



Broadcast Devices, Inc.

***CDS-200* Composite Distribution Amplifier/Switcher**

TECHNICAL REFERENCE MANUAL

Broadcast Devices, Inc.
5 Crestview Avenue
Cortlandt Manor, NY 10567
Tel. (914) 737-5032
Fax. (914) 736-6916

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I. INTRODUCTION

The CDS-200 Composite Distribution Amplifier/Switcher is intended to be used in conjunction with suitable FM or TV stereo generators and/or composite STLs in order to switch between two composite sources and distribute them up to three ways. The typical configuration would be to accept two composite sources main/alternate STL, or main/alternate processing gear and distribute them to a main/alternate transmitter configuration. A third output is available for test or to drive a third transmitter. A test jack (bridged from the third output) is also provided at the front of the unit for use with an oscilloscope or voltmeter.

A. Unpacking and Inspection

Carefully unpack the unit after receipt and inspect for any possible damage caused in shipping. If damage is noted, contact 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 that all mechanical parts are secure.

B. General Description

Switching between the two switcher inputs is accomplished at the front panel via pushbutton switches or via a momentary ground applied to the appropriate remote control pins at the rear of the unit. Front panel status is provided by LEDs and by dry relay contacts for remote indication.

The two inputs to the composite switcher/DA can be user configured to be balanced or unbalanced. In addition, the input to the DA can offer a bridging or 50 ohm termination by jumper selection on the DA circuit board. All DA outputs are factory configured to provide a 50 ohm output. The exception to this is the front panel test jack which is a high impedance output. All composite connections to the unit are made via BNC connectors and the remote/status connections are made via a "D" type connector at the rear of the unit.

II. SPECIFICATIONS

Input Impedance:	10K or 50 ohm selectable
Output Impedance:	50 ohms
Maximum Output Level:	4Volts P-P into 50 ohms
Gain:	+6dB max (variable)
Frequency Response:	Better than +/- .05 db from 20 Hz to 100 Khz
Total Harmonic Distortion:	Better than .05% into 50 Ohms
Intermodulation Distortion:	Better than .05% 4/1 SMPTE
Noise:	Better than 80 db at max out
Input Connectors:	Isolated BNC (2 rear)
Output Connectors:	Standard BNC (3 rear, 1 front test)
Remote Connector:	DE-9S (Female 9 pin "D" type)
Operating Temperature Range:	0 - 60° C

III. INSTALLATION

A. Initial Configuration

Before installing the unit you should decide whether or not the unit will operate with a balanced or unbalanced input and whether or not the input will be 10K bridging or a 50 ohm termination. Generally, to avoid ground loops between equipment it is advisable to operate the unit in the balanced configuration. To accomplish this, remove J2 from the amplifier circuit board. **AN ALTERNATE METHOD OFTEN USED IS TO LIFT THE AC RECEPTACLE GROUND. WE DO NOT RECOMMEND THIS! TO MAINTAIN THE HIGHEST DEGREE OF SAFETY WE RECOMMEND THAT THE AC GROUND BE LEFT IN PLACE.** As supplied from the factory, the CDS-200 is set up for unbalanced, 10K ohm termination. If you are using a cable of a different impedance such as 75 ohms and desire termination, it will be necessary to replace R18 on the amplifier board with a 75 ohm resistor.

B. Location and Hookup Considerations

Locate the CDS-200 in a 19" EIA standard rack in close proximity to the equipment that will be connected to it. Allow sufficient air space between equipment to allow for proper cooling. It is important that the cables fed from composite sources such as stereo generators and STLs to the CDS-200 be kept short as most of this type of equipment is not designed to feed long capacitive lines. The CDS-200 itself can drive up to 25 foot cables with no degradation of the signal. It is advisable however to keep the output cable from the CDS-200 as short as is practical.

