



Broadcast Devices, Inc.

# ***CMP-300* Composite Mixer/ Distribution Amplifier**

TECHNICAL REFERENCE MANUAL

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**Rev B 03/26**

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## Introduction

The CMP-300 Composite Mixer/Distribution System is intended to be used in conjunction with suitable FM or TV stereo generators and/or composite STLS, SCA and SAP generators for the purpose of distributing these signals to up to three locations and when desired, can be used to combine up to three base band type signal for application to up to three exciters. This is done with a high degree of isolation so that equipment can be interfaced easily. The typical configuration for the CMP-300 is to distribute a composite stereo and SCA/RBDS signals to a main and back up exciter.

### A. Unpacking and Inspection

Carefully unpack the unit after receipt and inspect for damage that may have occurred during shipping. If damage is noted, contact the shipper immediately and file a damage claim. The contents of the package have been insured to cover total replacement cost. Make certain that the package contents are the same as noted on the packing slip. If not, contact Broadcast Devices, Inc. Check to make sure all mechanical parts are secure. Units are delivered from the factory configured for 120 volts A.C. 60 Hz. Operation. Check to make sure that the power source is correct for proper operation. Units are field configurable for 220 Volt operation. See initial configuration section of part III, installation section for different power configuration.

### B. General Description

Suitable composite stereo, S.C.A., R.B.D.S., or S.A.P. signals can be applied to the input jacks of the CMP-300. As supplied from the factory, the unit is configured to provide a balanced 47Kohm bridging input. If it is desired to unbalance the input see initial configuration under part III, installation instructions. All three rear panel outputs of the DA are configured to drive a 50-ohm cable.

Adjustments for input gain and individual output level can be accomplished from the front panel. Power indication is also provided on the front panel.

## II. Specifications

Input Impedance:	47K ohm balanced/unbalanced selectable
Output Impedance:	50 ohms unbalanced
Maximum Output level:	10 Volts Peak to Peak into 50 ohms
Gain:	6 dB (variable)
Frequency Response:	Better than +/- 0.05 dB from 20 Hz to 100 kHz
Total Harmonic Distortion:	Better than 0.05% into 50 ohms
Inter - Modulation Distortion:	Better than 0.05% S.M.P.T.E. 4:1
System Noise:	Better than 80 dB below 4 Volts Peak to Peak
Input Connector:	Isolated B.N.C.'s (3)
Output Connector:	B.N.C. (3 )
Power Requirements:	120/240 Volts A.C. 50 - 60 Hertz
Operating Temperature Range:	0 - 60° Celsius
Physical Dimensions:	1.75 H X 19 W X 10 D (inches)

### **III. Installation**

#### **A. Initial Configuration**

Before installing the unit it is a good idea to decide whether or not the unit will operate balanced or unbalanced at its input. Generally, to avoid ground loops between equipment it is advisable to operate the unit in the balanced configuration. If for some reason it is desired to operate the unit unbalanced simply push down the appropriate rear panel unbalance switch. The up position of these switches is for balanced operation and is the normal factory default.

The unit as configured from the factory is set to accept 120 Volts A.C. 60 Hertz electrical power. To change the power setting first remove the power cord from the power entry connector. Slide the plastic cover to the left and with a pair of long nosed pliers carefully remove the power select p.c. board from the power entry module. Select the desired power configuration by placing the power entry p.c. board back into the module so that the desired power setting can be read from left to right.

#### **B. Location and Hookup Considerations**

Locate the CMP-300 in a 19-inch E.I.A. standard rack enclosure in close proximity to the equipment that it is going to interface between. Allow sufficient airflow space between equipment to allow for proper cooling. It is important that the cables being fed from composite sources such as stereo generators and STL receivers be kept as short as is practical. The CMP-300 can drive lines as long as 100 feet with no degradation of signals. It is advisable to keep all cable lengths as short as possible to prevent stray R.F. pick up.

#### **C. Composite Connections and Adjustments**

Make all desired input and output connections to your external equipment. Make sure that the CMP-300 is plugged in to a properly grounded A.C. receptacle. If possible, interrupt the audio feeding the CMP-300 and measure the signal to noise ratio with a suitable voltmeter. If the noise measurement obtained is acceptable you can proceed to the final adjustment of the unit. If the noise is high there may be stray R.F. pick up or a ground loop. It is a good idea to listen to the system with a suitable audio monitor to determine the source of the noise. Hum is a common noise present. If hum is present, start by removing one cable at a time to determine the source of the ground loop. If the hum disappears or changes level when a cable is disconnected, a loop exists between the CMP-300 and the equipment at the other end of the cable removed. This will generally not happen with an input unless the unit has been configured for unbalanced operation. If this is the case, try the balanced input mode of operation. If a ground loop is present between the CMP-300 and an exciter or STL, feed the CMP-300 to a balanced input. Most modern exciters accommodate balanced cables.

The CMP-300 has provision to adjust input and output levels independently. There is enough adjustment latitude to increase input gain or output level if required. The unit is adjusted at the factory to produce unity gain. Adjustments can be made as necessary to provide the proper amount of level to the loads connected to the outputs. Each input is adjusted to provide unity gain output at the factory. If not all inputs are used, turn down the input level of unused inputs to minimize noise and stray pickup.

#### IV. Warranty

## Broadcast Devices, Inc. Limited Product Warranty

Broadcast Devices, Inc. ("BDI") products are warranted against failure due to faulty materials or workmanship for a period of one (1) year from the date of shipment to the ultimate user. The warranty covers repair or replacement of defective parts at the factory, provided the unit has been returned prepaid by the user. All shipments to the factory shall have a Returned Material Authorization (RMA) number affixed to the outside of the container, obtained from the factory. The above warranty is void if the unit has been modified by the user outside any factory recommendations or if the unit has been abused or operated outside its electrical or environmental specifications. If customer conducted field tests suggest that the unit may be faulty, whether the unit is in warranty, a full report of the difficulty should be sent to the Broadcast Devices, Inc. factory. The factory may suggest further tests or authorize a return for factory evaluation.

