

# **RADIO SYSTEMS**

5113 WEST CHESTER PIKE • EDGEMONT, PA 19028 • 215/356-4700

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## DCX PACKAGING

- I. Each circuit board should be shipped in a plastic bag with (except internal power supply) :
  - 1 - The circuit board.
  - 2 - 4 Screws.
  - 3 - Front label.
  - 4 - Back label.
  - 5 - Manual (2 pages stapled) (3 pages for tt controller)
  
- II. Each universal box should be shipped with :
  - 1 - 2 Black labels taped to the inside.
  - 2 - 4 Sheet metal screws
  
- III. Each external power supply should be shipped with:
  - 1 - Manual (2 pages, stapled)
  
- IV. Each internal power supply board should be shipped with:
  - 1 - The circuit board.
  - 2 - 4 Screws.
  - 3 - Front label.
  - 4 - Rear label.
  - 5 - Manual (2 pages, stapled)
  - 6 - DC jumper cord (spade-lugs each end)
  - 7 - AC cord (spade lugs - one end)
  - 8 - Internal strain relief



# The DCX Network INTERNAL From Radio Systems POWER SUPPLY

The DCX series from Radio Systems offers quality professional broadcast electronics in a low cost modular package.

DCX boards are available separately and may be powered by a common, external DC power supply. This results in reductions in costs, noise levels, and package size.

DCX units come pre-assembled, factory tested, and ready for mounting in the DCX universal enclosure. Each enclosure will accommodate two DCX circuit boards. Boards can be intermixed to create a variety of functional combinations, or a single board can be combined with an internal power supply to create a stand-alone unit.

## Assembly

- Tilt board forward and insert controls through front panel holes, lower rear of board into enclosure.
- Reposition circuit board to align mounting holes.
- Insert and tighten mounting screws.
- Punch out label holes and affix front and rear panel labels. Front labels can be re-positioned if removed quickly, but adhere permanently after several hours.
- Install second board - if the slot is not used, black labels are supplied to cover unused front and rear panel holes.
- Mount knobs on shafts (for DC-HP and DC-PW).
- Install cover (4 screws). If the unit is to be surface mounted, the cover must be installed after mounting.

## Wiring

- Use of spade lugs is recommended.
- Connect the DC power terminals +, -, G, to the regulated 18v +/- supply. If the DC-PS18I internal supply is used, jumper leads are enclosed for this purpose.
- DCX boards utilize balanced inputs and outputs where appropriate. When connecting an unbalanced input line, use the DC "+" and "G" terminals and tie the unused "-" terminal to ground. When connecting an unbalanced output line, use the DC "+" and "G" terminals and leave the "-" terminal unconnected.

## Utilizing the Internal Power Supply

- Install the model DC-PS18W internal power supply in the right hand side of the universal cabinet and label the box as described above.
- Remove the hole plug in the rear upper left of the cabinet and insert the power cord.
- Wire the two AC space lugs to the two red screws closer to the front of the circuit board. The rear screw terminal is provided for ground.
- Crimp the strain relief around the cord firmly and insert into the hole until it clicks in place.

## Warranty

Radio Systems warrants for one year from date of purchase, parts and labor on any unit returned to us for repair. Before a unit can be returned, a return authorization number must be obtained from Radio Systems. Repair and return of the unit will be made promptly. Within the warranty period, there is no charge for this service on units which show no sign of misuse or unauthorized alterations.

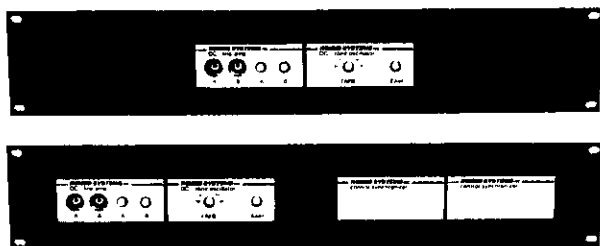
# DCX PRODUCTS - SPECIFICATIONS

DCX Circuitboard	Model Number	Input Imp (in ohms)	Max. Output Level	THD (Note 1)	Signal/Noise (Note 2)	Channel Separation	Power Consumption (Note 3)	Configuration
5 Mic Pre-amp	DC-5MA	150	+26 dbm	.02%	-97 db	>97 db	7 watts	5 ch.
Phono Pre-amp	DC-PA	47K	+22 dbm	.05%	-70 db	>70 db	2.5 watts	dual/stereo
Line Amp	DC-LA/F DC-LA/S	47K	+25 dbm	.02%	-80 db	>80 db	2.5 watts	dual/stereo
Mic Pre-amp	DC-MA	150	+25 dbm	.03%	-80 db	>80 db	2.5 watts	dual
Headphone	DC-HP	20K	$\frac{1}{2}$ watt (10 v RMS high Z)	.01%	-90 db	>90 db	6.5 watts	2 ch.-stereo
Power Amp	DC-PW	20K	12 watts	.02%	-80 db	—	18 watts	mono
Oscillator	DC-OS	—	+24 dbm	.05%	—	—	1.5 watts	one channel
Synchronizers	DC-TTS DC-TAS	—	—	—	—	—	self powered 1 watt	single

**NOTE 1:** THD is measured at maximum output before clipping into 600 ohms (8 ohms for the power and headphone amps).

**NOTE 2:** Signal to noise measured A weighted, input terminated (where applicable), relative to maximum output. Noise is degraded by approximately 6 db with use of internal power supply.

**NOTE 3:** Add power consumption of boards to determine the total number which can be utilized with a common power supply. Internal supply provides 18 watts. External supply provides 36 watts.



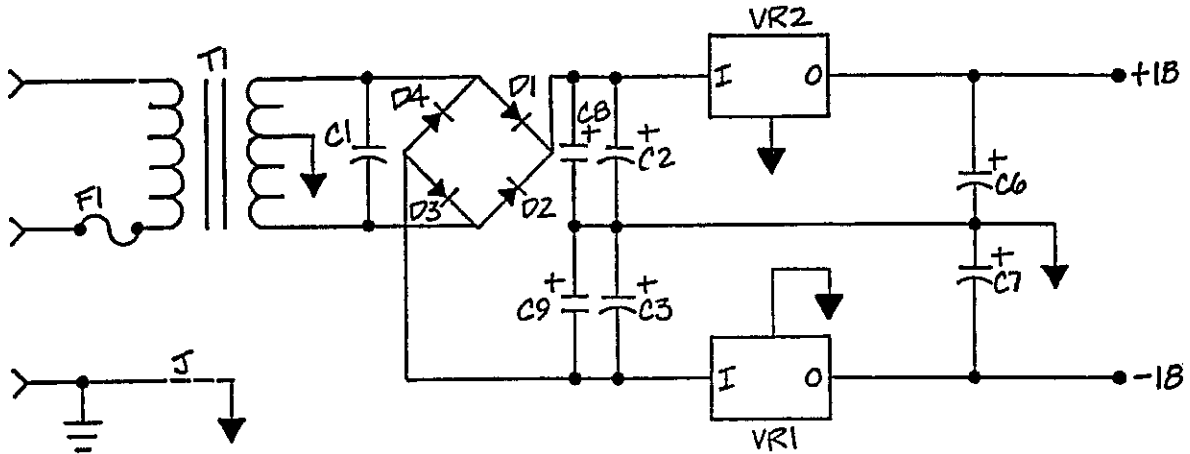
**DCX Rack Mount Model DC-RK1**  
**DCX Dual Rack Mount Model DC-RK2**  
**Dimensions: 3½" H x 19" W**



**DCX Universal Cabinet Model DC-CBU**  
**Dimensions: 1⅞" H x 7¾" W x 6¼" D**



**DCX Power Supply - External Model DC-PS36X**  
**DCX Power Supply - Internal Model DC-PS18I (not shown)**  
**Dimensions: 1¼" H x 3⅝" W x 5¾" D**



DCX Internal Power Supply

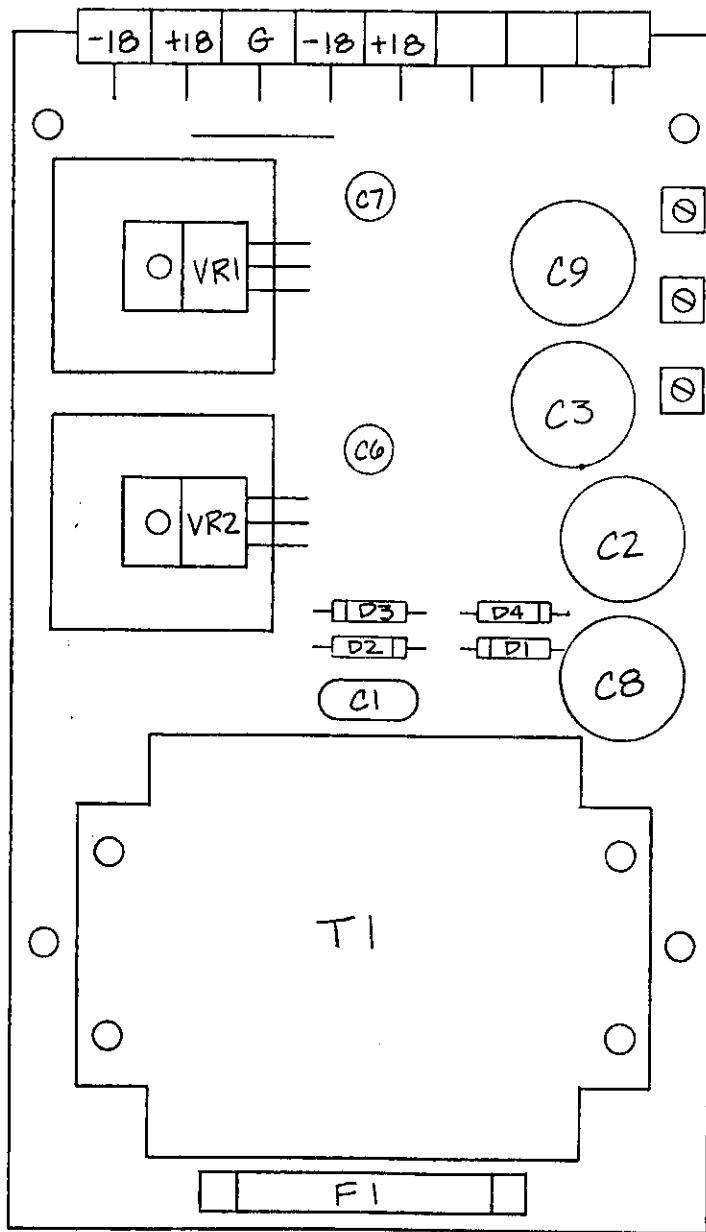
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PAGE 1 ASSY# 3051 RS DCX INTERNAL POWER SUPPLY 01 OCT 1987

REF-DES. .... DESC. .... PART# QTY. UM

	TERMINAL BLOCK 8 PIN	1003	1 EA
	CLIP FUSE	1074	2 EA
	SCREW 6-32 3/8 PANHEAD	1091	2 EA
	WASHER LOCK #6	1093	6 EA
	HEAT SINK AAVID 5750B	1134	2 EA
	SCREW PANHEAD 6-32X1/4	1157	4 EA
	NUT SM PT 6-32	1159	2 EA
	CORD 18/2 PVT1 BROWN	2959	1 EA
	STRAIN RELIEF 822	2960	1 EA
	PCB RSM PSM-B DCX INT. PWR SUP	3052	1 EA
	LABEL DCX FRONT	3147	1 EA
	LABEL DCX REAR	3148	1 EA
	BAG ZIPLOCK 6X8	3149	1 EA
	BAG ZIPLOCK 3 X 4	3150	2 EA
	DCX JUMPER	3151	1 EA
	FORK TERMINAL RED	3152	2 EA
	SCREW TERMINAL PC MOUNT #1478	3153	3 EA
C1	CAP .1 UF MYLAR	1013	1 EA
C2;C3;C8;C9	CAP 1000 UF 35V POL.	1080	4 EA
C6;C7	CAP 15 UF POL 35V	1026	2 EA
D1-D4	DIODE 1N4004	1020	4 EA
F1	FUSE 1/4 AMP SLO BLD	1083	1 EA
T1	TRANSFORMER PF12-34	3053	1 EA
VR1	VR MC7918CT	7070	1 EA
VR2	VR MC7818CT	7069	1 EA

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DCX Internal Power Supply

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# The DCX Network From Radio Systems

PHONO PRE

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- Install the model DC-PS18W internal power supply in the right hand side of the universal cabinet and label the box as described above.
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DCX Circuitboard	Model Number	Input Imp (in ohms)	Max. Output Level	THD (Note 1)	Signal/Noise (Note 2)	Channel Separation	Power Consumption (Note 3)	Configuration
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Line Amp	DC-LA/F DC-LA/S	47K	+25 dbm	.02%	-80 db	>80 db	2.5 watts	dual/stereo
Mic Pre-amp	DC-MA	150	+25 dbm	.03%	-80 db	>80 db	2.5 watts	dual
Headphone	DC-HP	20K	½ watt (10 v RMS high Z)	.01%	-90 db	>90 db	6.5 watts	2 ch.-stereo
Power Amp	DC-PW	20K	12 watts	.02%	-80 db	—	18 watts	mono
Oscillator	DC-OS	—	+24 dbm	.05%	—	—	1.5 watts	one channel
Synchronizers	DC-TTS DC-TAS	—	—	—	—	—	self powered 1 watt	single

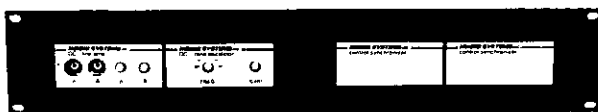
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**DCX Rack Mount Model DC-RK1**  
**DCX Dual Rack Mount Model DC-RK2**  
**Dimensions: 3½" H x 19" W**



