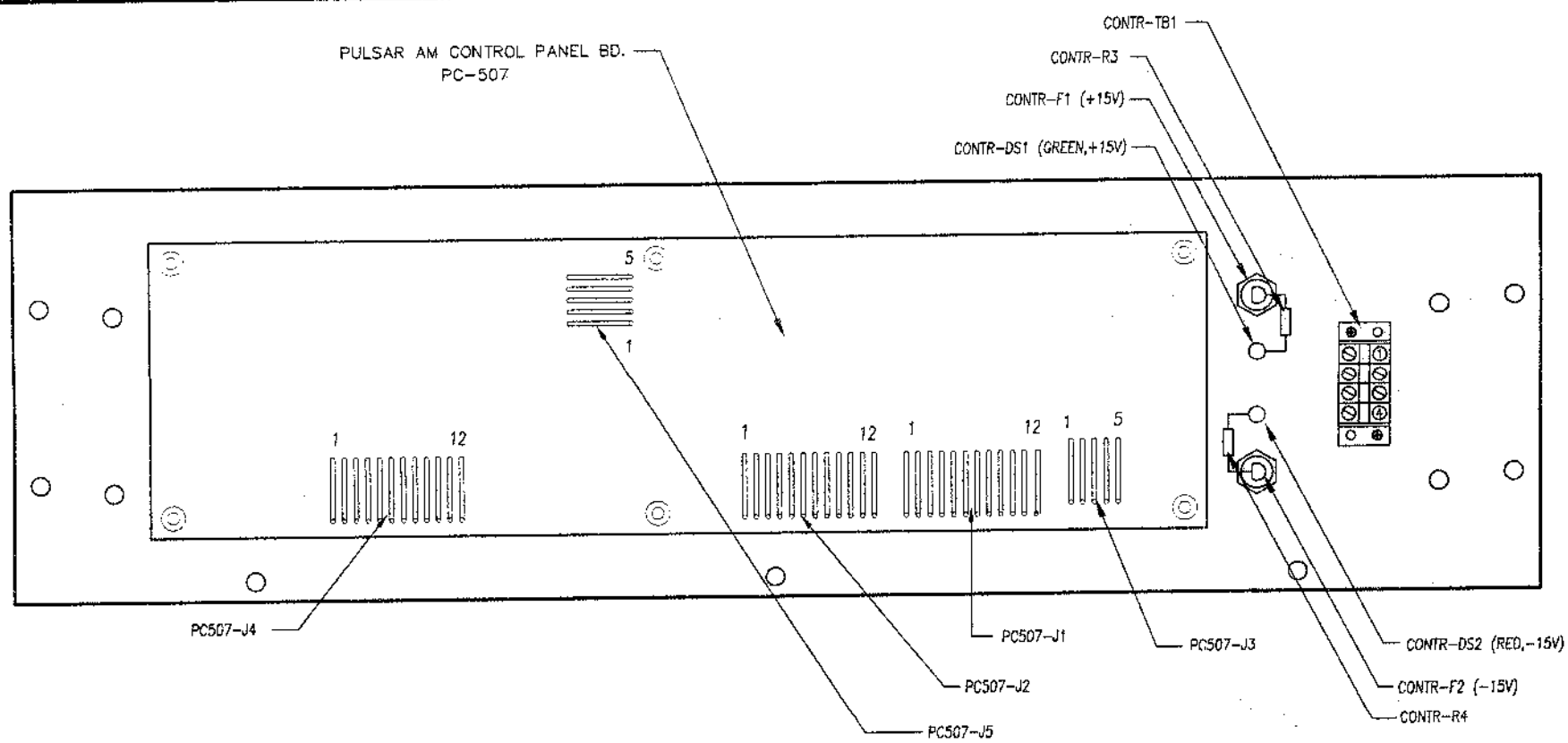


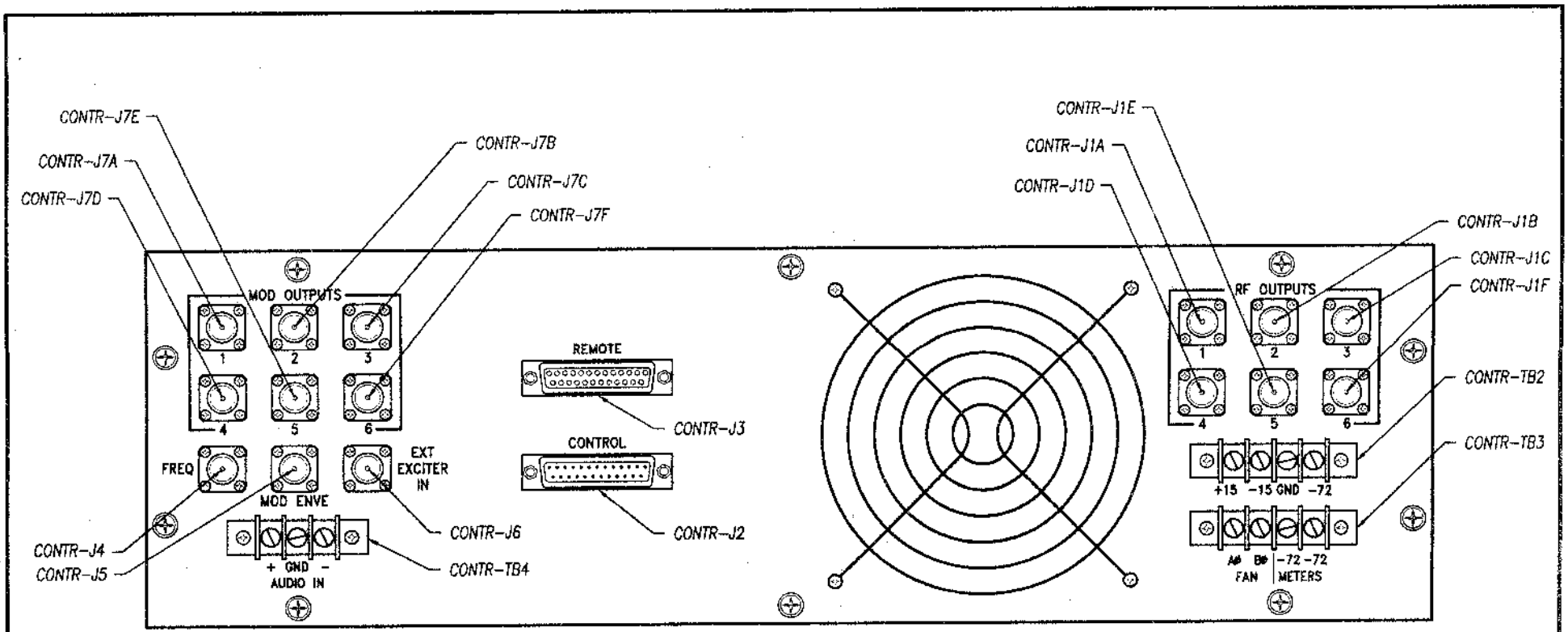
Energy-Onix
BROADCAST EQUIPMENT CO., INC.
1306 RIVER ST., P.O. BOX 801, VALATIE, NY 12184

REVISION:

PULSAR

TITLE: PULSAR 1000 CONTROL DRAWER
FRONT PANEL VIEW (INSIDE)

SCALE: NA	DESIGNED BY:	DATE: 11/29/99	DWG BY: ESB	DWG. No. AM-00100
CAD: AM-PD100		CK BY:		



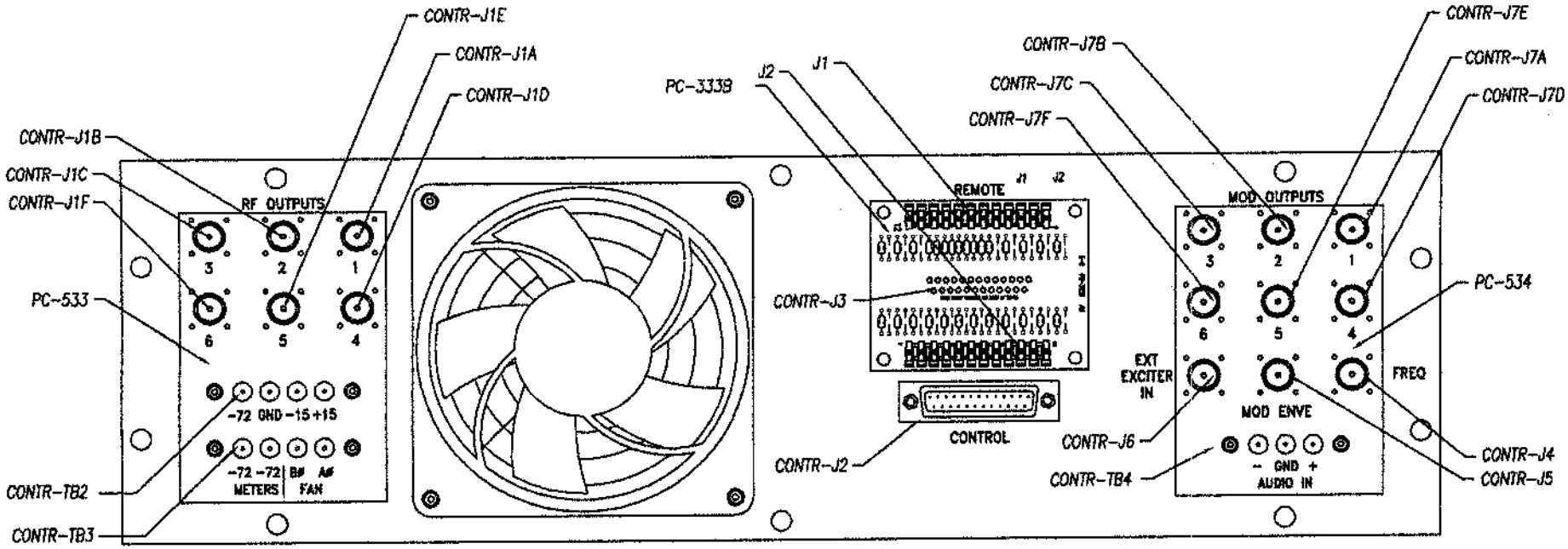
PULSAR

Energy–Onix
BROADCAST EQUIPMENT CO., INC.
1508 RIVER ST., P.O. BOX 801, VALATIE, NY 12184

REVISION DESCRIPTION:	REVISION:
IDENTIFY CONNECTIONS, 11/12/99	A

TITLE: PULSAR CONTROL DRAWER
PANEL VIEW (REAR)

SCALE: NTS	DESIGNED BY:	DATE: 07/26/99	DWG. BY:	DWG. No.
CAD: AM–00040	DDE	CK. BY:	ESB	AM–00040



PULSAR

Energy-Onix
BROADCAST EQUIPMENT CO., INC.
1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184