C. Composite Connections and Adjustments

Make all desired input and output connections to your external equipment. Because the CDS-200 has a power loss feed through feature, it is recommended that the main transmitter be connected to output #1. Output #1 will be fed directly from whichever input was selected last in the event of a power failure to the unit. This insures signal at output #1 regardless of power. When power is restored, the CDS-200 "remembers" which input was selected last and stays in that input configuration unless commanded to change from the front panel or remote control connection. Make sure that the CDS-200 is plugged into a properly grounded A.C. receptacle. If possible, interrupt the audio signal and measure the signal to noise ratio of the system with the CDS-200 connected. If the noise figure obtained is satisfactory you can proceed with final adjustment. If the noise is high, it may be an indication of a ground loop. Listen to the system through a suitable monitor. If a ground loop exists, a 60 hertz hum will be evident. If a 60 hertz hum is detected, remove one cable at a time from the unit until the hum disappears or changes in level. If the hum changes when an input cable is removed, try using the balanced input configuration by removing J2, if installed. If the hum disappears or changes when an output is disconnected, it may be necessary to feed that output into a following balanced input. Most modern exciters feature a balanced input. If the exciter being fed has no balanced input, run an additional heavy ground wire between the CDS-200 chassis and the chassis of the exciter in question.

As shipped from the factory, the CDS-200 is adjusted to produce unity gain from input to any of the three outputs. It may be necessary to adjust levels as exciters can require different levels. In the common main/alt. configuration, check the level presented to both exciters with a suitable modulation/stereo monitor. If the level to both exciters is too high or low when the CDS-200 has been connected, it is recommended that you adjust the "INPUT ADJUST" control of the DA to obtain a coarse adjustment. Final adjustment to each exciter can then be made using the output adjusts corresponding to each output. A good way to adjust the levels is to observe the 19 Kilohertz pilot injection level so that the pilot level matches on both exciters. If the level is too high or low on just one of the exciters, adjust the appropriate output control on the CDS-200 front panel. The CDS-200 is capable of producing a gain of 6 db to overcome losses from cables feeding the inputs of the CDS-200. This should be more than sufficient gain to overcome losses in input cables.

D. Remote Control

The CDS-200 is fully remote controllable via the rear panel 9 pin DE connector. In addition to remote switching control there are three status outputs available as well as chassis ground. The control pins (3 and 4) are ground start and only require a momentary connection to ground to switch composite inputs to the DA input. The status pins (7 and 8) are dry isolated contacts that provide a closure to a status common pin (6) that can be user configurable for either voltage or ground status. The status contacts are rated at 24 VDC/2 amps. Do not attempt to use 110 VAC for status indications without additional external relays. The contacts of the status relay are not sufficiently rated and the signals will be subjected to a 60 hertz hum field. The third status appears on pin 5. This is a power fail indicator status - when the unit is powered on pin 5 will have a maintained connection to ground. When power to the unit fails this ground will be lifted. All these status and control signals are fully compatible with most modern remote control telemetry systems. The table below shows the remote pinout configuration:

TABLE 1 : Remote Control Pinout

PIN	FUNCTION
1	+15 VDC (200 ma MAX)
2	No Connection
3	Control #1
4	Control #2
5	Status Power ON
6	Status Common
7	Status #1
8	Status #2
9	Ground

IV. WARRANTY

Broadcast Devices, Inc. products are warranted against failure due to faulty materials or workmanship for a period of one year from 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, under a return authorization number formally obtained from the factory. The above warranty is void if the unit has been modified by the customer outside of recommendations from the factory, or if it has been abused or operated outside of its electrical or environmental specifications. If the customer conducted field tests suggest that the unit may be faulty, whether in or out of warranty period, a full report of the difficulty should be sent to the Broadcast Devices, Inc. factory at Peekskill, New York. The office may then suggest further helpful field tests, or authorize return for evaluation at the factory.

Units sent for factory inspection should be well packed and shipped direct to the Broadcast Devices, Inc. factory at 5 Crestview Avenue, Peekskill, New York, 10566. The return authorization number must appear on the outside of the shipping container, otherwise the unit will not be accepted. **Note:** freight collect shipments will be refused. When the unit has been received, inspected, and tested, the customer will receive a report on the findings along with a quotation on any recommended repairs falling outside the standard warranty. Units returned for in-warranty repairs which are found to be not defective, will be subject to an inspection and handling charge. In-warranty units found to be the responsibility of Broadcast Devices, Inc. will be repaired and returned prepaid and free of charge. Also at that time, a credit will be issued for the incoming freight charges.