**DCX Universal Cabinet Model DC-CBU**  
**Dimensions: 1⅞" H x 7¾" W x 6¼" D**

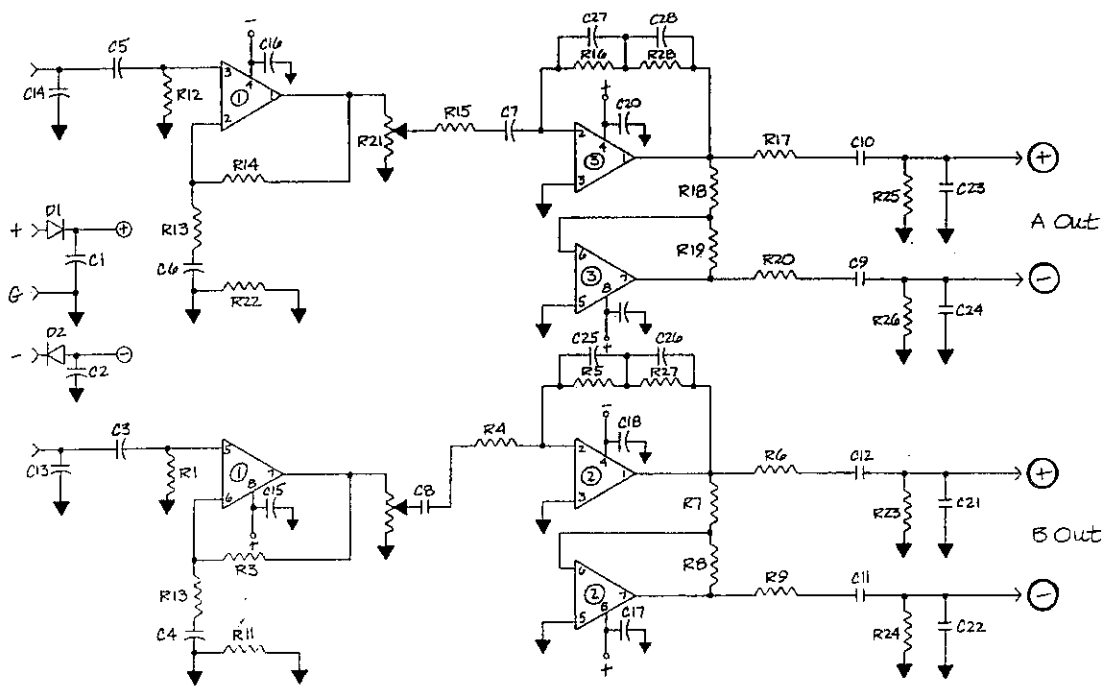


**DCX Power Supply—External Model DC-PS36X**  
**DCX Power Supply—Internal Model DC-PS18I (not shown)**  
**Dimensions: 1¾" H x 3⅝" W x 5¾" D**

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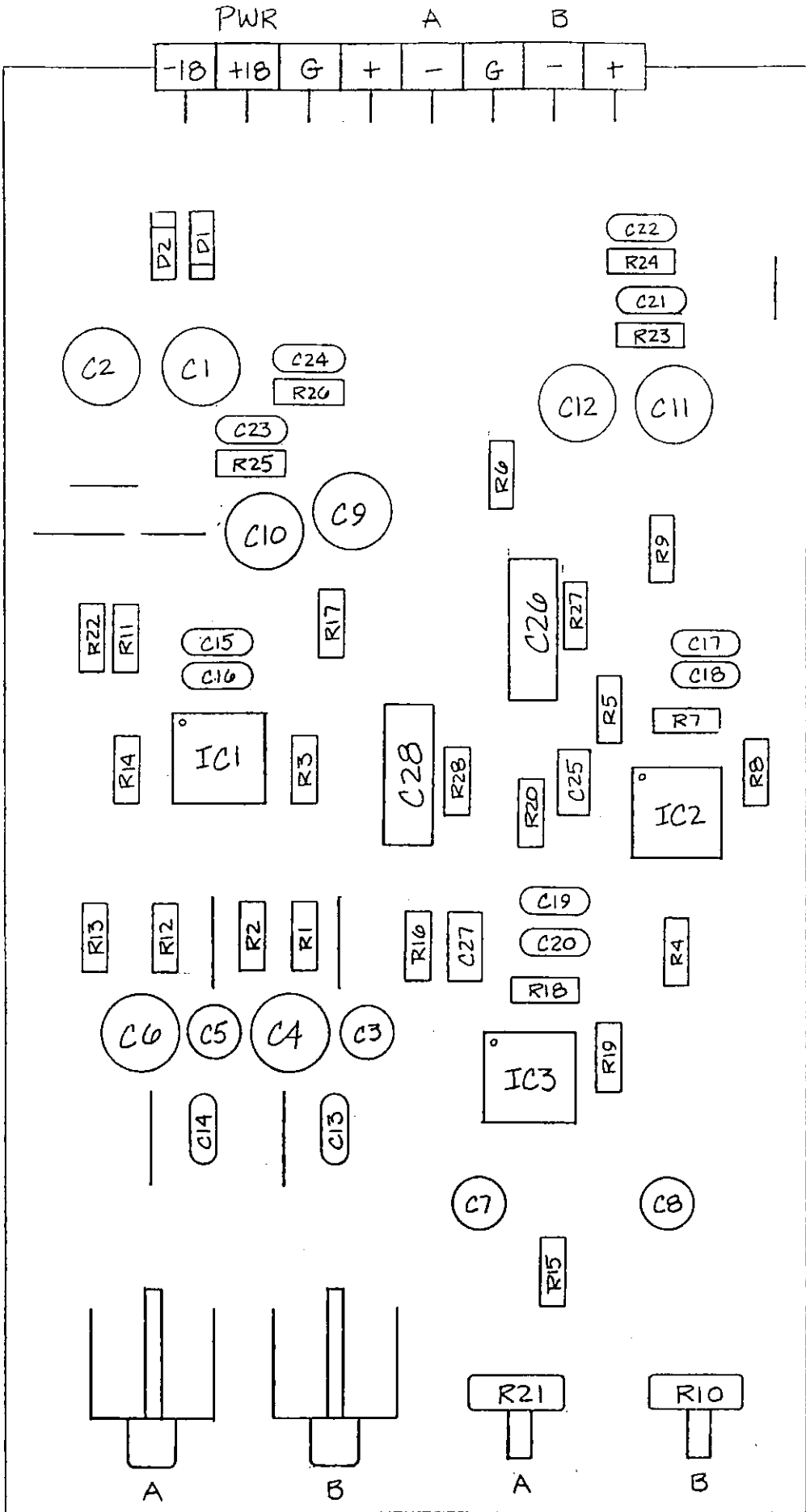
DCX Phono Preamp

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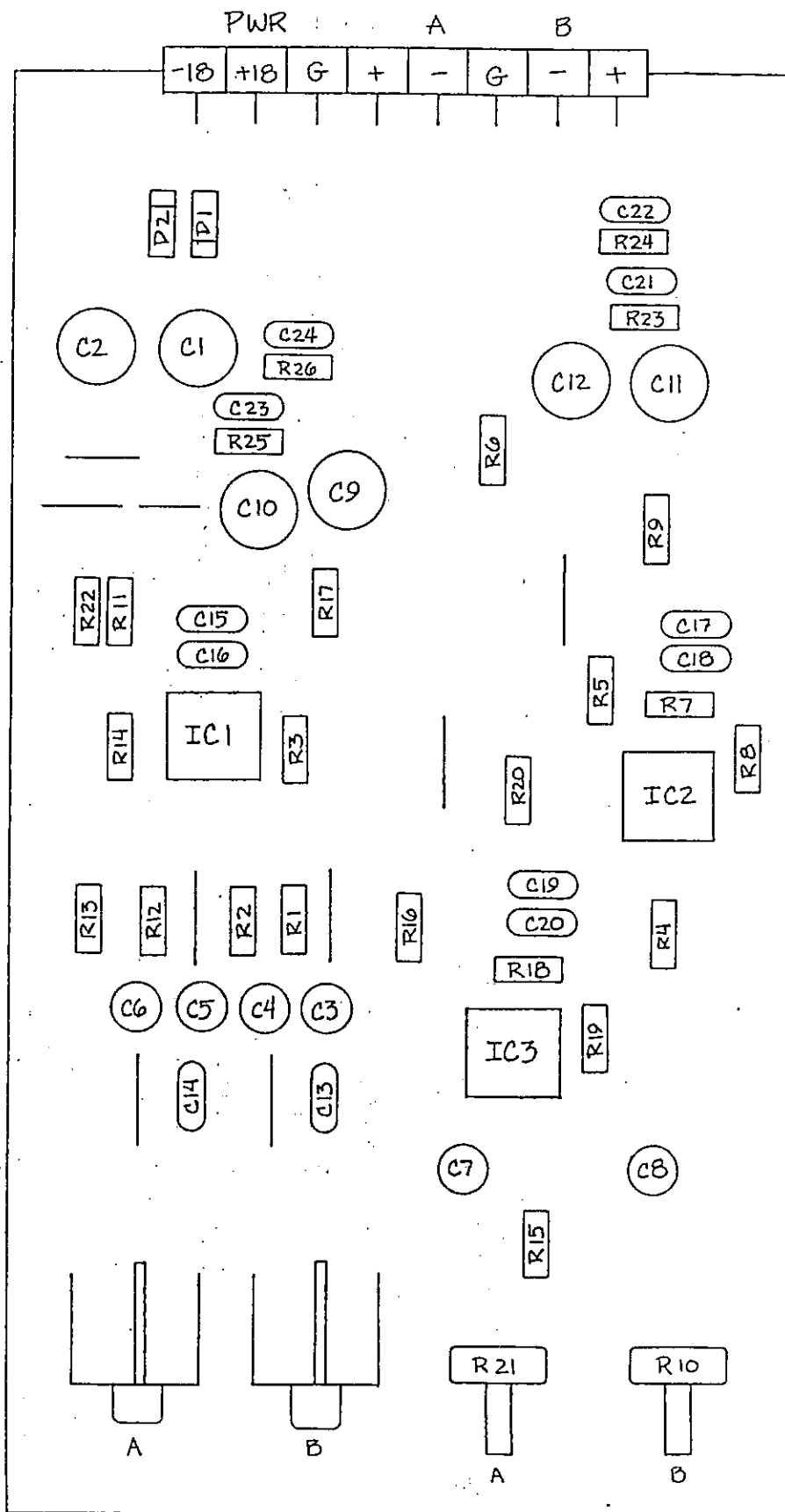
REF-DES. .... DESC. .... PART# QTY. UM

	TERMINAL BLOCK, 8 PIN	1003	1	EA
	SOCKET, 8 PIN	1011	3	EA
	WASHER, LOCK #6	1093	4	EA
	PCB, TRI AMP DCX RSM PRDC	1100	1	EA
	PHONO JACK, NTT333-15	1101	2	EA
	SCREW, PANHEAD 6-32X1/4	1157	4	EA
	RES, 47K 1/2W 5%	2827	2	EA
	LABEL, DCX FRONT	3147	1	EA
	LABEL, DCX REAR	3148	1	EA
	BAG, ZIPLOCK 6X8	3149	1	EA
	BAG, ZIPLOCK 3 X 4	3150	2	EA
C1-C2	CAP, 220 UF 25V POL.	1021	2	EA
C13;C14	CAP, 100 PF SILVER MICA	1102	2	EA
C15-C20	CAP, .1 UF MYLAR	1013	6	EA
C21-C24	CAP, .001 UF CERAMIC DISC	1103	4	EA
C25;C27	CAP, 1500 PF POLY	1046	2	EA
C26;C28	CAP, 5600 PF POLY	1112	2	EA
C3-C5	CAP, 2.2 UF 50V NP	2763	2	EA
C4;C6;C9-C12	CAP, 100 UF 16/25V NP	1049	6	EA
C7-C8	CAP, 10UF 25V NP	1014	2	EA
D1-D2	DIODE, 1N4004	1020	2	EA
IC1-IC3	IC, 5532	1010	3	EA
R10;R21	POT, 10K PT15WB	1105	2	EA
R11;R22	RES, 2.2 OHM 1/4W 5%	1104	2	EA
R2-R13	RES, 75 OHM 1/4W 1%	1140	2	EA
R27-R28	RES, 562K 1/4W 1%	1114	2	EA
R3;R14	RES, 2.2K, 1/4W, 5%	1016	2	EA
R4;R15	RES, 5.6K 1/4W 5%	1117	2	EA
R5;R16	RES, 49.9K 1/4W 1%	1113	2	EA
R6;R9;R17;R20	RES, 100 OHM 1/4W 5%	1033	4	EA
R7;R8;R18;R19;R23-R26	RES, 10K 1/4W 5%	1017	8	EA

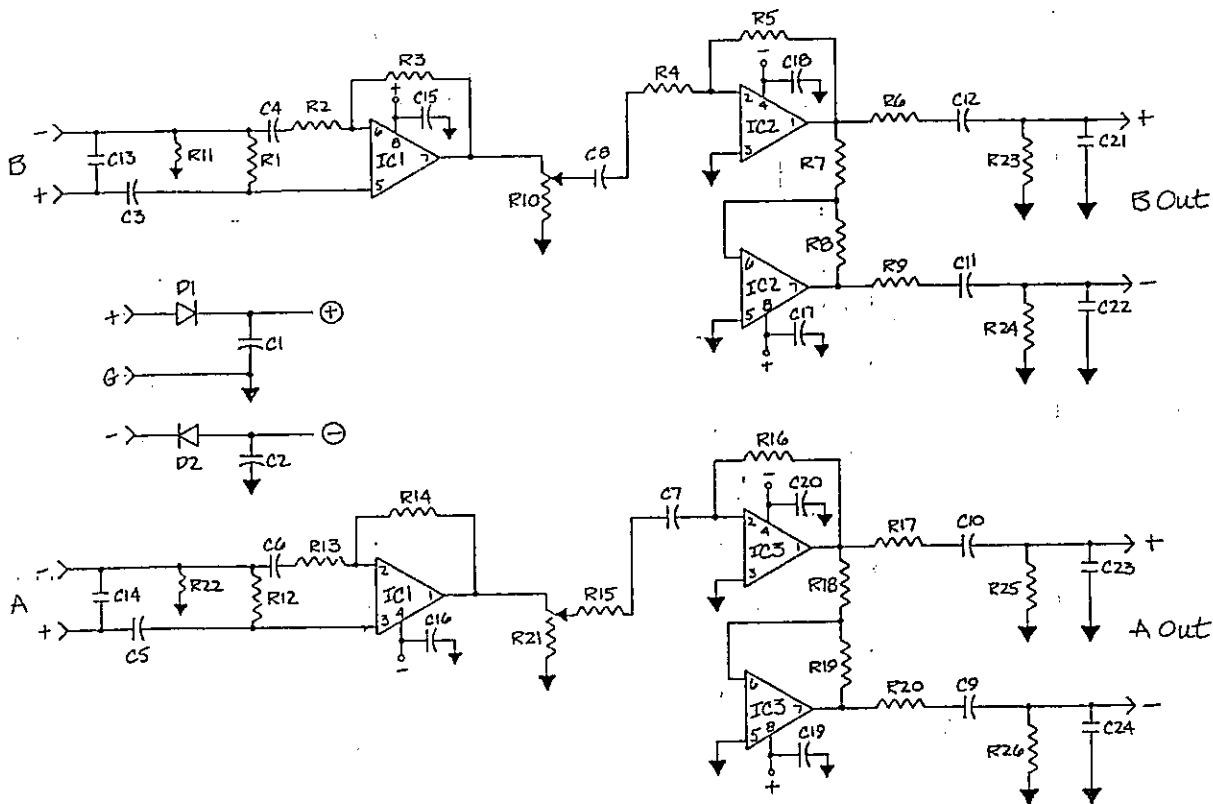
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DCX Phono Preamp