REVISION DESCRIPTION:	REVISION:

TITLE: PULSAR CONTROL DRAWER
REAR PANEL VIEW (INSIDE)

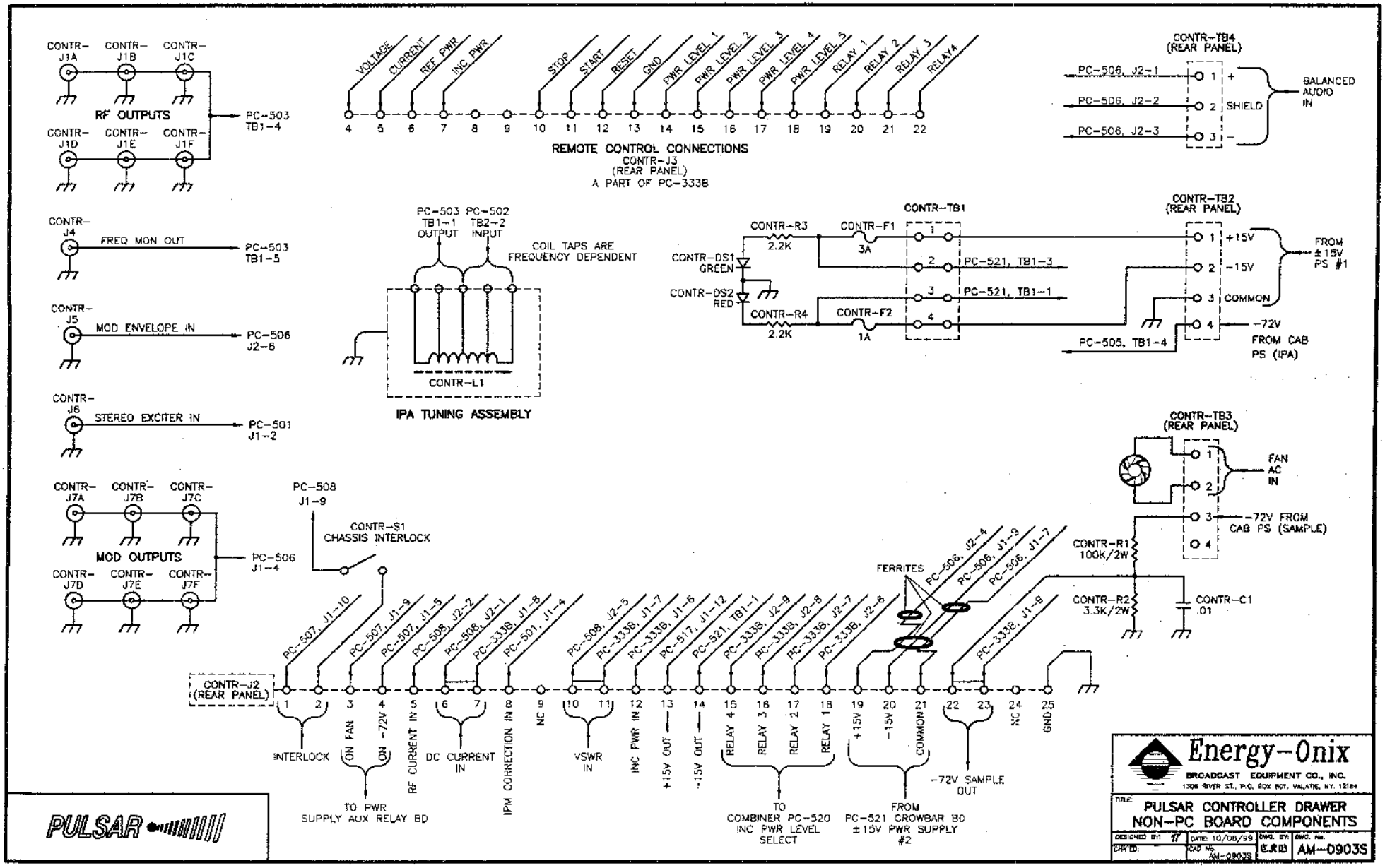
SCALE: NTS	DESIGNED BY:	DATE: 11/29/99	DWG. BY:	DWG. No.
CAD: AM-00090	TT	MODIFIED: 2/28/07 by John McCool	E.S.B	AM-00090