Units sent to the factory should be well-packed and shipped to Broadcast Devices, Inc. The current shipping address can be found by visiting our main web page: [www.broadcast-devices.com](http://www.broadcast-devices.com). Remember to affix the RMA number to the outside of the carton. Any packages received without such an RMA number will be refused. Note: Freight collect shipments will also be refused. When the unit has been received, inspected, and tested, the customer will receive a report of the findings along with a quotation for recommended repairs that fall outside the standard warranty. Units returned for in-warranty repairs that are found not to be defective will be subject to an evaluation and handling charge. In-warranty units will be repaired at no charge and returned via prepaid freight.

Out-of-warranty units needing repair require a purchase order and will be invoiced for parts, labor, and shipping charges.

When ordering a replacement part, contact any authorized reseller of Broadcast Devices, Inc. Always specify A) Part Description, and Quantity; B) Date of Purchase, Where Purchased; C) Any Special Shipping Instructions. Always specify a street address, as shipping companies cannot deliver to a postal box.

BDI. is not responsible for any other manufacturer's warranty on original equipment. Nor are we responsible for any failure, damage, or loss of property resulting from the installation or operation of our equipment outside the recommended specifications.

Broadcast Devices, Inc. reserves the right to change materials, specifications, and features at any time.

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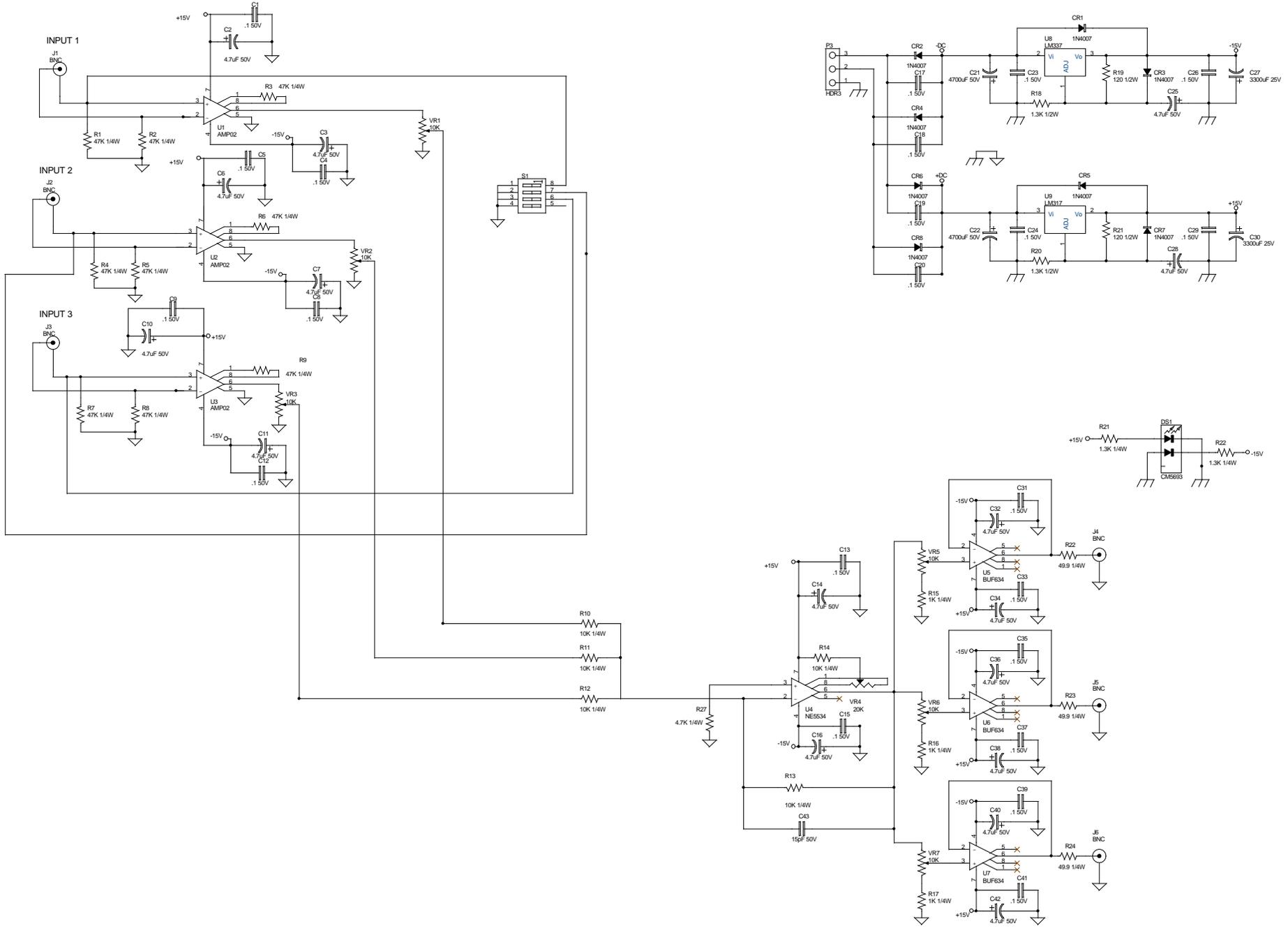
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## V. Schematic Diagram



<b>Broadcast Devices, Inc.</b>			
<b>CMP-300 MAIN BOARD</b>			
File	Document Number	Rev	B
Size			
Date	Tuesday, September 28, 2004	Sheet	1 of 1