DCX Line Amp

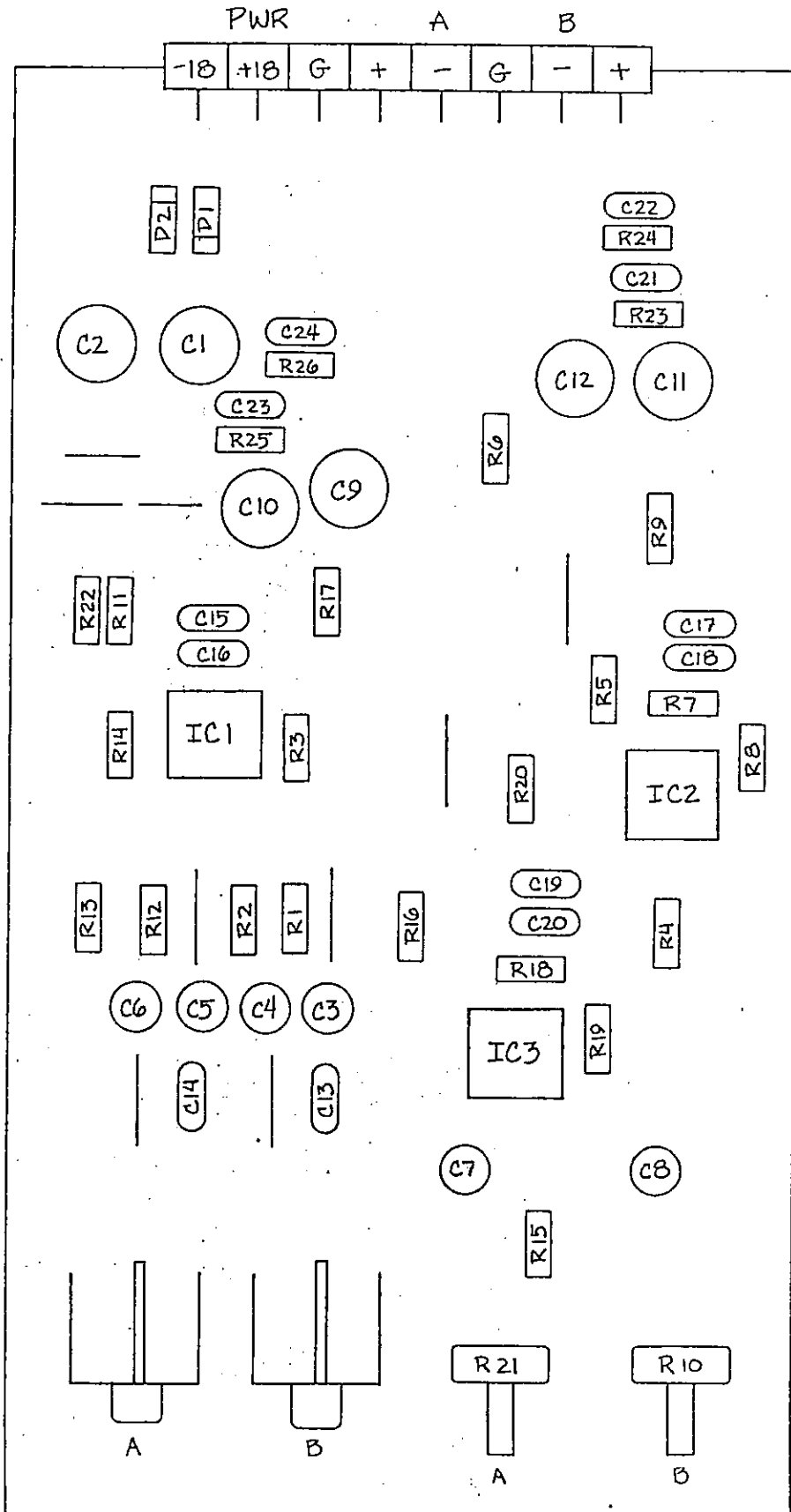


DCX Line Amp

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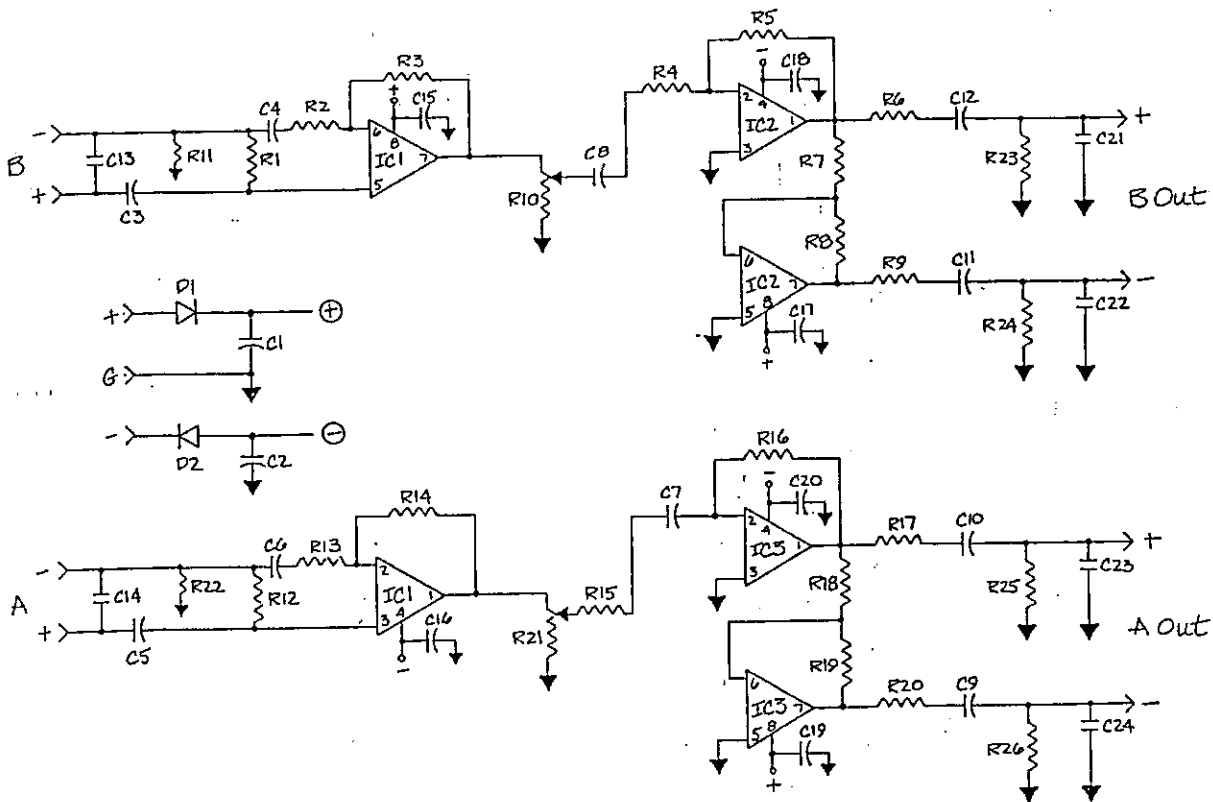
REF-DES.	DESC.	PART#	QTY.	UM
	TERMINAL BLOCK, 8 PIN	1003	1	EA
	SOCKET, 8 PIN	1011	3	EA
	WASHER, LOCK #6	1093	4	EA
	PCB, TRI AMP DCX RSM PRDC	1100	1	EA
	PHONO JACK, NTT333-15	1101	2	EA
	SCREW, PANHEAD 6-32X1/4	1157	4	EA
	RES, 47K 1/2W 5%	2827	2	EA
	LABEL, DCX FRONT	3147	1	EA
	LABEL, DCX REAR	3148	1	EA
	BAG, ZIPLOCK 6X8	3149	1	EA
	BAG, ZIPLOCK 3 X 4	3150	2	EA
C1-C2	CAP, 220 UF 25V POL.	1021	2	EA
C13-C14	CAP, 100 PF SILVER MICA	1102	3	EA
C15-C20	CAP, .1 UF MYLAR	1013	6	EA
C21-C24	CAP, .001 UF CERAMIC DISC	1103	4	EA
C3-C8	CAP, 10UF 25V NP	1014	6	EA
C9-C12	CAP, 100 UF 16/25V NP	1049	4	EA
D1-D2	DIODE, 1N4004	1020	2	EA
IC1-IC3	IC, 5532	1010	3	EA
R10-R21	POT, 10K PT15WB	1105	2	EA
R11;R22	RES, 2.2 OHM 1/4W 5%	1104	2	EA
R2-R3;R13-R14	RES, 2.2K, 1/4W, 5%	1016	4	EA
R4;R7;R8;R15;R18;R19;R23-R26	RES, 10K 1/4W 5%	1017	10	EA
R5;R16	RES, 100K 1/4W 5%	1018	2	EA
R6;R9;R17;R20	RES, 100 OHM 1/4W 5%	1033	4	EA

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DCX Line AMP.

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DCX Line Amp

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REF-DES.	DESC.	PART#	QTY.	UM
	TERMINAL BLOCK, 8 PIN	1003	1	EA
	SOCKET, 8 PIN	1011	3	EA
	WASHER, LOCK #6	1093	4	EA
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R2-R3;R13-R14	RES, 2.2K, 1/4W, 5%	1016	4	EA
R4;R7;R8;R15;R18;R19;R23-R26	RES, 10K 1/4W 5%	1017	10	EA
R5;R16	RES, 100K 1/4W 5%	1018	2	EA
R6;R9;R17;R20	RES, 100 OHM 1/4W 5%	1033	4	EA

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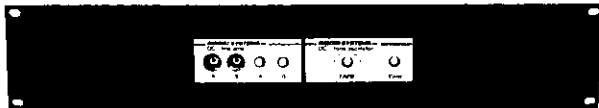
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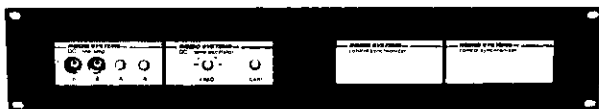
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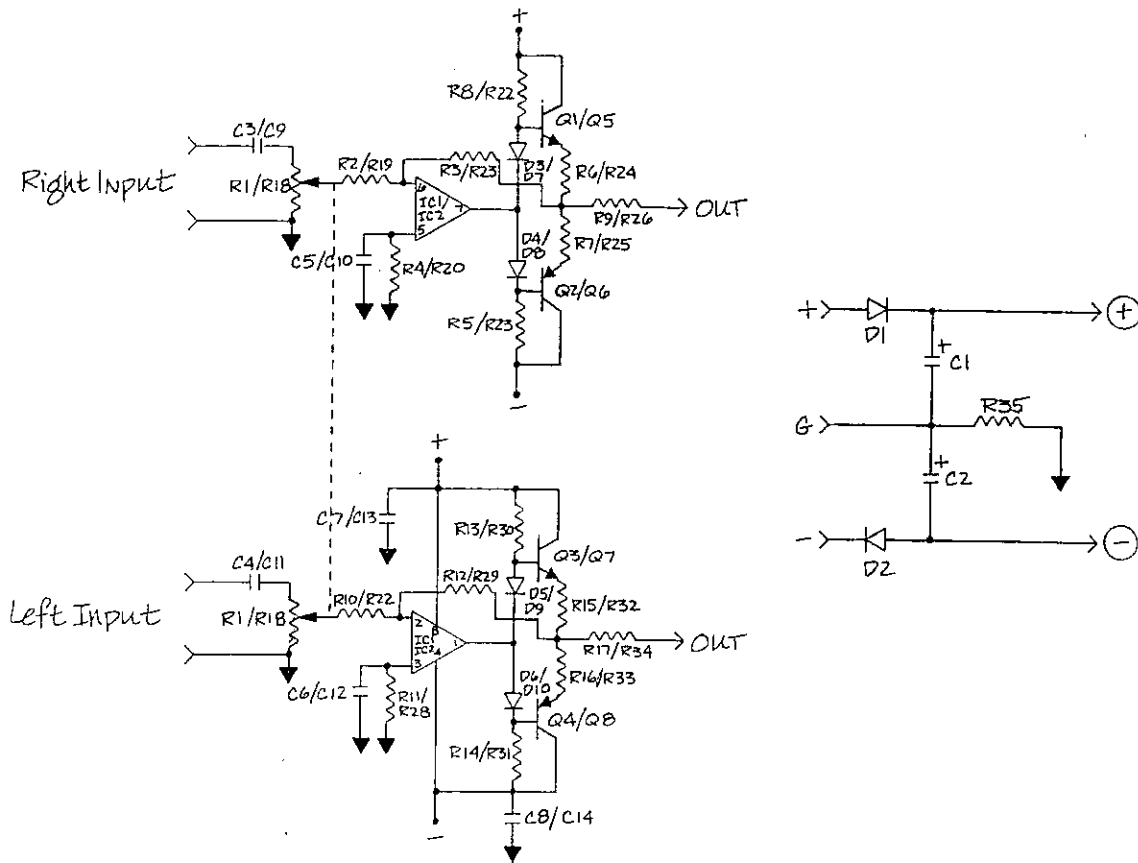


**DCX Power Supply—External Model DC-PS36X**  
**DCX Power Supply—Internal Model DC-PS181 (not shown)**  
**Dimensions: 1¾" H x 3⅝" W x 5¼" D**

**RADIO SYSTEMS INC.**

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DCX Headphone Amp (Channel A / Channel B)