CONTR-F1 3A
CONTR-F2 1A
+15V
-15V
2.2K CONTR-R3
CONTR-DS1 +15V GREEN
2.2K CONTR-R4
CONTR-DS2 -15V RED
TB1 - 1, C 2, + 3
CROWBAR PC521
CONTR-S1 CHASSIS INTERLOCK
IN
IPA TUNING ASSY TUNING COIL
OUT
IPA TUNING BD PC503
RF IN 1
RF OUT 4
FREQ MON 5
RF DRV LVL 6
CONTR-J4 FREQ MON
TB1 1 GND, 2 RF IN, 3 RF ENABLE, 4 -72V
IPA PC502
TB2 4 RF OUT, 3 GND, 2, 1
CONTR-J1 A B C D E F RF OUTPUTS
CONTR-TB2 1 +15V, 2 -15V, 3 GRND, 4 -72V
CONTR-J2
PINS 7,10,12,23 = REMOTE METERING INPUTS
DB25M
CONTR-J6 STEREO EXCITER IN
EXCITER PC501
4X RECYCLER PC517
N.C. RESET, GND, N.C., +15V
-72V SAMPLE BD PC505A
2nd (-72V) ONLY FOR 2.5KW UNITS
CONTR-TB3 4 3 2 1 -72V (VOLTAGE SAMPLE) A B
FAN
CONTR-R1 100K 2W
CONTR-R2 3.3K
CONTR-C1 .01
J3 GND 5, REM C 4, GND 3, LCL C 2, GND 1
J1 REM ON 12, REM OFF 11, INTERLOCK 10, ON FAN 9, TC INTERLOCK 8, CLOSURE 7, RF ENABLE 6, ON -72v 5, RF ENABLE 4, VSWR 3, VOLTS 2, CURRENT 1
J2 DRIVE 12, RF CURRENT 11, +15V 10, DRV DET 9, DRV DET 8, MUTE 7, RESET 6, MOD ENABLE 5, MOD ENABLE 4, ENV DET 3, +15V 2, GND 1
CONTROL PANEL BD PC507
OVERLOAD PC508
VOLTS, VSWR, CURRENT, RF CURRENT, DRIVE
VSWR IN, RF CURRENT IN, DC CURRENT IN, RST, RF DRIVE
J5 5 4 3 2 1
J4 12 11 10 9 8 7 6 5 4 3 2 1
+15V
AUDIO/ PDM DRIVER PC506
J1 1 2 3 4 PDM OUT 5 6 MOD ENABLE 7 GND 8 SHUT BACK 9 -15V 10 -72V 11 GND 12 GAIN CONTROL
FERRITE
CONTR-J2 20 -15V, 21 COMMON, 19 +15V
J3 MUTE 8, 7, MOD ENVELOPE 6, GND 5, +15V 4, 3
AUDIO- GND 2, + 1
J2
CONTR-J5 MOD ENVELOPE IN
CONTR-TB4 (ON BACK PANEL) 3 - AUDIO, 2 SHIELD, 1 + AUDIO
RF DRV ENABLE, MOD DRV ENABLE, SHUT BACK, DRIVE, +15V, RF DET, AUD MUTE, RF DET IN
RF DETECTOR/ ENABLE PC509
REMOTE PC333B
VOLTAGE, CURRENT, REF, FORWARD, STOP, START, RESET
CONTR-J3 (DB25F)
CONTR-J7 A B C D E F MODULATOR OUTPUTS
CONTR-J2 LEVEL 1 18, LEVEL 2 17, LEVEL 3 16, LEVEL 4 15

Energy-Onix
BROADCAST EQUIPMENT CO., INC.
1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184

PULSAR

TITLE: CONTROLLER DRAWER INTERCONNECT DIAGRAM				
SCALE: NA	DESIGNED BY:	DATE: 01/05/00	DWG. BY:	DWG. No.
CAD: AM-0001S		CK BY:		AM-0001S


CONTR-J1A
CONTR-J1B
CONTR-J1C
RF OUTPUTS
CONTR-J1D
CONTR-J1E
CONTR-J1F
PC-503 TB1-4
CONTR-J4
FREQ MON OUT
PC-503 TB1-5
CONTR-J5
MOD ENVELOPE IN
PC-506 J2-6
CONTR-J6
STEREO EXCITER IN
PC-501 J1-2
CONTR-J7A
CONTR-J7B
CONTR-J7C
MOD OUTPUTS
CONTR-J7D
CONTR-J7E
CONTR-J7F
PC-506 J1-4
VOLTAGE
CURRENT
REF PWR
INC PWR
STOP
START
RESET
GND
PWR LEVEL 1
PWR LEVEL 2
PWR LEVEL 3
PWR LEVEL 4
PWR LEVEL 5
RELAY 1
RELAY 2
RELAY 3
RELAY4
4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22
REMOTE CONTROL CONNECTIONS
CONTR-J3
(REAR PANEL)
A PART OF PC-333B
CONTR-TB4
(REAR PANEL)
PC-506, J2-1
PC-506, J2-2
PC-506, J2-3
SHIELD
BALANCED AUDIO IN
PC-503 TB1-1 OUTPUT
PC-502 TB2-2 INPUT
COIL TAPS ARE FREQUENCY DEPENDENT
CONTR-L1
IPA TUNING ASSEMBLY
CONTR-TB1
CONTR-R3
2.2K
CONTR-F1
3A
CONTR-DS1 GREEN
CONTR-DS2 RED
CONTR-R4
2.2K
CONTR-F2
1A
PC-521, TB1-3
PC-521, TB1-1
PC-505, TB1-4
CONTR-TB2
(REAR PANEL)
+15V
-15V
COMMON
-72V
FROM ±15V PS #1
FROM CAB PS (IPA)
CONTR-TB3
(REAR PANEL)
FAN AC IN
-72V FROM CAB PS (SAMPLE)
CONTR-R1
100K/2W
CONTR-R2
3.3K/2W
CONTR-C1
.01
FERRITES
PC-506, J2-4
PC-506, J1-9
PC-506, J1-7
PC-508 J1-9
CONTR-S1
CHASSIS INTERLOCK
PC-507, J1-10
PC-507, J1-9
PC-507, J1-5
PC-508, J2-2
PC-508, J2-1
PC-333B, J1-8
PC-501, J1-4
PC-508, J2-5
PC-333B, J1-7
PC-333B, J1-6
PC-517, J1-12
PC-521, TB1-1
PC-333B, J2-9
PC-333B, J2-8
PC-333B, J2-7
PC-333B, J2-6
PC-333B, J1-9
CONTR-J2
(REAR PANEL)
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25
INTERLOCK
ON FAN
ON -72V
RF CURRENT IN
DC CURRENT IN
IPM CORRECTION IN
NC
VSWR IN
INC PWR IN
+15V OUT
-15V OUT
RELAY 4
RELAY 3
RELAY 2
RELAY 1
+15V
-15V
COMMON
-72V SAMPLE OUT
NC
GND
TO PWR SUPPLY AUX RELAY BD
TO COMBINER PC-520 INC PWR LEVEL SELECT
FROM PC-521 CROWBAR BD ±15V PWR SUPPLY #2
PULSAR
Energy-Onix
BROADCAST EQUIPMENT CO., INC.
1306 RIVER ST., P.O. BOX 807, VALATIE, NY. 12184
TITLE:
PULSAR CONTROLLER DRAWER
NON-PC BOARD COMPONENTS
DESIGNED BY:
DRAWN:
DATE: 10/08/99
CAD No. AM-0903S
DWG. BY:
DWG. No. AM-0903S

