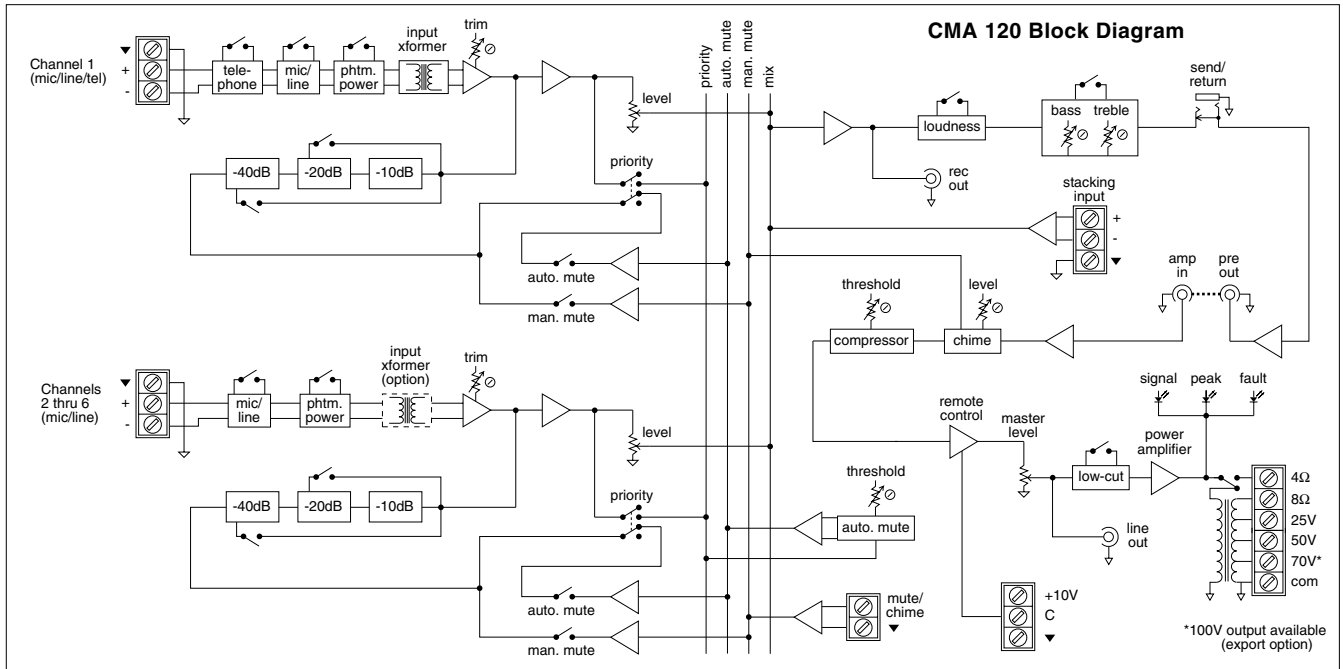
Output Power:		Input Impedance / Sensitivity		
CMA 30	30 Watts	mic inputs	6kΩ / -77dBu (110μV)	
CMA 60	60 Watts	line inputs	15kΩ / -37dBu (14mV)	
CMA 120	120 Watts	telephone inputs	600Ω / -60dBu (775μV)	
Power Bandwidth (THD < 0.4%):		amplifier input	10kΩ / +4dBu (1.2V)	
direct output	20Hz~20kHz	stacking input	20kΩ / -8dBu (300mV)	
transformer output	50Hz~20kHz	patch/return input	10kΩ / -8dBu (300mV)	
Frequency Response (+0/-1.5dB):		Output Impedance / Level:		
direct output	20Hz~20kHz	preamp output & line output	200Ω / +4dBu (1.2V)	
transformer output	50Hz~20kHz	record output	200Ω / +4dBu (1.2V)	
Total Harmonic Distortion (1kHz @ rated power):		patch/send output	50Ω / -8dBu (300mV)	
Output Regulation (no load to full load)		Amplifier Output Impedance / Level:		
Equivalent Input Noise (mic in, 150Ω termination):		<u>CMA 30</u>	<u>CMA 60</u>	<u>CMA 120</u>
Signal-to-Noise Ratio (20Hz-20kHz @ rated power):		4Ω / 11V	4Ω / 16V	4Ω / 22V
line inputs	78dB	8Ω / 16V	8Ω / 22V	8Ω / 31V
telephone inputs	78dB	20.8Ω / 25V	10.4Ω / 25V	5.2Ω / 25V
master level off	98dB	83.3Ω / 50V	41.7Ω / 50V	20.8Ω / 50V
Compressor:		163.3Ω / 70V	81.7Ω / 70V	40.8Ω / 70V
attack time	< 1mSecond	333.3Ω / 100V (export)	166.7Ω / 100V (export)	83.3Ω / 100V (export)
release time	> 1 Second	Power Consumption (120VAC 60Hz / 240VAC 50Hz):		
compression ratio	4 : 1	<u>CMA 30</u>	<u>CMA 60</u>	<u>CMA 120</u>
threshold adjust range	15dB	< 90W	< 220W	< 375W
Dimensions (all models; includes rack/handles & feet):		Weight:		
height (two rack spaces)	3.68" (93.5mm)	CMA 30	17.64 lbs. (8kg)	
width	19" (482mm)	CMA 60	22 lbs. (10kg)	
depth	14.33" (364mm)	CMA 120	26.45 lbs. (12kg)	

CMA350

Output Power:		Output Impedance / Level:	
Power Bandwidth (THD < 0.5%):		record output, preamp output, & line output	200 Ω / +4dBu (1.2V)
direct output	20Hz-20kHz	patch/send output	50 Ω / -8dBu (300mV)
transformer output	50Hz-20kHz	Amplifier Output Impedance / Level:	
Frequency Response (+0/-1.5dB):		4 Ω / 37.4V	
direct output	20Hz-20kHz	8 Ω / 53V	
transformer output	50Hz-20kHz	1.8 Ω / 25V	
THD + Noise (1kHz @ rated power):		7.1 Ω / 50V	
Output Regulation (no load to full load)		14 Ω / 70V (28.6 Ω / 100V export)	
Equivalent Input Noise (mic in, 150 Ω termination):		Compressor:	
Signal-to-Noise Ratio (20Hz-20kHz @ rated power):		attack time	< 1mSecond
line inputs & telephone input	78dB	release time	> 1 Second
master level off	98dB	compression ratio	4 : 1
Input Impedance / Sensitivity		threshold adjust range	15dB
mic inputs	6k Ω / -77dBu (110 μ V)	Power Consumption (120/240VAC 60/50Hz):	
line inputs	15k Ω / -37dBu (14mV)	< 760 Watts	
telephone inputs	600 Ω / -60dBu (775 μ V)	Dimensions (includes rack/handles & feet):	
amplifier input	10k Ω / +4dBu (1.2V)	height (three rack spaces)	5.24" (133mm)
stacking input	20k Ω / -8dBu (300mV)	width	19" (483mm)
patch/return input	10k Ω / -8dBu (300mV)	depth	14" (356mm)
		Weight:	51 lbs. (23.13kg)

BLOCK DIAGRAM

CMA30, CMA60, CMA120



CMA350