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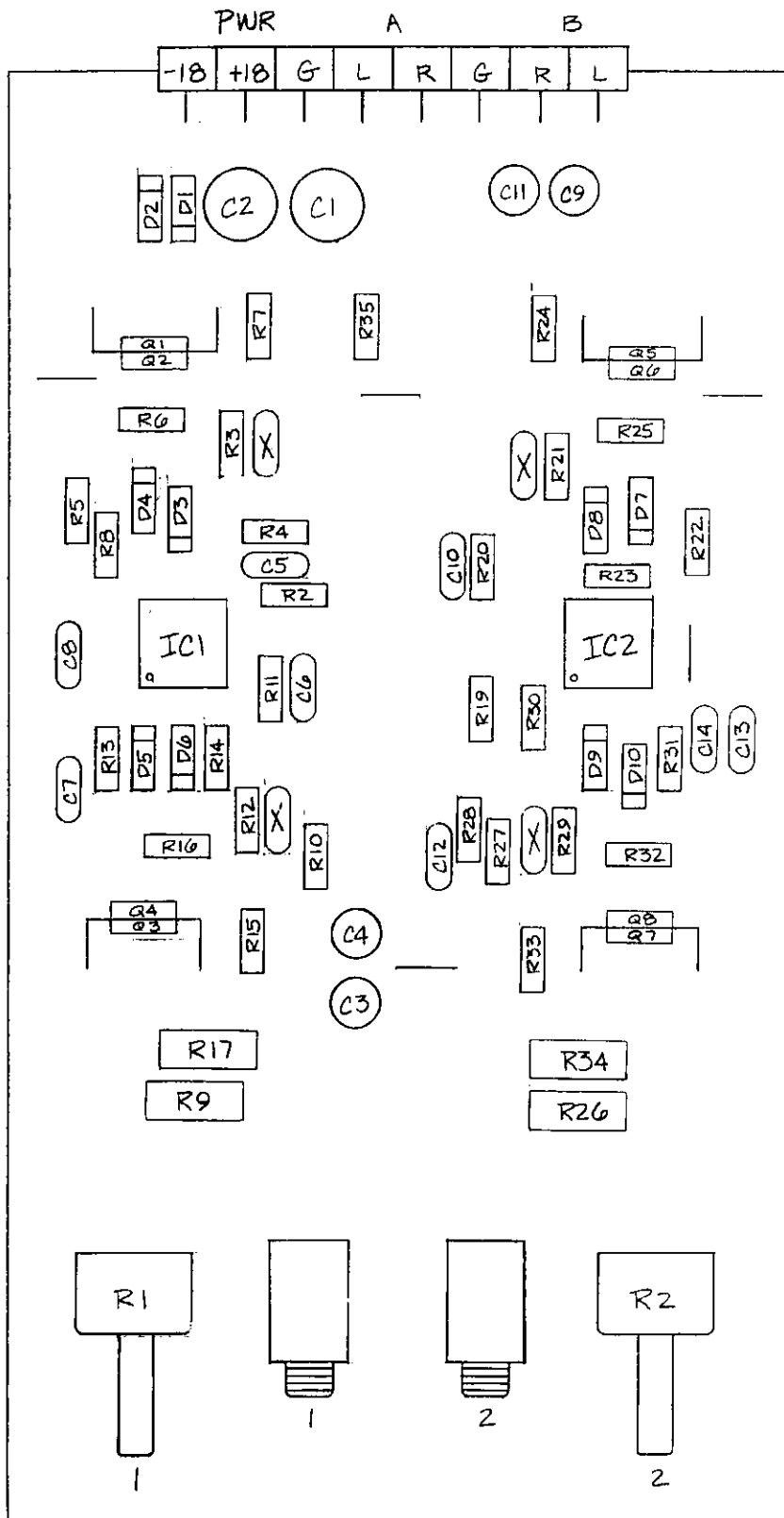
PAGE 1

ASSY# 1001 HEADPHONE AMP, DCX

20 FEB 1986

REF-DES.....	DESC.....	PART#	QTY.	UM
	PCB, HEADPHONE AMP, DCX	1002	1	EA
	TERMINAL BLOCK, 8 PIN	1003	1	EA
	PHONO JACK, SWCRAFT RN112BPC	1004	2	EA
	HEAT SINK, AAVID 5073B	1008	4	EA
	SOCKET, 8 PIN	1011	2	EA
	WASHER, LOCK #6	1093	4	EA
	SCREW, PANHEAD 6-32X1/4	1157	4	EA
	KNOB, .245 KNURLD G 101 WL	3146	2	EA
	LABEL, DCX FRONT	3147	1	EA
	LABEL, DCX REAR	3148	1	EA
	BAG, ZIPLOCK 6X8	3149	1	EA
	BAG, ZIPLOCK 3 X 4	3150	2	EA
C1-C2	CAP, 220 UF 25V POL.	1021	2	EA
C3;C4;C9;C11	CAP, 10UF 25V NP	1014	4	EA
C5-C8;C10;C12-C14	CAP, .1 UF MYLAR	1013	8	EA
D1-D2	DIODE, 1N4004	1020	2	EA
D3-D10	DIODE, 1N4148	1012	8	EA
IC1-IC2	IC, 5532	1010	2	EA
Q1;Q3;Q5;Q7	TRANSISTOR, MJE 15030	1007	4	EA
Q2;Q4;Q6;Q8	TRANSISTOR, MJE15031	1006	4	EA
R1;R18	POT, 10K DUAL, PIHER	1005	2	EA
R2;R10;R19;R27	RES, 10K 1/4W 5%	1017	4	EA
R3-R4;R11-R12;R20-R21;R28-R29	RES, 100K 1/4W 5%	1018	8	EA
R35	RES, 10 OHM 1/4W 5%	1019	1	EA
R5;R8;R13-R14;R22-R23;R30-R31	RES, 2.2K, 1/4W, 5%	1016	8	EA
R6-R7;R15-R16;R24-R25;R32-R33	RES, 4.3 OHM, 1/4W, 5%	1015	8	EA
R9;R17;R26;R34	RES, 47 OHM, 1/2W, 5%	1009	4	EA

\*\*\*



DCX Headphone Amp

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# The DCX Network From Radio Systems

The DCX series from Radio Systems offers quality professional broadcast electronics in a low cost modular package.

DCX boards are available separately and may be powered by a common, external DC power supply. This results in reductions in costs, noise levels, and package size.

DCX units come pre-assembled, factory tested, and ready for mounting in the DCX universal enclosure. Each enclosure will accommodate two DCX circuit boards. Boards can be intermixed to create a variety of functional combinations, or a single board can be combined with an internal power supply to create a stand-alone unit.

## Assembly

- Tilt board forward and insert controls through front panel holes, lower rear of board into enclosure.
- Reposition circuit board to align mounting holes.
- Insert and tighten mounting screws.
- Punch out label holes and affix front and rear panel labels. Front labels can be re-positioned if removed quickly, but adhere permanently after several hours.
- Install second board - if the slot is not used, black labels are supplied to cover unused front and rear panel holes.
- Mount knobs on shafts (for DC-HP and DC-PW).
- Install cover (4 screws). If the unit is to be surface mounted, the cover must be installed after mounting.

## Wiring

- Use of spade lugs is recommended.
- Connect the DC power terminals +, -, G, to the regulated 18v +/- supply. If the DC-PS18I internal supply is used, jumper leads are enclosed for this purpose.
- DCX boards utilize balanced inputs and outputs where appropriate. When connecting an unbalanced input line, use the DC "+" and "G" terminals and tie the unused "-" terminal to ground. When connecting an unbalanced output line, use the DC "+" and "G" terminals and leave the "-" terminal unconnected.

## Utilizing the Internal Power Supply

- Install the model DC-PS18W internal power supply in the right hand side of the universal cabinet and label the box as described above.
- Remove the hole plug in the rear upper left of the cabinet and insert the power cord.
- Wire the two AC space lugs to the two red screws closer to the front of the circuit board. The rear screw terminal is provided for ground.
- Crimp the strain relief around the cord firmly and insert into the hole until it clicks in place.

## Warranty

**Radio Systems warrants for one year from date of purchase, parts and labor on any unit returned to us for repair. Before a unit can be returned, a return authorization number must be obtained from Radio Systems. Repair and return of the unit will be made promptly. Within the warranty period, there is no charge for this service on units which show no sign of misuse or unauthorized alterations.**

# DCX PRODUCTS—SPECIFICATIONS

DCX Circuitboard	Model Number	Input Imp (in ohms)	Max. Output Level	THD (Note 1)	Signal/Noise (Note 2)	Channel Separation	Power Consumption (Note 3)	Configuration
5 Mic Pre-amp	DC-5MA	150	+26 dbm	.02%	-97 db	>97 db	7 watts	5 ch.
Phono Pre-amp	DC-PA	47K	+22 dbm	.05%	-70 db	>70 db	2.5 watts	dual/stereo
Line Amp	DC-LA/F DC-LA/S	47K	+25 dbm	.02%	-80 db	>80 db	2.5 watts	dual/stereo
Mic Pre-amp	DC-MA	150	+25 dbm	.03%	-80 db	>80 db	2.5 watts	dual
Headphone	DC-HP	20K	½ watt (10 v RMS high Z)	.01%	-90 db	>90 db	6.5 watts	2 ch.-stereo
Power Amp	DC-PW	20K	12 watts	.02%	-80 db	—	18 watts	mono
Oscillator	DC-OS	—	+24 dbm	.05%	—	—	1.5 watts	one channel
Synchronizers	DC-TTS DC-TAS	—	—	—	—	—	self powered 1 watt	single

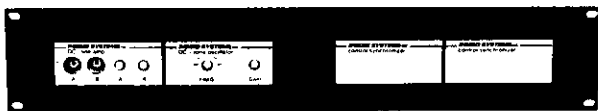
**NOTE 1:** THD is measured at maximum output before clipping into 600 ohms (8 ohms for the power and headphone amps).

**NOTE 2:** Signal to noise measured A weighted, input terminated (where applicable), relative to maximum output. Noise is degraded by approximately 6 db with use of internal power supply.

**NOTE 3:** Add power consumption of boards to determine the total number which can be utilized with a common power supply. Internal supply provides 18 watts. External supply provides 36 watts.



**DCX Rack Mount Model DC-RK1**  
**DCX Dual Rack Mount Model DC-RK2**  
**Dimensions: 3½" H x 19" W**



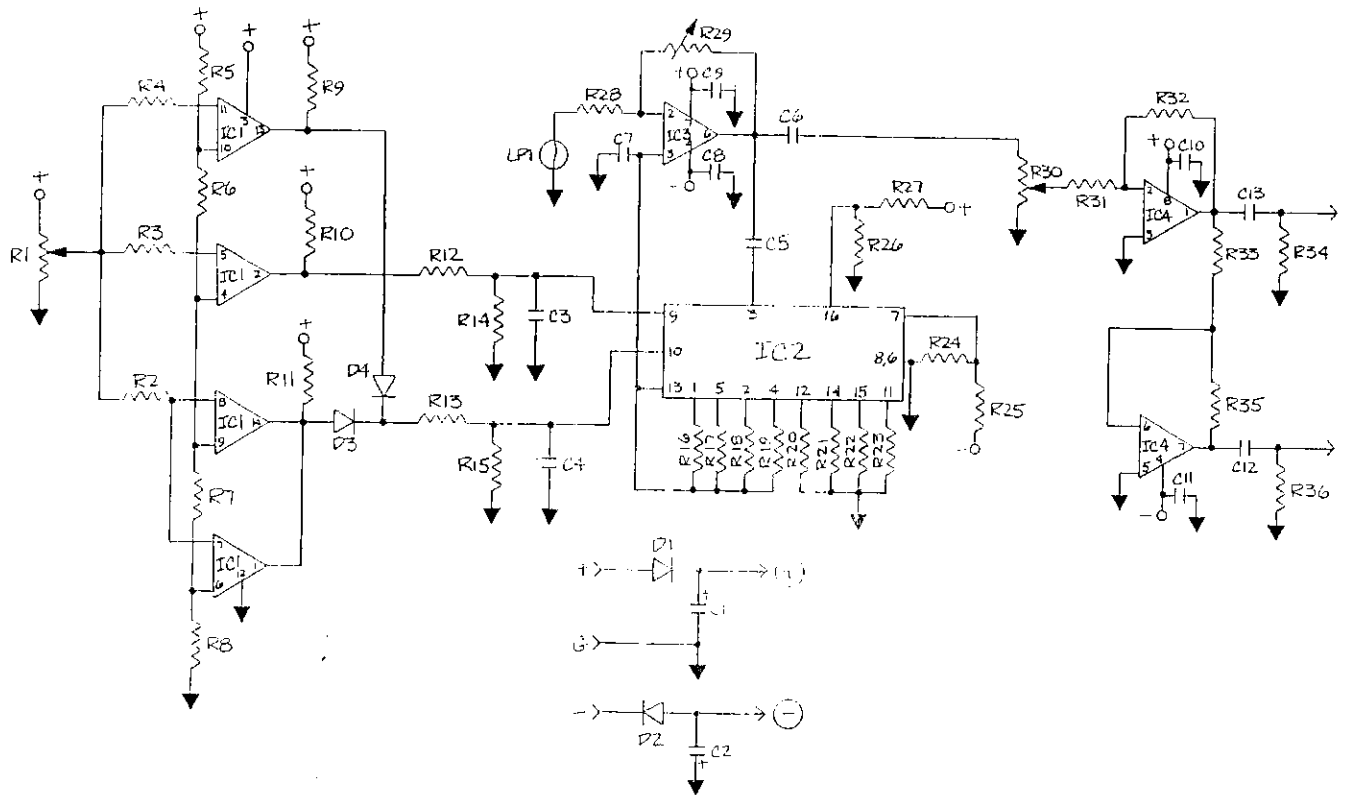
**DCX Universal Cabinet Model DC-CBU**  
**Dimensions: 1⅞" H x 7¾" W x 6¼" D**



**DCX Power Supply - External Model DC-PS36X**  
**DCX Power Supply - Internal Model DC-PS18I (not shown)**  
**Dimensions: 1¾" H x 3⅝" W x 5¾" D**