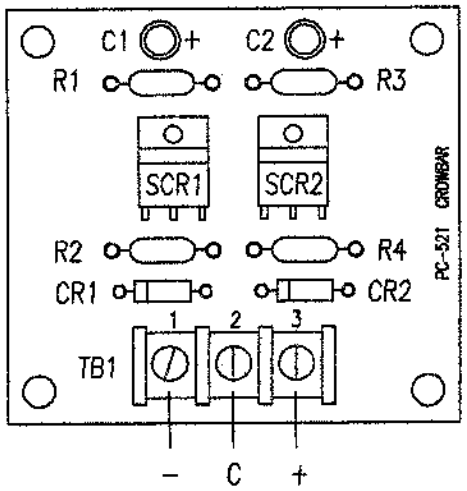
PULSAR CONTROLLER DRAWER

NON - PC BOARD COMPONENTS

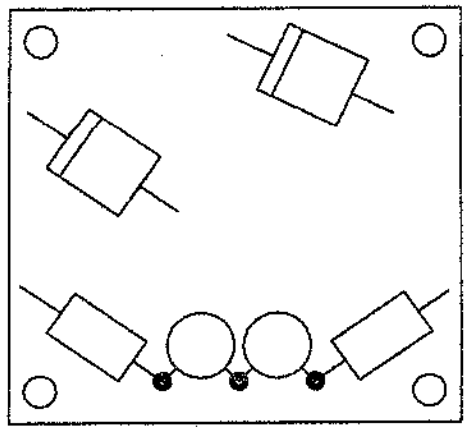
PARTS LIST

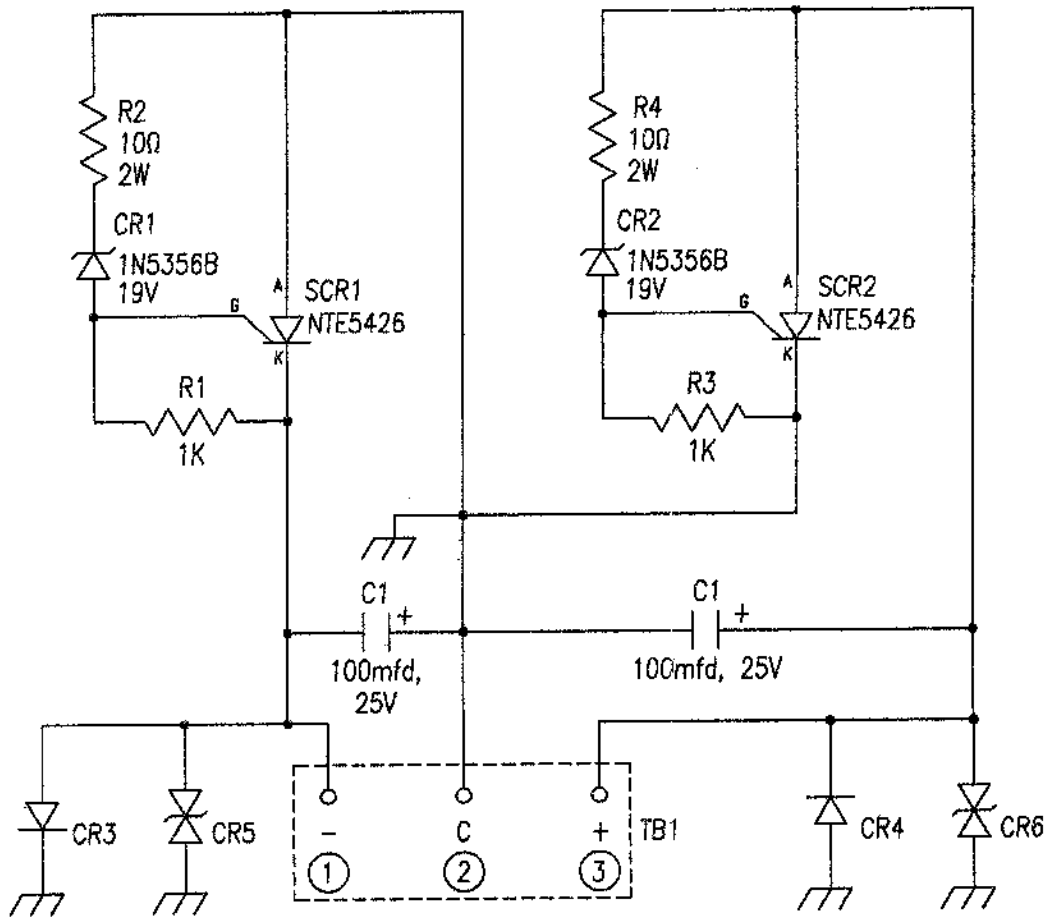
CONTR C1	.01μF/1KV DISC CERAMIC	
CONTR DS1	LED, GREEN	
CONTR DS2	LED, RED	
CONTR F1	FUSE, 3A	
CONTR F2	FUSE, 1A	
CONTR J1A-J1F,)		
CONTR J4-J6,)	BNC FEMALE	
CONTR J7A-J7F)		
CONTR J2	DB 25, MALE	
CONTR J3	DB 25, FEMALE	
CONTR L1	IPA TUNING ASSEMBLY	
CONTR R1	100K, 2W	
CONTR R2	3.3K, 2W	
CONTR R3, R4	2.2K, 1/4W	
CONTR S1	INTERLOCK SWITCH	MICRO SWITCH DM401
CONTR TB1	4 POSITION BARRIER, 15A	
CONTR TB2,TB3	4 POSITION CHASSIS MOUNT, 20A	
CONTR TB4	3 POSITION CHASSIS MOUNT, 20A	