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

When ordering replacement parts, always specify A) Part Number, Description, and Quantity; B) Date of Purchase, Where Purchased; C) Any Special Shipping Instructions

Broadcast Devices, Inc. is not responsible for any other manufacturer's warranty on original equipment. Nor are we responsible for any failure, damage, or loss of property that may occur due to an installation or operation of our equipment outside of its recommended specifications and use.

V. SCHEMATIC DIAGRAMS

Simplified Block Diagram
Composite Amplifier Board (SDA-200)
Power Supply (RPS-300)
Composite Switching/Input Board (CDR-200)

SIMPLIFIED BLOCK DIAGRAM - CDS-200 COMPOSITE AUDIO SWITCHER/DA

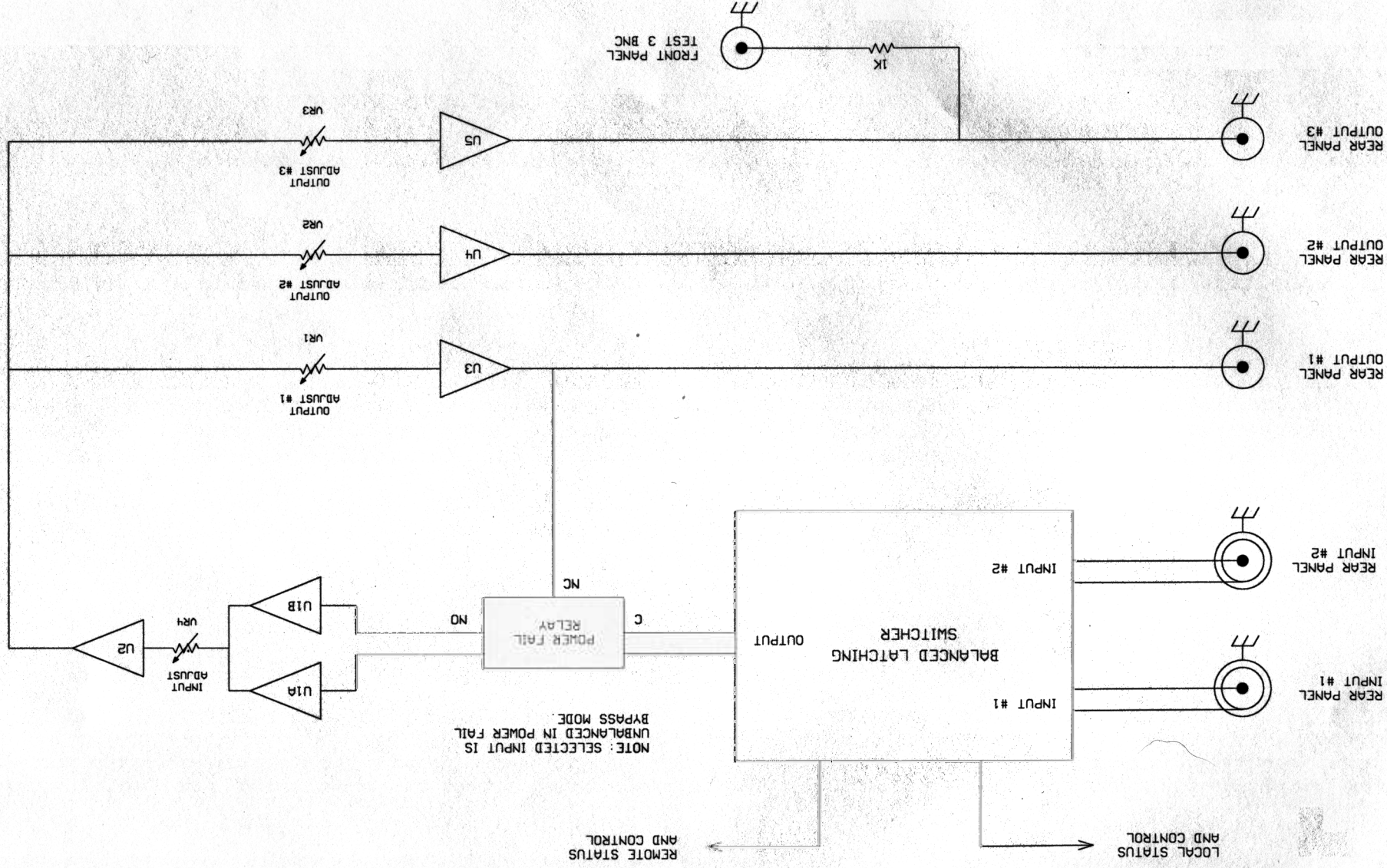