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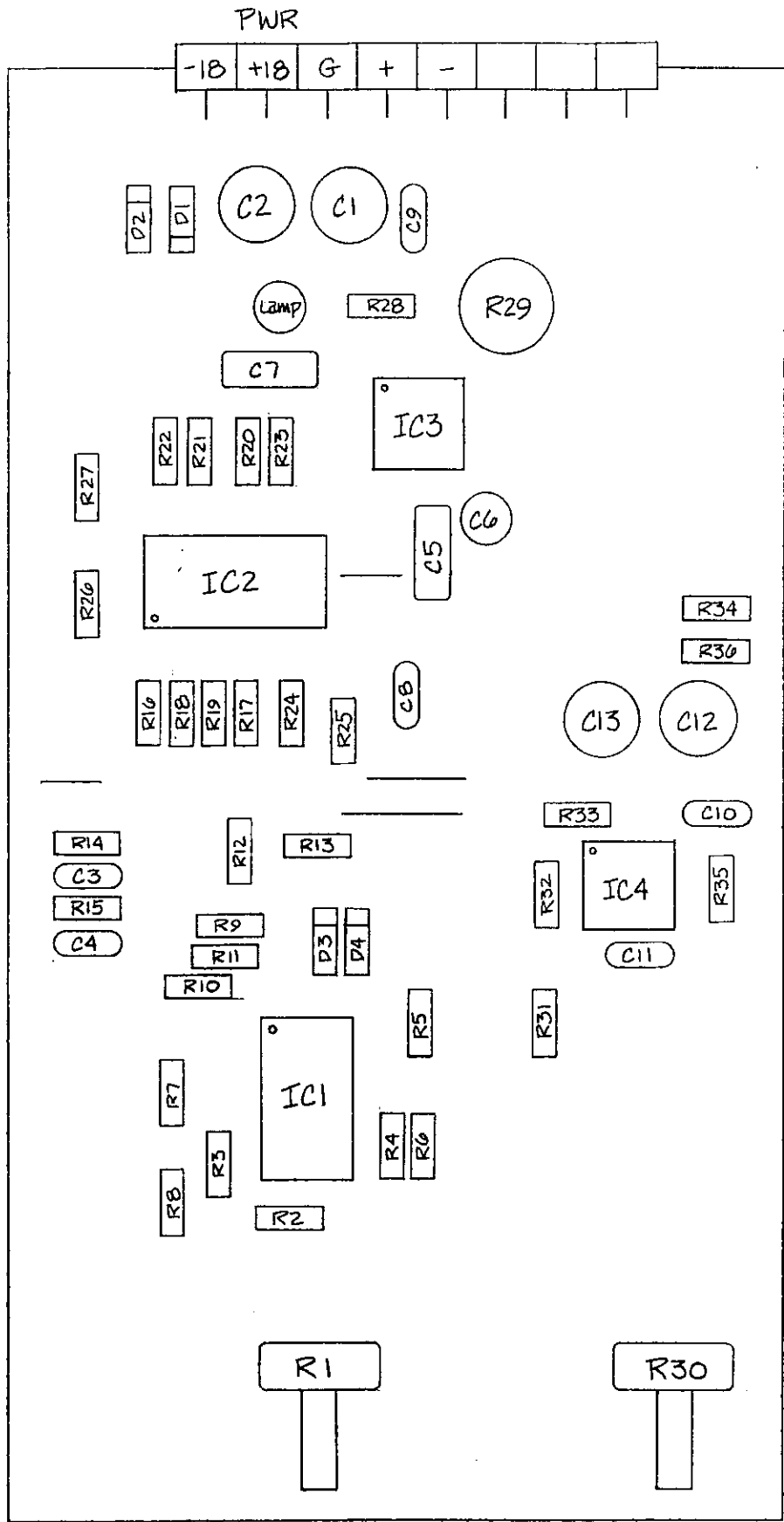
DCX Oscillator

1985 © RADIO SYSTEMS, INC

PAGE 1 ASSY# 1038 OSCILLATOR, DCX 17 FEB 1986

REF-DES.	DESC.	PART#	QTY.	UM
	TERMINAL BLOCK, 8 PIN	1003	1	EA
	SOCKET, 8 PIN	1011	1	EA
	SOCKET, 8 PIN	1011	1	EA
	SOCKET, 14 PIN	1027	1	EA
	SOCKET, 16 PIN	1039	1	EA
	LAMP, SYLVANIA 10CS	1051	1	EA
	PCB, OSCILLATOR, RSM DCD1	1052	1	EA
	WASHER, LOCK #6	1093	4	EA
	SCREW, PANHEAD 6-32X1/4	1157	4	EA
	LABEL, DCX FRONT	3147	1	EA
	LABEL, DCX REAR	3148	1	EA
	BAG, ZIPLOCK 6X8	3149	1	EA
	BAG, ZIPLOCK 3 X 4	3150	2	EA
C1-C2	CAP, 220 UF 25V POL.	1021	2	EA
C12-C13	CAP, 100 UF 16/25V NP	1049	2	EA
C3-C4;C8-C11	CAP, .1 UF MYLAR	1013	6	EA
C5;C7	CAP, 1500 PF POLY	1046	2	EA
C6	CAP, 10UF 25V NP	1014	1	EA
D1;D2	DIODE, 1N4004	1020	2	EA
D3-D4	DIODE, 1N4148	1012	2	EA
IC1	IC, LM339	1042	1	EA
IC2	IC, MC14052	1040	1	EA
IC3	IC, LF351	1044	1	EA
IC4	IC, 5552	1010	1	EA
R12-R15;R19;R23;R31;R33-R36	RES, 10K 1/4W 5%	1017	11	EA
R16-R20	RES, 1 MEG 1/4W 5%	1047	2	EA
R18-R22	RES, 20K 1/4W 5%	1031	2	EA
R1;R30	POT, 10K DUAL, PIHER	1005	2	EA
R2-R4;R17;R21	RES, 100K 1/4W 5%	1018	5	EA
R24-R26	RES, 1.5K 1/4W 5%	2760	2	EA
R28	RES, 10 OHM 1/4W 5%	1019	1	EA
R29	POT, 1K TRIM	1045	1	EA
R32	RES, 39K 1/4W 5%	1053	1	EA
R5-R8;R25;R27	RES, 2.2K, 1/4W, 5%	1016	6	EA
R9-R11	RES, 3.3K 1/4W 5%	1043	3	EA

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DCX Oscillator

# The DCX Network From Radio Systems

## INTERNAL POWER SUPPLY

The DCX series from Radio Systems offers quality professional broadcast electronics in a low cost modular package.

DCX boards are available separately and may be powered by a common, external DC power supply. This results in reductions in costs, noise levels, and package size.

DCX units come pre-assembled, factory tested, and ready for mounting in the DCX universal enclosure. Each enclosure will accommodate two DCX circuit boards. Boards can be intermixed to create a variety of functional combinations, or a single board can be combined with an internal power supply to create a stand-alone unit.

### Assembly

- Tilt board forward and insert controls through front panel holes, lower rear of board into enclosure.
- Reposition circuit board to align mounting holes.
- Insert and tighten mounting screws.
- Punch out label holes and affix front and rear panel labels. Front labels can be re-positioned if removed quickly, but adhere permanently after several hours.
- Install second board - if the slot is not used, black labels are supplied to cover unused front and rear panel holes.
- Mount knobs on shafts (for DC-HP and DC-PW).
- Install cover (4 screws). If the unit is to be surface mounted, the cover must be installed after mounting.

### Wiring

- Use of spade lugs is recommended.
- Connect the DC power terminals +, -, G, to the regulated 18v +/- supply. If the DC-PS18I internal supply is used, jumper leads are enclosed for this purpose.
- DCX boards utilize balanced inputs and outputs where appropriate. When connecting an unbalanced input line, use the DC "+" and "G" terminals and tie the unused "-" terminal to ground. When connecting an unbalanced output line, use the DC "+" and "G" terminals and leave the "-" terminal unconnected.

### Utilizing the Internal Power Supply

- Install the model DC-PS18W internal power supply in the right hand side of the universal cabinet and label the box as described above.
- Remove the hole plug in the rear upper left of the cabinet and insert the power cord.
- Wire the two AC space lugs to the two red screws closer to the front of the circuit board. The rear screw terminal is provided for ground.
- Crimp the strain relief around the cord firmly and insert into the hole until it clicks in place.

### Warranty

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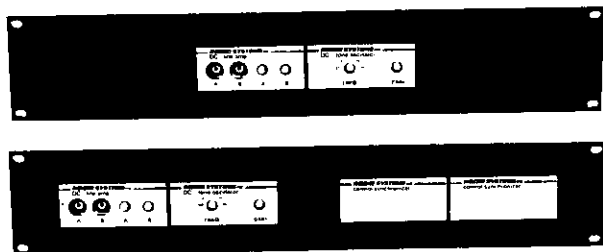
# DCX PRODUCTS—SPECIFICATIONS

DCX Circuitboard	Model Number	Input Imp (in ohms)	Max. Output Level	THD (Note 1)	Signal/Noise (Note 2)	Channel Separation	Power Consumption (Note 3)	Configuration
5 Mic Pre-amp	DC-5MA	150	+26 dbm	.02%	-97 db	>97 db	7 watts	5 ch.
Phono Pre-amp	DC-PA	47K	+22 dbm	.05%	-70 db	>70 db	2.5 watts	dual/stereo
Line Amp	DC-LA/F DC-LA/S	47K	+25 dbm	.02%	-80 db	>80 db	2.5 watts	dual/stereo
Mic Pre-amp	DC-MA	150	+25 dbm	.03%	-80 db	>80 db	2.5 watts	dual
Headphone	DC-HP	20K	½ watt (10 v RMS high Z)	.01%	-90 db	>90 db	6.5 watts	2 ch.-stereo
Power Amp	DC-PW	20K	12 watts	.02%	-80 db	—	18 watts	mono
Oscillator	DC-OS	—	+24 dbm	.05%	—	—	1.5 watts	one channel
Synchronizers	DC-TTS DC-TAS	—	—	—	—	—	self powered 1 watt	single

**NOTE 1:** THD is measured at maximum output before clipping into 600 ohms (8 ohms for the power and headphone amps).

**NOTE 2:** Signal to noise measured A weighted, input terminated (where applicable), relative to maximum output. Noise is degraded by approximately 6 db with use of internal power supply.

**NOTE 3:** Add power consumption of boards to determine the total number which can be utilized with a common power supply. Internal supply provides 18 watts. External supply provides 36 watts.



**DCX Rack Mount Model DC-RK1**  
**DCX Dual Rack Mount Model DC-RK2**  
**Dimensions: 3½" H x 19" W**



**DCX Universal Cabinet Model DC-CBU**  
**Dimensions: 1⅞" H x 7¾" W x 6¼" D**

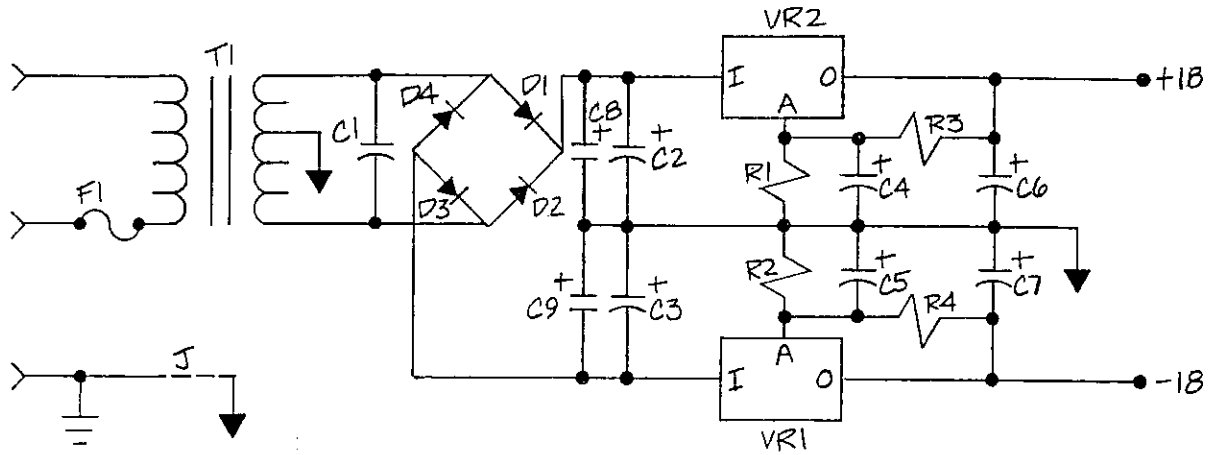


**DCX Power Supply—External Model DC-PS36X**  
**DCX Power Supply—Internal Model DC-PS18I (not shown)**  
**Dimensions: 1¾" H x 3⅝" W x 5¾" D**

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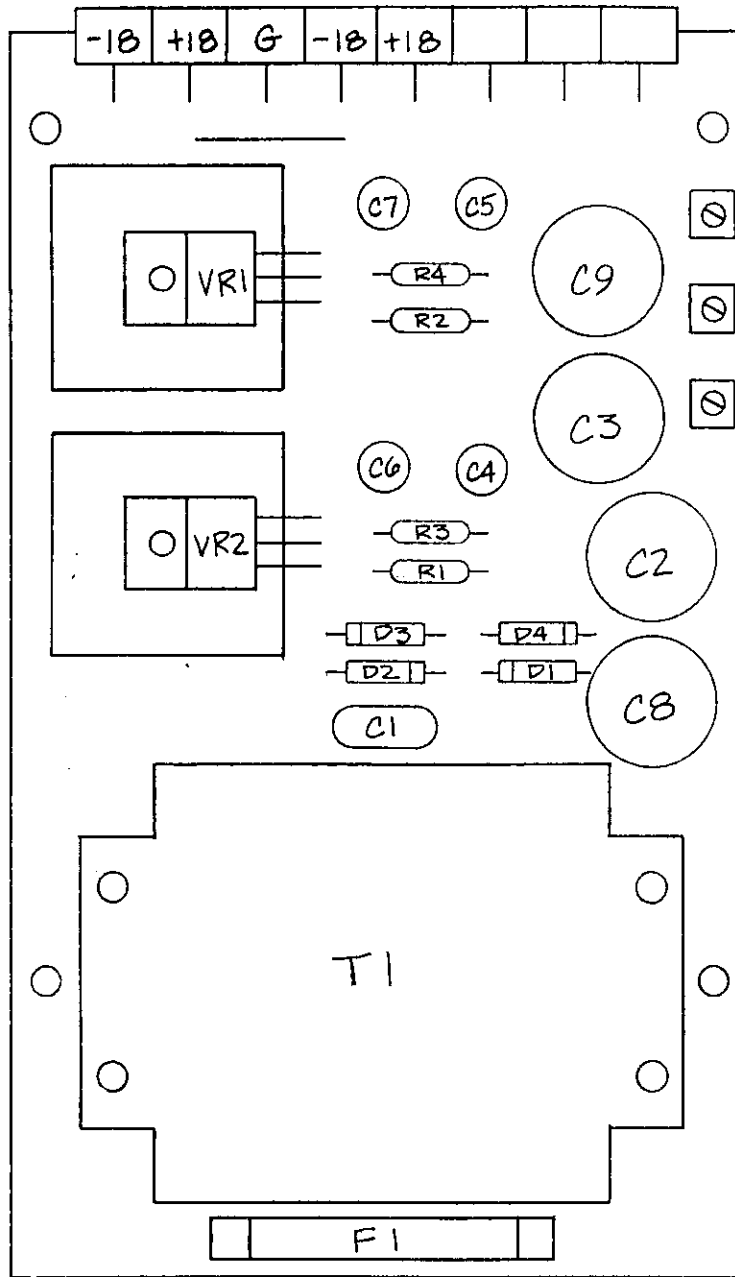