TOP



BOTTOM



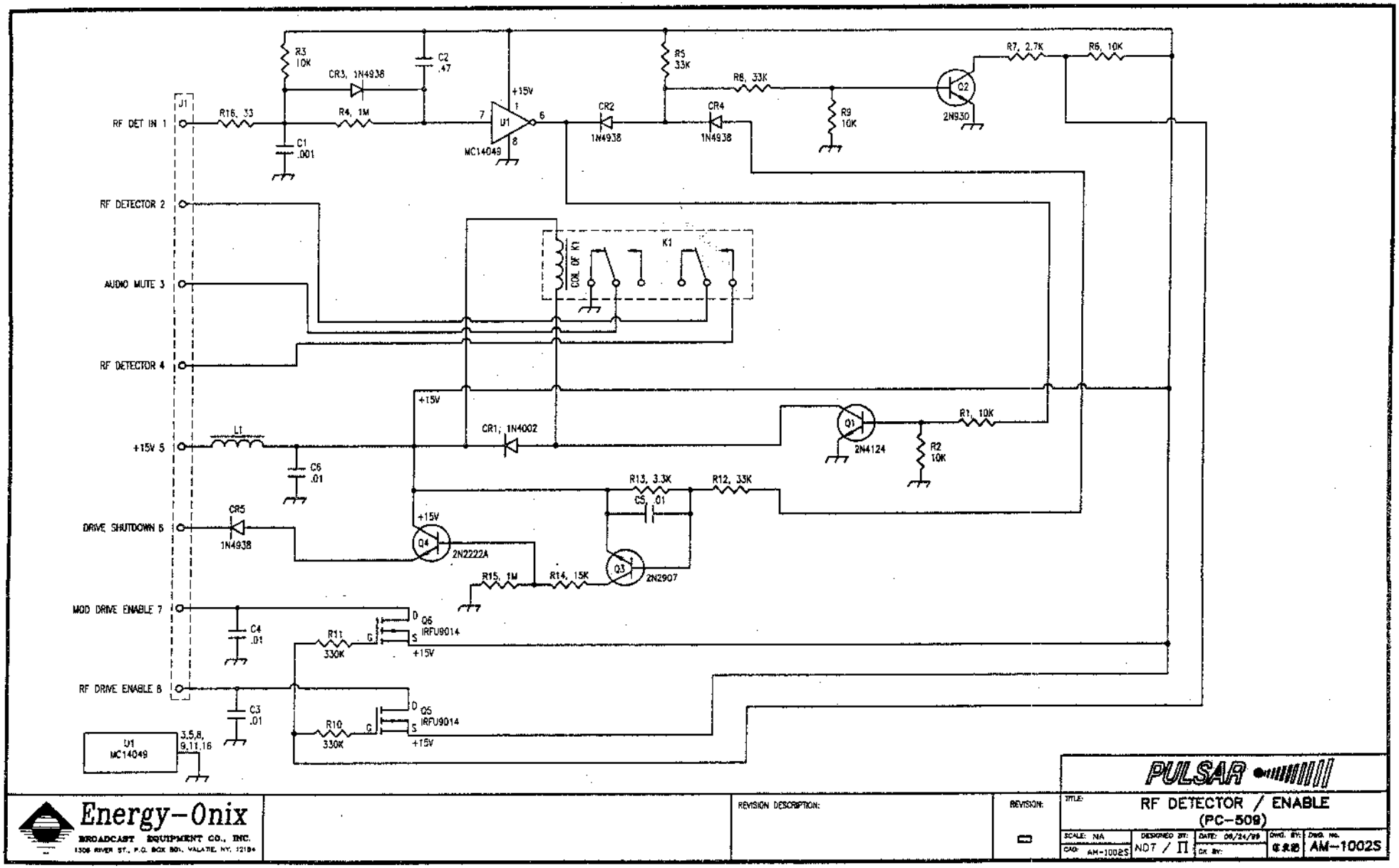


Energy–Onix BROADCAST EQUIPMENT CO., INC. 1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184	REVISION DESCRIPTION:	REVISION:	TITLE: POWER SUPPLY CROWBAR BD PC–521 COMPONENT LAYOUT
			DESIGNED BY: NDT DATE: 5/19/99 DWG. BY: CKB DWG. No. AM–0202C MODIFIED: 3/5/07 by John McCool CAD No. AM–0202C