CDSBRLKDMC
DWG NO

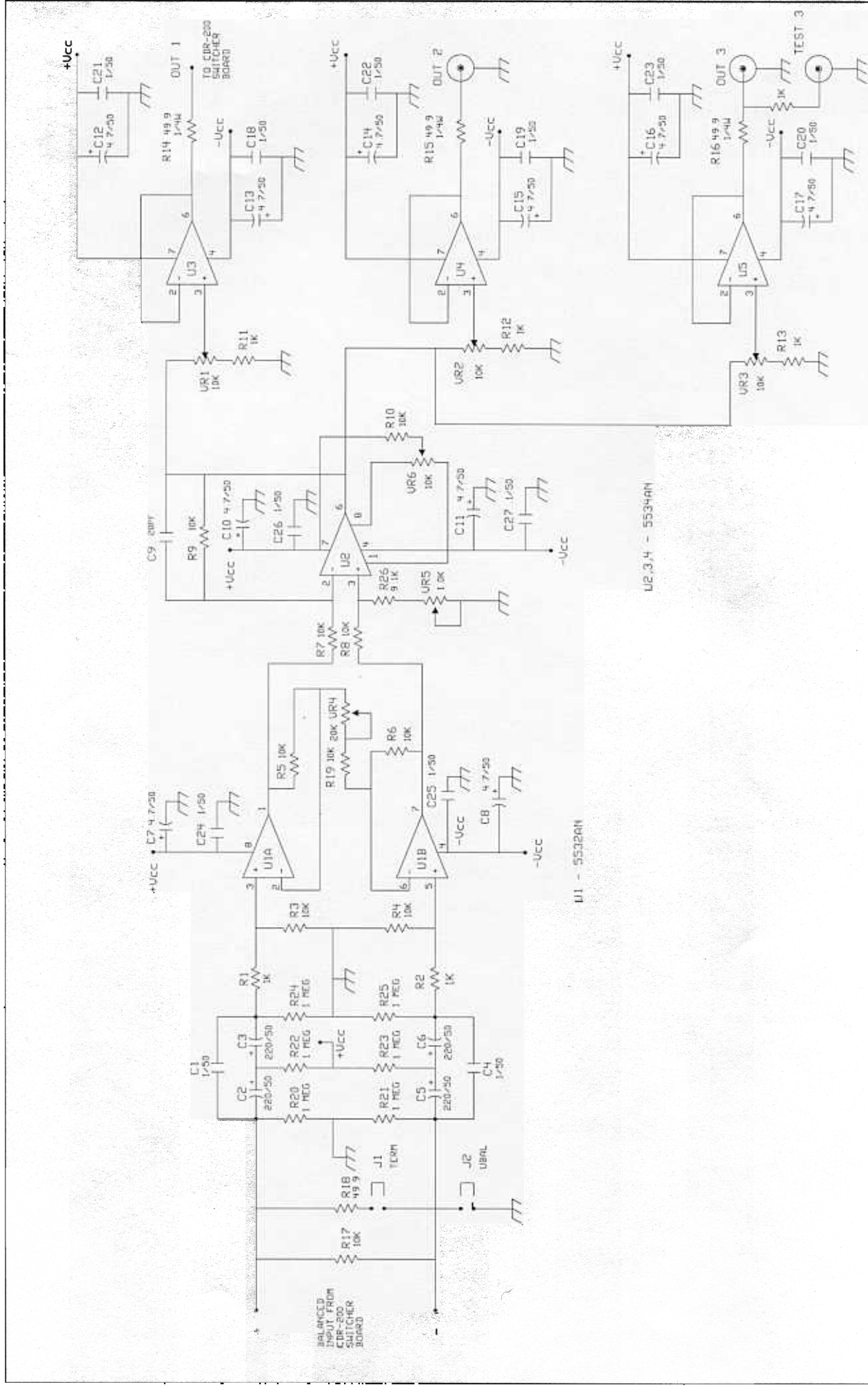
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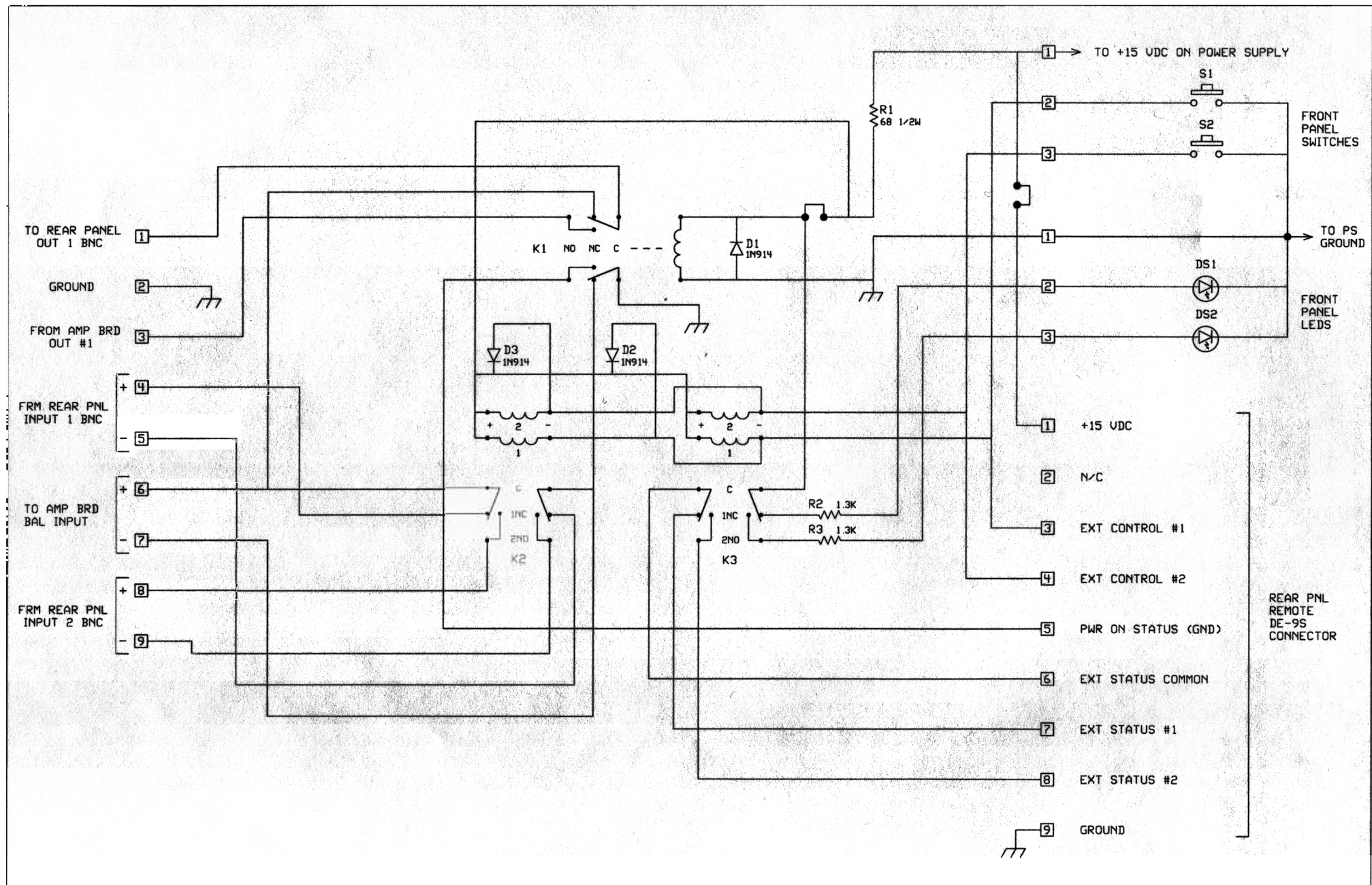
APPROVALS
DATE

BROADCAST DEVICES, INC.
PEEKSKILL, NEW YORK





COMPOSITE DISTRIBUTION AMPLIFIER BOARD				INC	
DWG NO	REV	APPROVALS	DATE		
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			8/24/92		