DCX Internal Power Supply

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REF-DES.....	DESC.....	PART#	QTY.	UM
	TERMINAL BLOCK, 8 PIN	1003	1	EA
	CLIP, FUSE	1074	2	EA
	PAD, THERMAL	1078	2	EA
	SCREW, NYLON 4-40X1/2 PANHEAD	1079	2	EA
	WASHER, LOCK #6	1093	4	EA
	HEAT SINK, AAVID 5750B	1134	2	EA
	SCREW, PANHEAD 6-32X1/4	1157	4	EA
	CORD, 18/25 PVT1 BROWN	2959	1	EA
	STRAIN RELIEF, 822	2960	1	EA
	PCB, RSM PSM-B, DCX INT. PWR SUP	3052	1	EA
	NUT, NYLON 4-40	3145	2	EA
	LABEL, DCX FRONT	3147	1	EA
	LABEL, DCX REAR	3148	1	EA
	BAG, ZIPLOCK 6X8	3149	1	EA
	BAG, ZIPLOCK 3 X 4	3150	2	EA
	DCX JUMPER	3151	1	EA
	FORK TERMINAL, RED	3152	2	EA
	SCREW TERMINAL, PC MOUNT #1478	3153	3	EA
C1	CAP, .1 UF MYLAR	1013	1	EA
C2;C3;C8;C9	CAP, 1000 UF 35V POL.	1080	4	EA
C4-C7	CAP, 15 UF POL. 35V	1026	4	EA
D1-D4	DIODE, 1N4004	1020	4	EA
F1	FUSE, 1/4 AMP SLO BLO	1083	1	EA
R1;R2	RES, 1580 OHM 1/4W 1%	1085	2	EA
R3;R4	RES, 118 OHM 1/4W 1%	1084	2	EA
T1	TRANSFORMER PF12-34	3053	1	EA
VR1	VR, LM337T	1076	1	EA
VR2	VR, LM317T	1077	1	EA

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DCX Internal Power Supply

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# The DCX Network From Radio Systems

POWER AMP

The DCX series from Radio Systems offers quality professional broadcast electronics in a low cost modular package.

DCX boards are available separately and may be powered by a common, external DC power supply. This results in reductions in costs, noise levels, and package size.

DCX units come pre-assembled, factory tested, and ready for mounting in the DCX universal enclosure. Each enclosure will accommodate two DCX circuit boards. Boards can be intermixed to create a variety of functional combinations, or a single board can be combined with an internal power supply to create a stand-alone unit.

## Assembly

- Tilt board forward and insert controls through front panel holes, lower rear of board into enclosure.
- Reposition circuit board to align mounting holes.
- Insert and tighten mounting screws.
- Punch out label holes and affix front and rear panel labels. Front labels can be re-positioned if removed quickly, but adhere permanently after several hours.
- Install second board - if the slot is not used, black labels are supplied to cover unused front and rear panel holes.
- Mount knobs on shafts (for DC-HP and DC-PW).
- Install cover (4 screws). If the unit is to be surface mounted, the cover must be installed after mounting.

## Wiring

- Use of spade lugs is recommended.
- Connect the DC power terminals +, -, G, to the regulated 18v +/- supply. If the DC-PS18I internal supply is used, jumper leads are enclosed for this purpose.
- DCX boards utilize balanced inputs and outputs where appropriate. When connecting an unbalanced input line, use the DC "+" and "G" terminals and tie the unused "-" terminal to ground. When connecting an unbalanced output line, use the DC "+" and "G" terminals and leave the "-" terminal unconnected.

## Utilizing the Internal Power Supply

- Install the model DC-PS18W internal power supply in the right hand side of the universal cabinet and label the box as described above.
- Remove the hole plug in the rear upper left of the cabinet and insert the power cord.
- Wire the two AC space lugs to the two red screws closer to the front of the circuit board. The rear screw terminal is provided for ground.
- Crimp the strain relief around the cord firmly and insert into the hole until it clicks in place.

## Warranty

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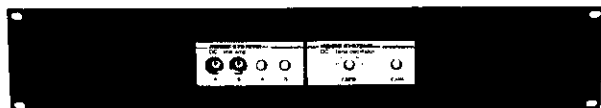
# DCX PRODUCTS—SPECIFICATIONS

DCX Circuitboard	Model Number	Input Imp (in ohms)	Max. Output Level	THD (Note 1)	Signal/Noise (Note 2)	Channel Separation	Power Consumption (Note 3)	Configuration
5 Mic Pre-amp	DC-5MA	150	+26 dbm	.02%	-97 db	>97 db	7 watts	5 ch.
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Line Amp	DC-LA/F DC-LA/S	47K	+25 dbm	.02%	-80 db	>80 db	2.5 watts	dual/stereo
Mic Pre-amp	DC-MA	150	+25 dbm	.03%	-80 db	>80 db	2.5 watts	dual
Headphone	DC-HP	20K	$\frac{1}{2}$ watt (10 v RMS high Z)	.01%	-90 db	>90 db	6.5 watts	2 ch.-stereo
Power Amp	DC-PW	20K	12 watts	.02%	-80 db	—	18 watts	mono
Oscillator	DC-OS	—	+24 dbm	.05%	—	—	1.5 watts	one channel
Synchronizers	DC-TTS DC-TAS	—	—	—	—	—	self powered 1 watt	single

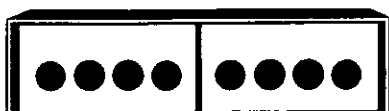
**NOTE 1:** THD is measured at maximum output before clipping into 600 ohms (8 ohms for the power and headphone amps).

**NOTE 2:** Signal to noise measured A weighted, input terminated (where applicable), relative to maximum output. Noise is degraded by approximately 6 db with use of internal power supply.

**NOTE 3:** Add power consumption of boards to determine the total number which can be utilized with a common power supply. Internal supply provides 18 watts. External supply provides 36 watts.



**DCX Rack Mount Model DC-RK1**  
**DCX Dual Rack Mount Model DC-RK2**  
**Dimensions: 3½" H x 19" W**



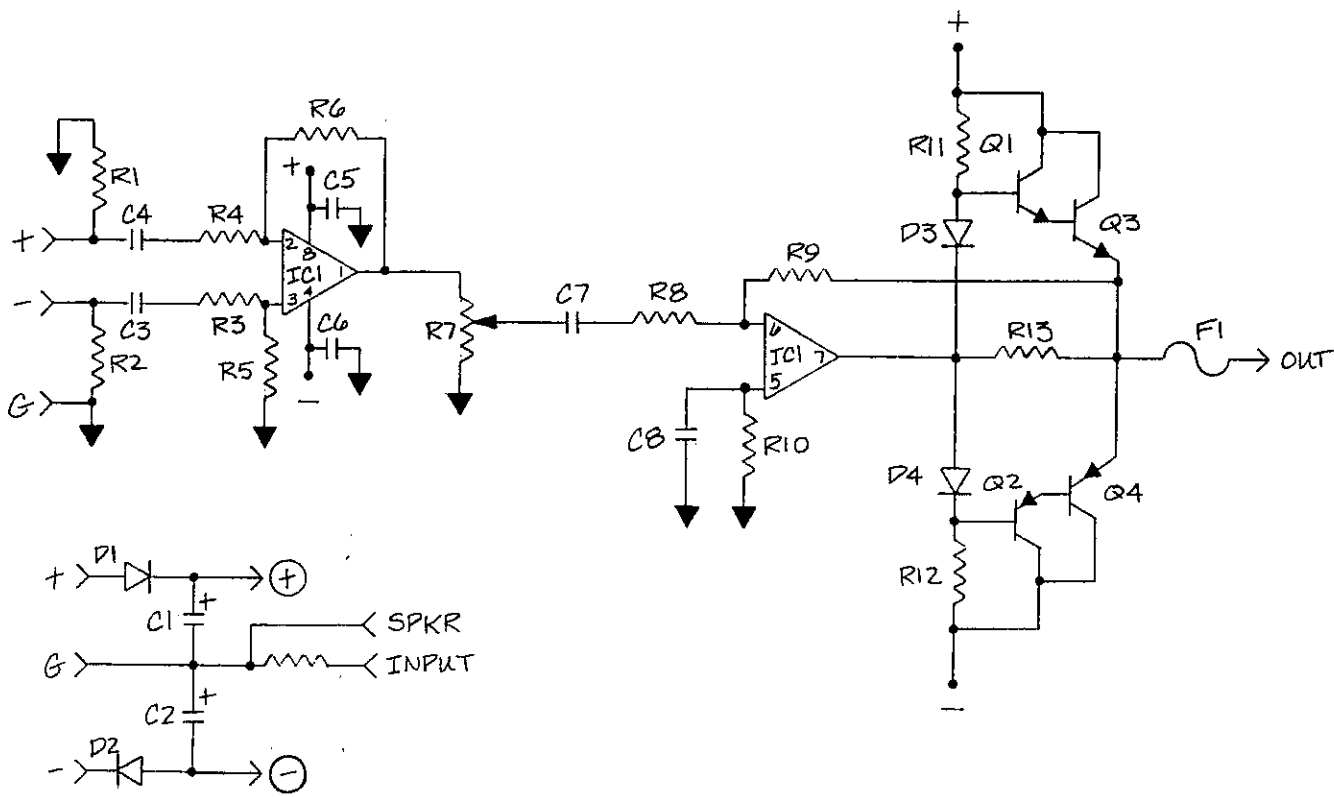
**DCX Universal Cabinet Model DC-CBU**  
**Dimensions: 1⅞" H x 7¾" W x 6¼" D**



**DCX Power Supply—External Model DC-PS36X**  
**DCX Power Supply—Internal Model DC-PS18I (not shown)**  
**Dimensions: 1¾" H x 3⅝" W x 5¼" D**

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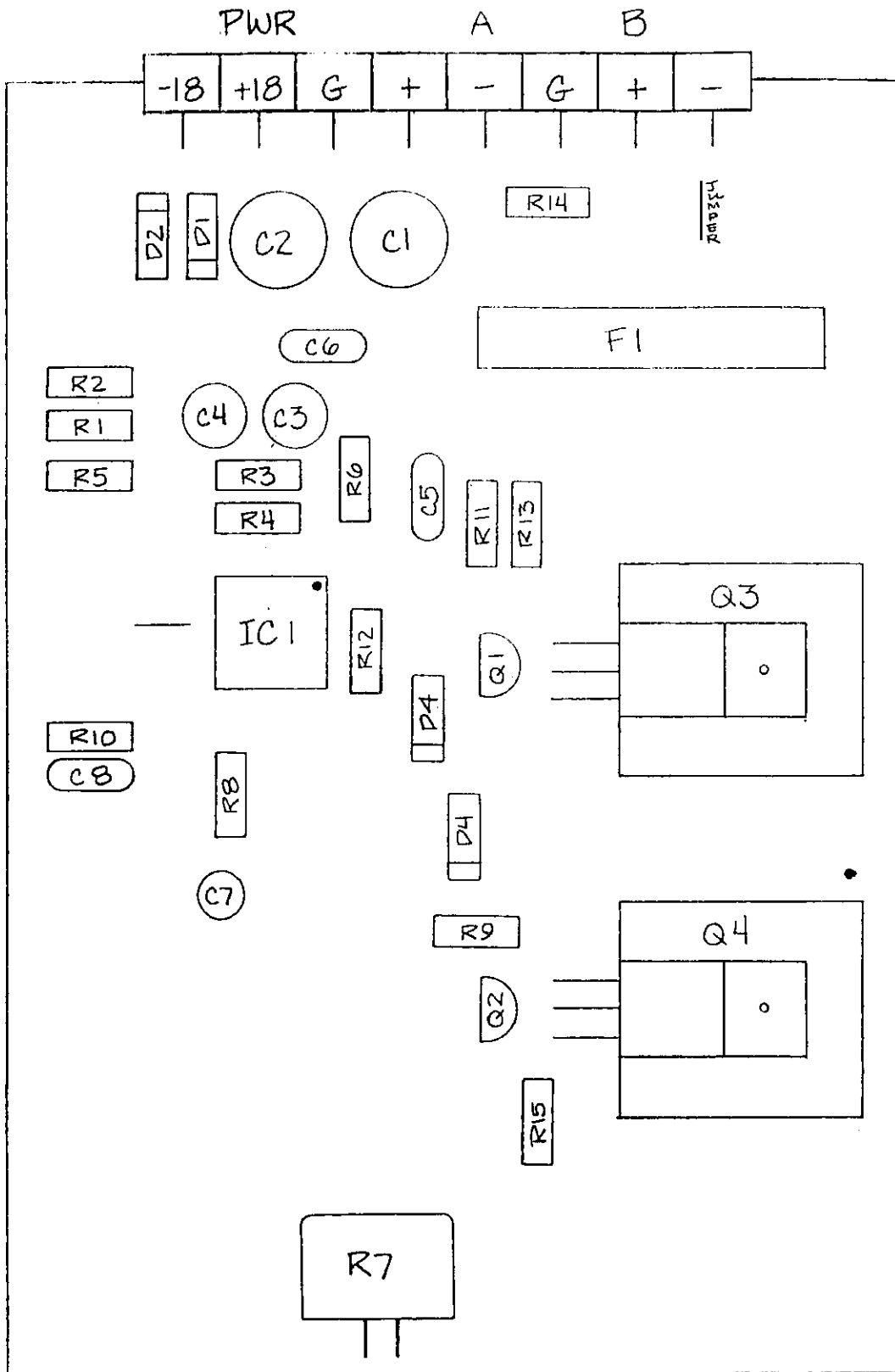
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DCX Power Amp