PC- 521 ± 15V PS CROWBAR BOARD

PARTS LIST

C1, C2	100μF, 25V ELECTROLYTIC
CR1, CR2	1N5356B 19V ZENER
R1, R3	1K, 1/4W
R2, R4	10ohm, 2W
SCR1, SCR2	50802DH
TB1	3 POSITION, PC MOUNT



Energy–Onix
BROADCAST EQUIPMENT CO., INC.
1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184

REVISION DESCRIPTION:

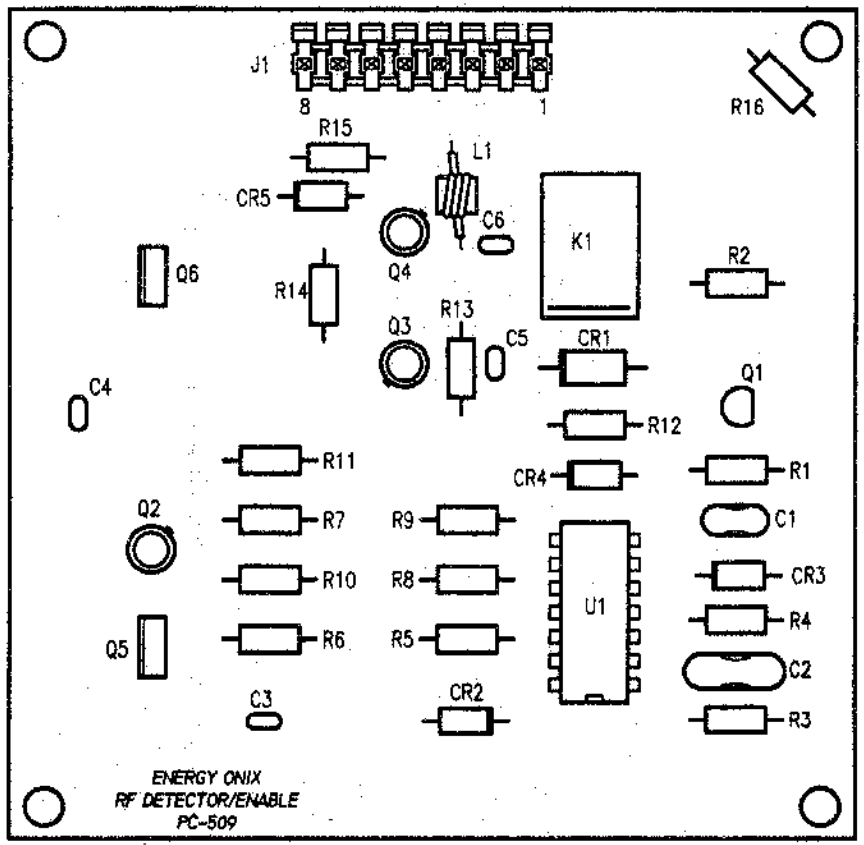
REVISION:

PULSAR

TITLE: RF DETECTOR / ENABLE (PC–509)

SCALE: NA | DESIGNED BY: NDT / Π | DATE: 06/24/99 | DWG. BY: | DWG. No. AM–1002S

CAD: AM–1002S | CK BY:



PULSAR

Energy-Onix
BROADCAST EQUIPMENT CO., INC.
1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184

REVISION DESCRIPTION:	REVISION:

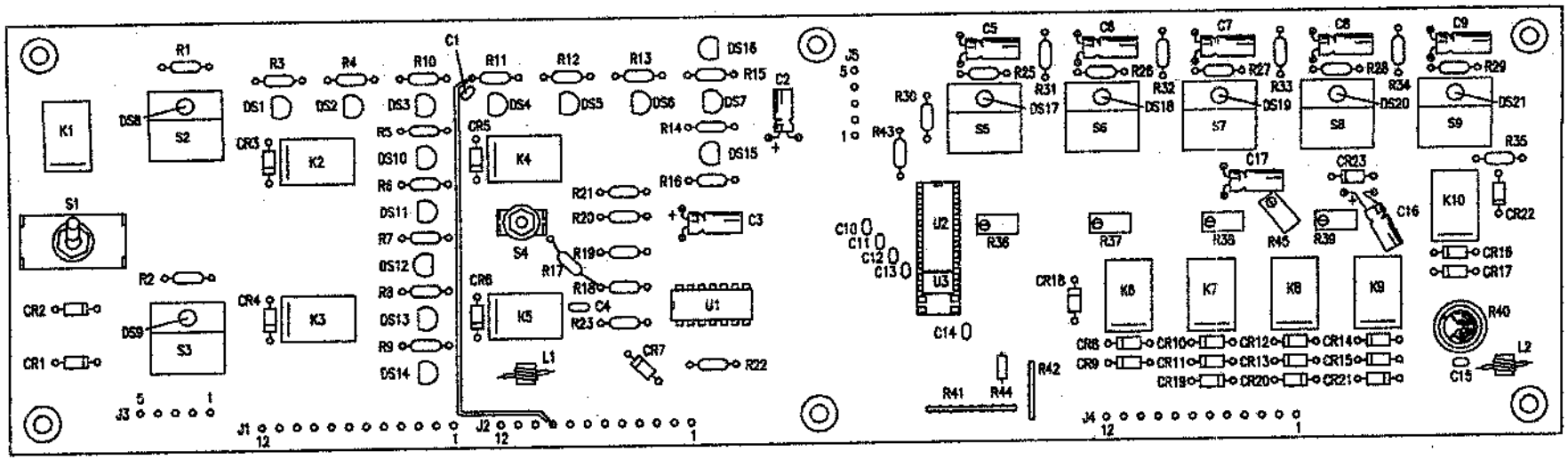
TITLE: RF DETECTOR/ENABLE PCB COMPONENT LAYOUT (PC-509)