CDR-200 COMPOSITE SWITCHING/INPUT BOARD

DWG NO

CDR-200-C3

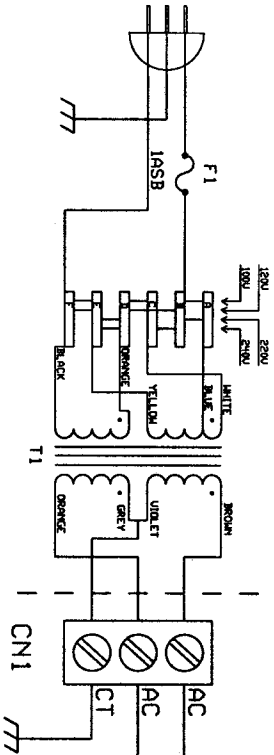
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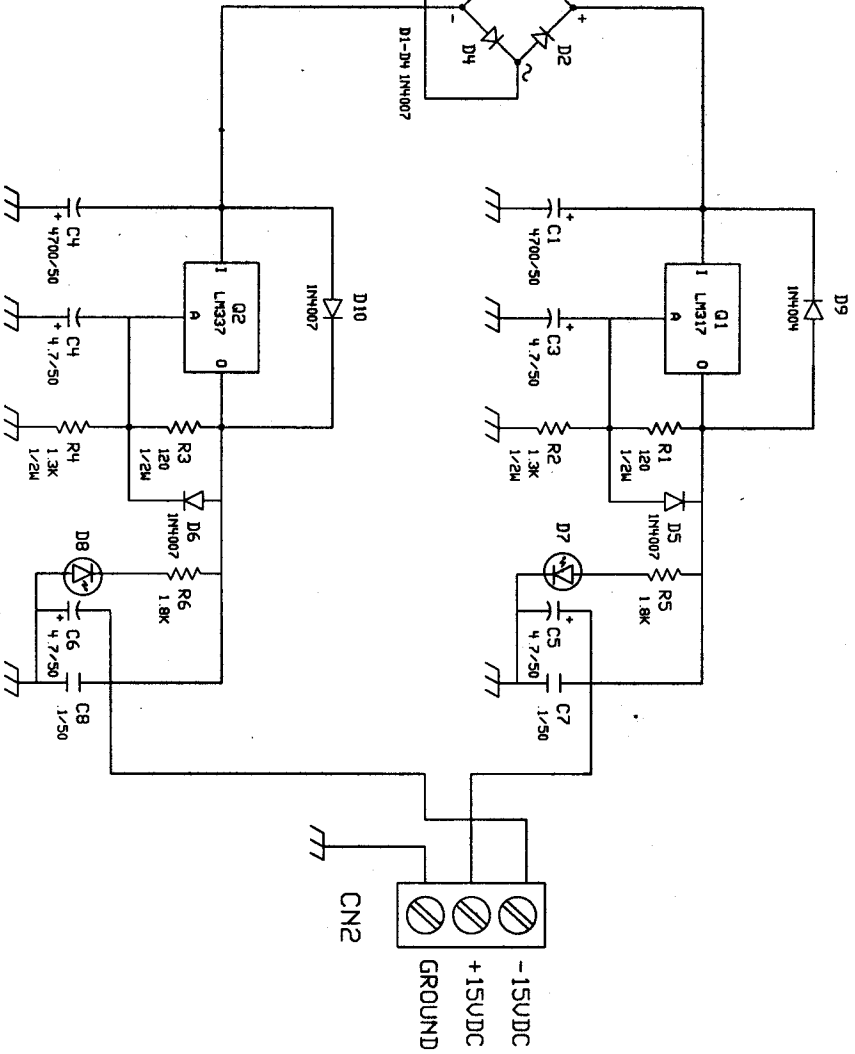
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11/6/97

BROADCAST DEVICES, INC
PEEKSKILL, NEW YORK



PRI
100/110/220/240VAC
SEC
30V CENTERTAPPED



RPS-300 BIPOLAR POWER SUPPLY

DWG NO	REV	APPROVALS		DATE
RPS-300B-C2	D	Drawn		02/21/92
		Checked		02/24/92
		Revised		02/19/96
		PGT		

Broadcast Devices, Inc
PEEKSKILL, NY