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REF-DES.	DESC.	PART#	QTY.	UM
	TERMINAL BLOCK, 8 PIN	1003	1	EA*
	SOCKET, 8 PIN	1011	1	EA
	CLIP, FUSE	1074	2	EA
	SCREW, NYLON 4-40X1/2 PANHEAD	1079	2	EA
	WASHER, LOCK #6	1093	4	EA
	HEAT SINK, AAVID 5750B	1134	2	EA
	SCREW, PANHEAD 6-32X1/4	1157	4	EA
	NUT, NYLON 4-40	3145	2	EA
	KNOB, .245 KNURLED G 101 WL	3146	1	EA
	LABEL, DCX FRONT	3147	1	EA
	LABEL, DCX REAR	3148	1	EA
	BAG, ZIPLOCK 6X8	3149	1	EA
	BAG, ZIPLOCK 3 X 4	3150	2	EA
C1-C2	CAP, 220 UF 25V POL.	1021	2	EA
C3;C4	CAP, 10UF 25V NP	1014	3	EA
C5-C6;C8	CAP, .1 UF MYLAR	1013	3	EA
D1-D2	DIODE, 1N4004	1020	2	EA
D3-D4	DIODE, 1N4148	1012	2	EA
F1	FUSE, 1 AMP	1135	1	EA
IC1	IC, 5532	1010	1	EA
Q1	TRANSISTOR, 2N3904	1128	1	EA
Q2	TRANSISTOR, 2N3906	1056	1	EA
Q3	TRANSISTOR, MJE 15030	1007	1	EA
Q4	TRANSISTOR, MJE15031	1006	1	EA
R1-R2	RES, 100K 1/4W 5%	1018	2	EA
R11-R12	RES, 2.2K, 1/4W, 5%	1016	2	EA
R13	RES, 100 OHM 1/4W 5%	1033	1	EA
R14	RES, 10 OHM 1/4W 5%	1019	1	EA
R3-R6	RES, 20K 1/4W 5%	1031	4	EA
R7	POT, 10K DUAL, PIHER	1005	1	EA
R9-R10	RES, 39K 1/4W 5%	1053	2	EA



DCX Power Amp

# The DCX Network From Radio Systems

## TURN-TABLE SYNCHRONIZER

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### Assembly

- Tilt board forward and insert controls through front panel holes, lower rear of board into enclosure.
- Reposition circuit board to align mounting holes.
- Insert and tighten mounting screws.
- Punch out label holes and affix front and rear panel labels. Front labels can be re-positioned if removed quickly, but adhere permanently after several hours.
- Install second board - if the slot is not used, black labels are supplied to cover unused front and rear panel holes.
- Mount knobs on shafts (for DC-HP and DC-PW).
- Install cover (4 screws). If the unit is to be surface mounted, the cover must be installed after mounting.

### Wiring

- Use of spade lugs is recommended.
- Connect the DC power terminals +, -, G, to the regulated 18v +/- supply. If the DC-PS18I internal supply is used, jumper leads are enclosed for this purpose.
- DCX boards utilize balanced inputs and outputs where appropriate. When connecting an unbalanced input line, use the DC "+" and "G" terminals and tie the unused "-" terminal to ground. When connecting an unbalanced output line, use the DC "+" and "G" terminals and leave the "-" terminal unconnected.

### Utilizing the Internal Power Supply

- Install the model DC-PS18W internal power supply in the right hand side of the universal cabinet and label the box as described above.
- Remove the hole plug in the rear upper left of the cabinet and insert the power cord.
- Wire the two AC space lugs to the two red screws closer to the front of the circuit board. The rear screw terminal is provided for ground.
- Crimp the strain relief around the cord firmly and insert into the hole until it clicks in place.

### Warranty

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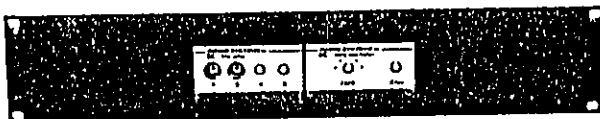
# DCX PRODUCTS - SPECIFICATIONS

DCX Circuitboard	Model Number	Input Imp (in ohms)	Max. Output Level	THD (Note 1)	Signal/Noise (Note 2)	Channel Separation	Power Consumption (Note 3)	Configuration
5 Mic Pre-amp	DC-5MA	150	+26 dbm	.02%	-97 db	>97 db	7 watts	5 ch.
Phono Pre-amp	DC-PA	47K	+22 dbm	.05%	-70 db	>70 db	2.5 watts	dual/stereo
Line Amp	DC-LA/F DC-LA/S	47K	+25 dbm	.02%	-80 db	>80 db	2.5 watts	dual/stereo
Mic Pre-amp	DC-MA	150	+25 dbm	.03%	-80 db	>80 db	2.5 watts	dual
Headphone	DC-HP	20K	½ watt (10 v RMS high Z)	.01%	-90 db	>90 db	6.5 watts	2 ch.-stereo
Power Amp	DC-PW	20K	12 watts	.02%	-80 db	—	18 watts	mono
Oscillator	DC-OS	—	+24 dbm	.05%	—	—	1.5 watts	one channel
Synchronizers	DC-TTS DC-TAS	—	—	—	—	—	self powered 1 watt	single

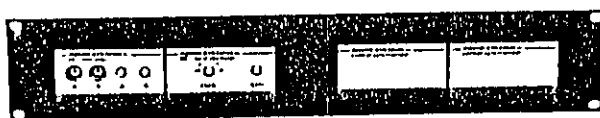
NOTE 1: THD is measured at maximum output before clipping into 600 ohms (8 ohms for the power and headphone amps).

NOTE 2: Signal to noise measured A weighted, input terminated (where applicable), relative to maximum output. Noise is degraded by approximately 6 db with use of internal power supply.

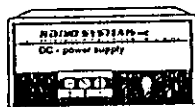
NOTE 3: Add power consumption of boards to determine the total number which can be utilized with a common power supply. Internal supply provides 18 watts. External supply provides 36 watts.



DCX Rack Mount Model DC-RK1  
DCX Dual Rack Mount Model DC-RK2  
Dimensions: 3½" H x 19" W



DCX Universal Cabinet Model DC-CBU  
Dimensions: 1⅞" H x 7¾" W x 6¼" D



DCX Power Supply - External Model DC-PS36X  
DCX Power Supply - Internal Model DC-PS10I (not shown)  
Dimensions: 1¾" H x 3⅞" W x 5¼" D

**RADIO SYSTEMS INC.**

5113 West Chester Pike • Edgemont, PA 19028 • 215/356-4700



# **RADIO SYSTEMS**

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## USING THE DCX TURNTABLE SYNCHRONIZER WITH RS SERIES CONSOLES

1. Set the pulse/holding strap (J6) for the turntable input to holding.
2. Connect pins 3 & 5 (for input A) or 3 & 4 (for input B) on the remote control connector to terminals G & H on the turntable synchronizer board.



Radio Systems  
Control Synchronizer

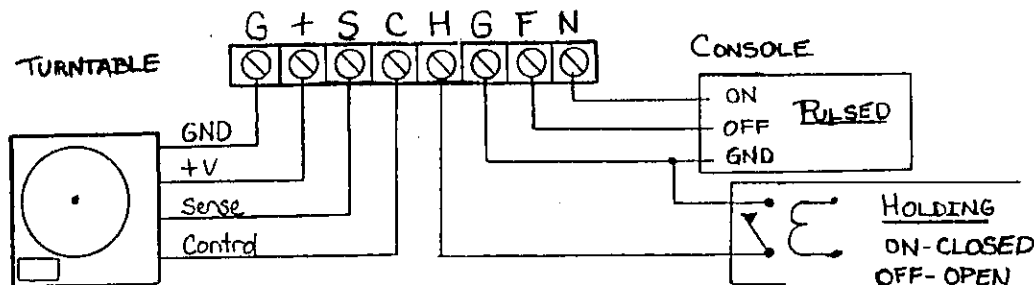
Console Interface for Technics models: SL-1200, SP-25, SP-15,  
SP-10 MKII and SP-10 MKIIA

The Radio Systems RS-TTS turntable control synchronizer is designed to interface console remote start/stop switching with the Technics professional turntables. The unit allows the use of separate start and stop remote commands by synchronizing the console with the turntable. This is achieved through the use of a motion sensing circuit. The synchronizer prohibits a start command from stopping a turntable already in motion, and vice-versa.

The control synchronizer is programmable and will interface consoles with either holding remote contacts (push on/push off) or those with separate on and off control pulses (both positive and grounding pulses). Turntable pushbuttons are unaffected by the control synchronizer.

Connections

Four wires from the control synchronizer must be internally connected to the turntable; V+, ground, the control line (start/stop) and the motion sensing line. Turntable connection points are indicated in the attached diagrams. Use extreme care in soldering, avoiding solder bridges on the densely populated circuit boards. Console connections are shown below for both pulsed controlled and holding contact consoles.



Programming

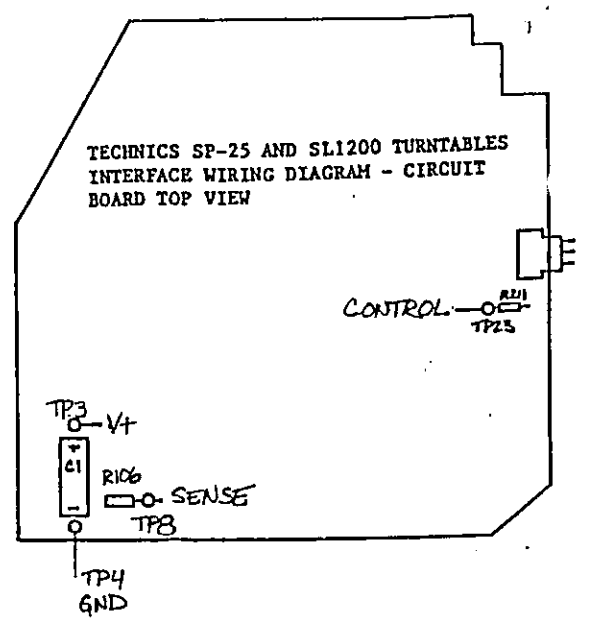
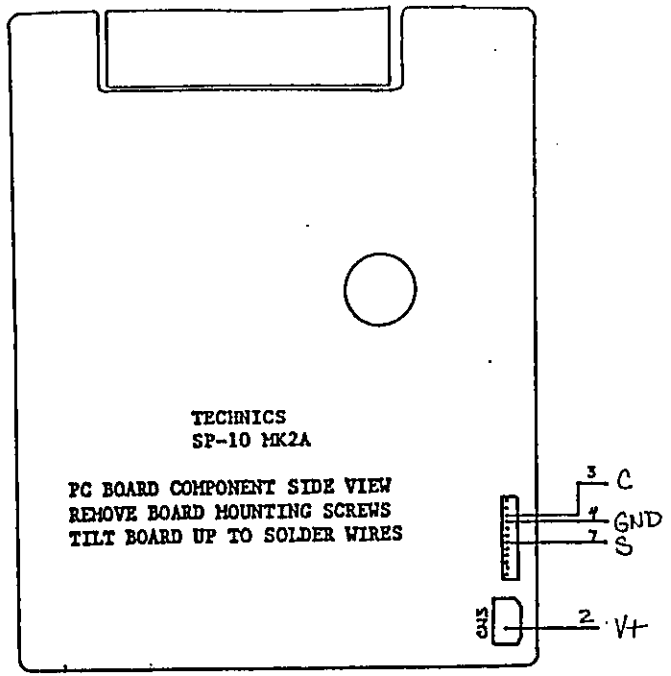
To program move switches to the indicated position for the proper mode.

Switch Position

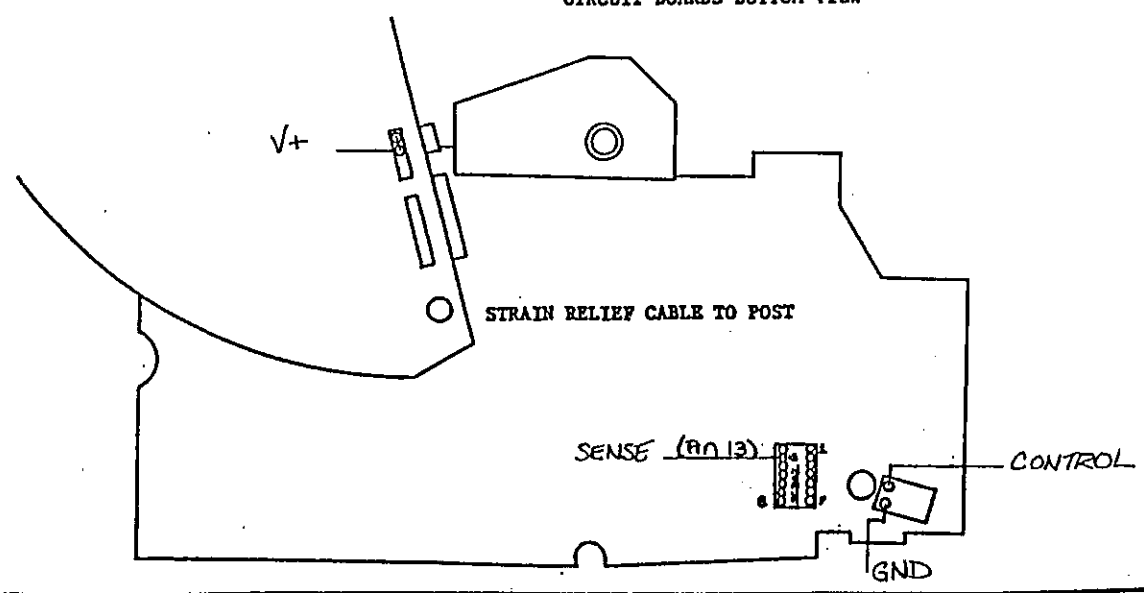
<u>Model</u>	S1	S2	S3	S4	S5
Holding	ON	OFF	OFF	ON	OFF
Pulse (Pull to ground)	ON	ON	ON	OFF	OFF
Pulse (+5 to +20v)	OFF	ON	OFF	OFF	ON

Adjustment

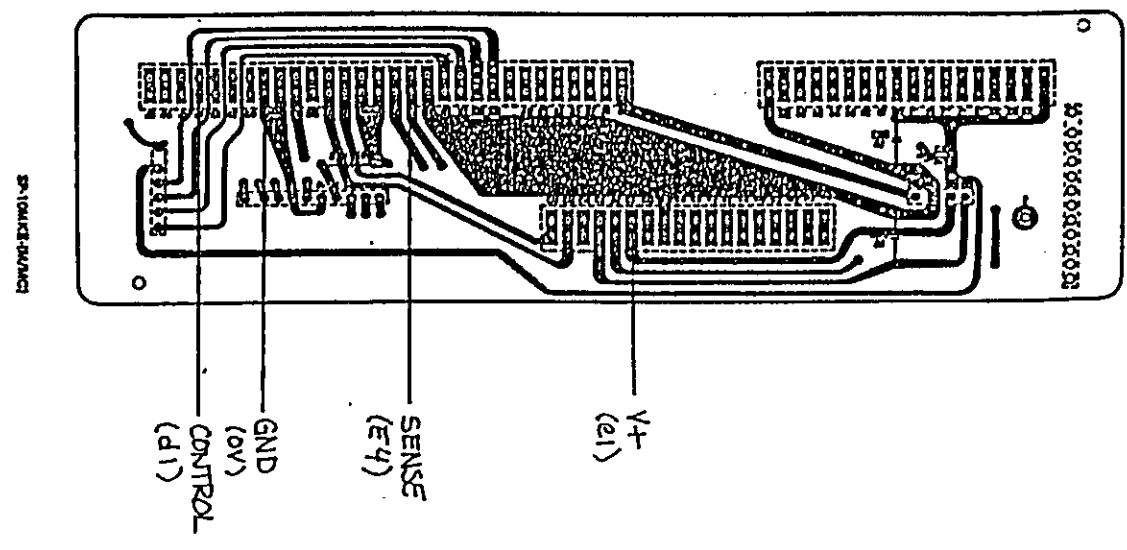
To calibrate the unit for the turntable run-sense voltage, turn the pot counterclockwise until the LED lights with the turntable running. Then turn past this point by ten degrees. The LED should extinguish when the turntable is stopped.

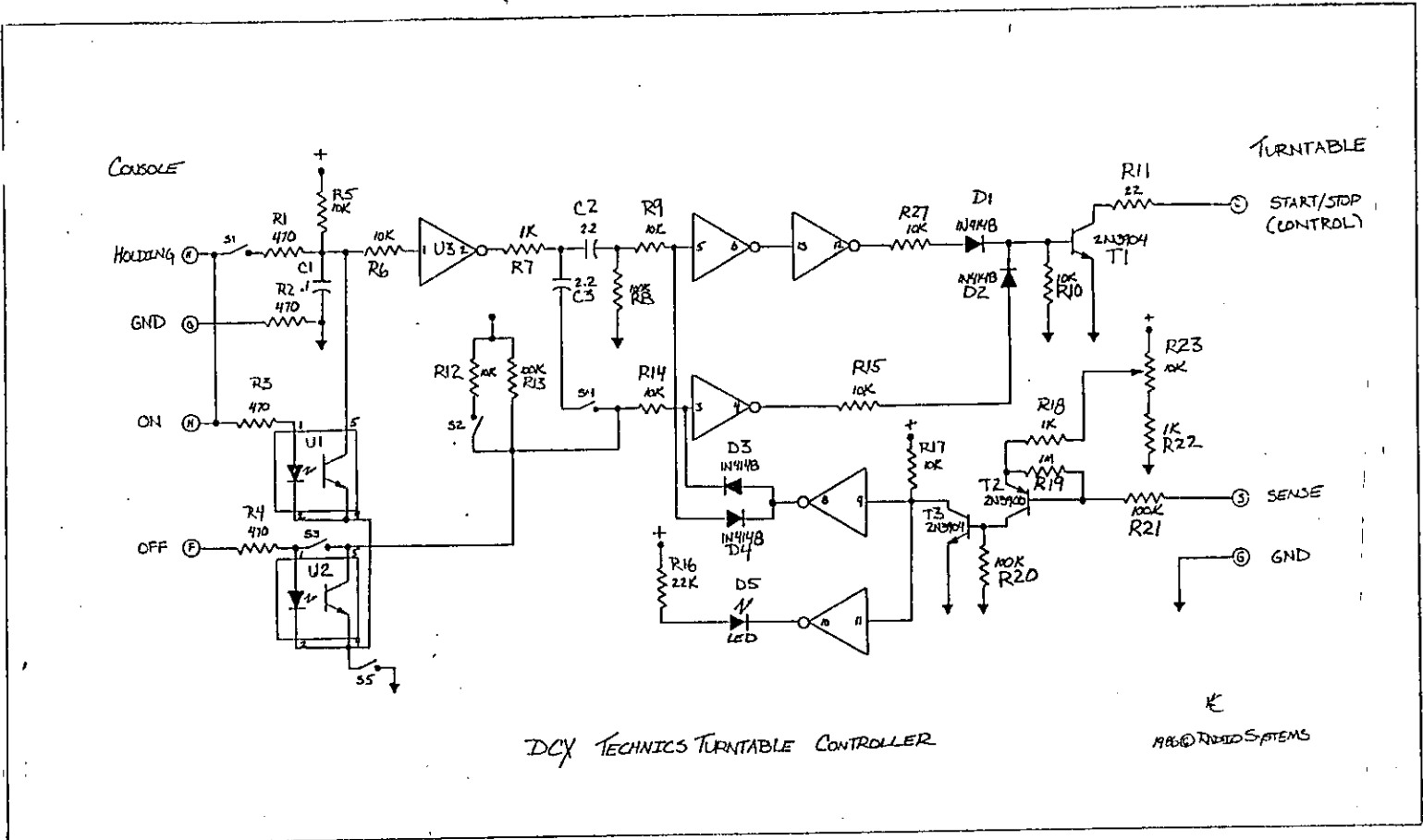


TECHNICS SP-15 TURNTABLE-INTERFACE WIRING  
CIRCUIT BOARDS BOTTOM VIEW

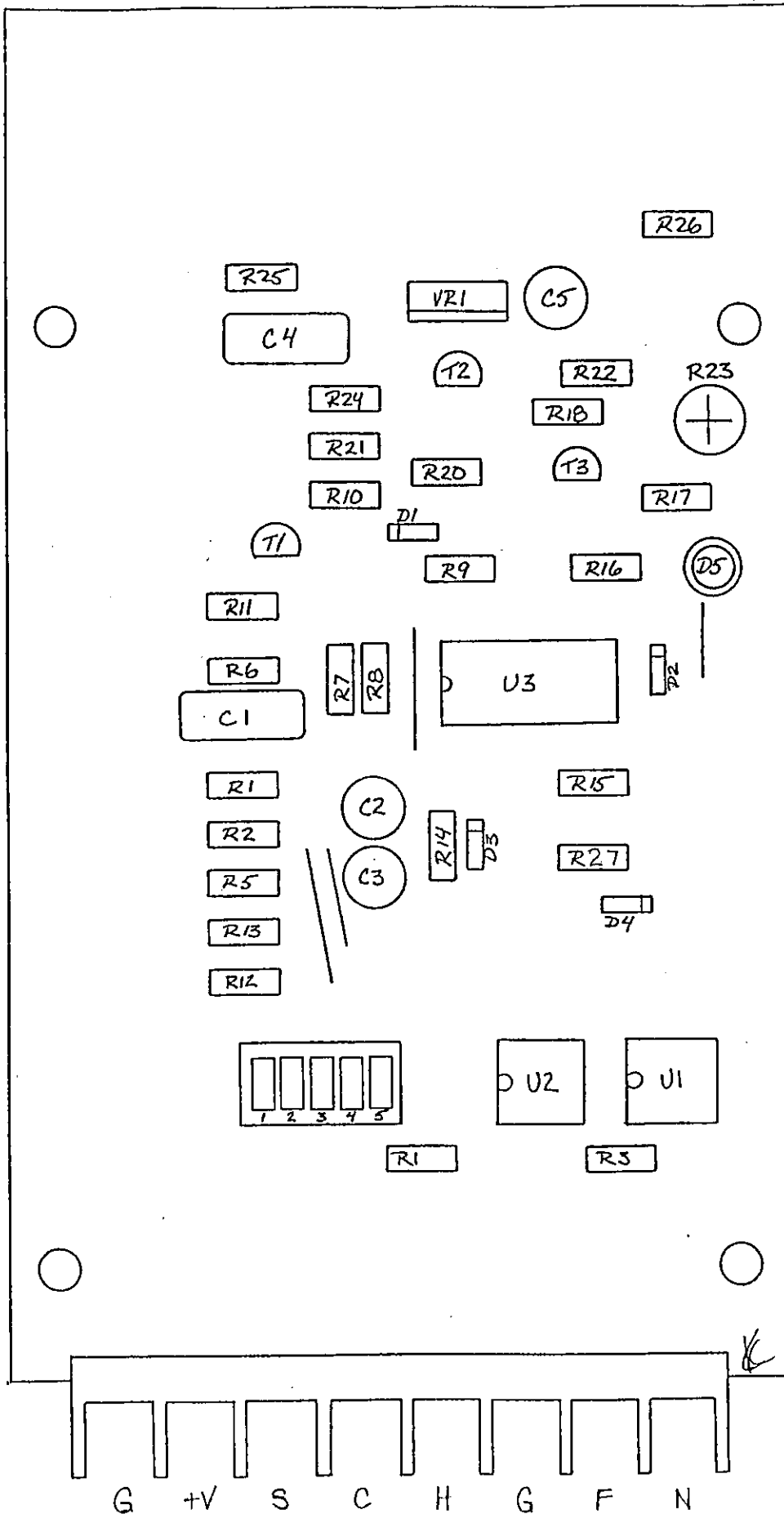


Circuit Board Wiring View (Connectional Circuit)..... Model SP-10MKII-(M/MC)



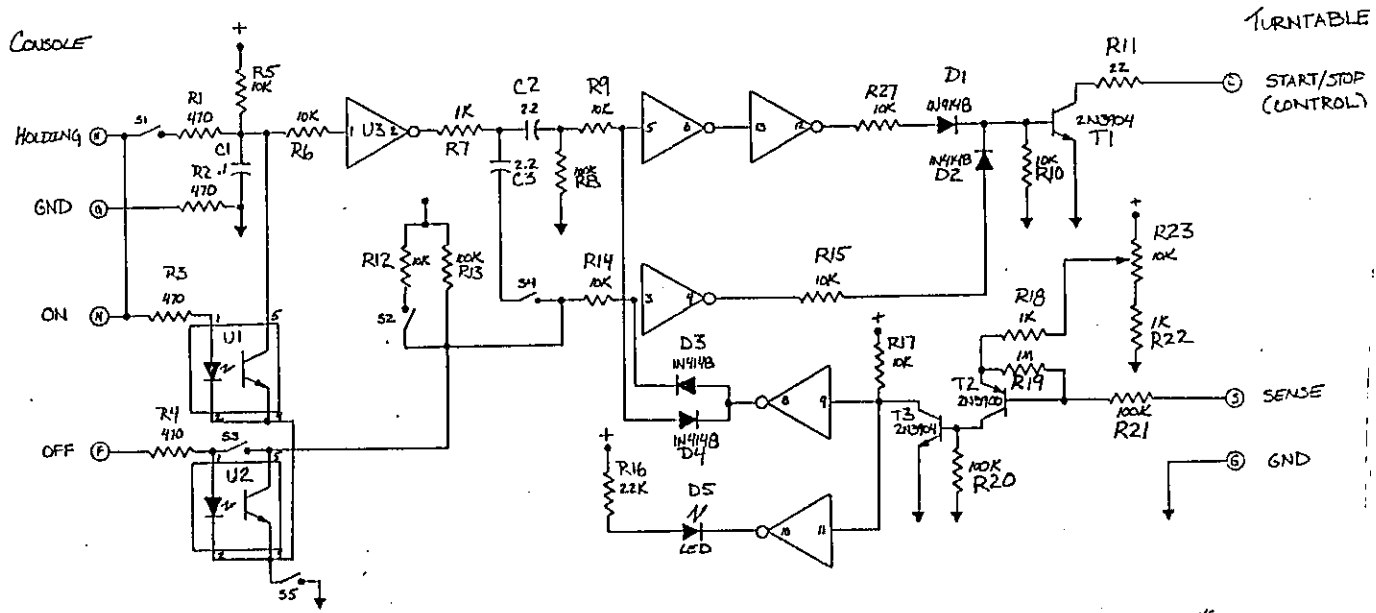


REF-DES.....	DESC.....	PART#	QTY.	UM
	SOCKET, 14 PIN	1027	1	EA
	PCB, RS TTC DCX TURNTABLE CONT.	3222	1	
	SOCKET, 6 PIN	3225	2	
	SWITCH, 5 POSITION DIP	3226	1	
C1;C4	CAP, .1 UF MYLAR	1013	2	EA
C2;C3	CAP, 2.2 UF 50V NP	2763	2	EA
C5	CAP, 15 UF POL. 35V	1026	1	EA
D1-D4	DIODE, 1N4148	1012	4	EA
D5	DIODE, LED RED HP HLMP3000	1130	1	EA
R1-R4	RES, 470 OHM 1/4W 5%	1030	4	EA
R11	RES, 22 OHM 1/4W 5%	1028	1	EA
R16	RES, 2.2K, 1/4W, 5%	1016	1	EA
R19	RES, 1 MEG 1/4W 5%	1047	1	EA
R23	POT, 10K TRIM	1129	1	EA
R26	RES, 100 OHM 1/4W 5%	1033	1	EA
R5;6;9;10;12;14;15;17;27	RES, 10K 1/4W 5%	1017	9	EA
R7;R18;R22;R25	RES, 1K 1/4W 5%	1032	4	EA
R8;R13;R20;R21	RES, 100K 1/4W 5%	1018	4	EA
T1;T3	TRANSISTOR, 2N3904	1128	2	EA
T2	TRANSISTOR, 2N3906	1056	1	EA
V1;V2	IC, TIL111	3224	2	
V3	IC, CD40106	3223	1	
VR1	VR, LM317T	1077	1	EA



DCX TURNTABLE CONTROLLER

1966 RADIO SYSTEMS



DCX TECHNICS TURNTABLE CONTROLLER

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REF-DES.	DESC.	PART#	QTY.	UM
	SOCKET, 14 PIN	1027	1	EA
	PCB, RS TTC DCX TURNTABLE CONT.	3222	1	
	SOCKET, 6 PIN	3225	2	
	SWITCH, 5 POSITION DIP	3226	1	
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