DESIGNED BY: NDT	DATE: 5/12/99	DWG. BY:	DWG. No
CHK'ED:	CAD: AM-1002C	CRB	AM-1002C

PC - 509 DETECTOR/ENABLE

PARTS LIST

C1	.001μF/1KV DISC CERAMIC	
C2	.47 μF/100V METAL POLY	EF1474
C3-C6	.01 μF/100V MONO. CERAMIC	P4904
CR1	1N4002	
CR2-CR5	1N4938	
J1	8-PIN MOLEX HEADER	
K1	AROMAT, NON-LATCHING	
L1	FERRITE BEAD	21-129B
Q1	2N4124	
Q2	2N930	
Q3	2N2907	
Q4	2N2222A	
Q5,Q6	IRFU9014	
R1,R2,R3,R6,R9	10K, 1/4W	
R4,R15	1M,1/4W	
R5,R8,R12	33K, 1/4W	
R7	2.7K, 1/4W	
R10,R11	330K, 1/4	
R13	3.3K, 1/4W	
R14	15K, 1/4W	
R16	33 OHMS, 1/4W	
U1	MC14049	
XU1	16-PIN IC SOCKET	

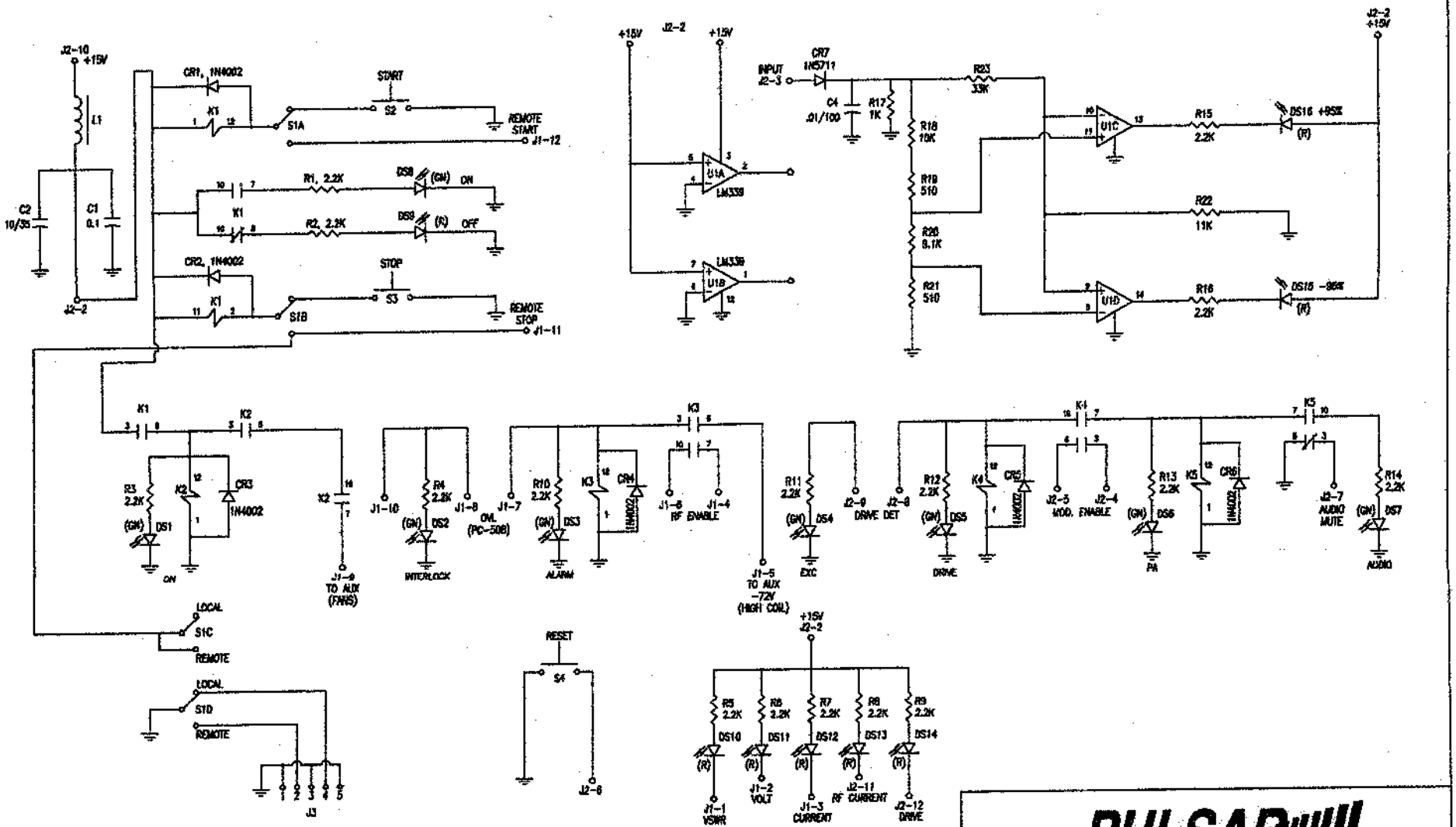


NOTE: J1-J5, R45 ON BACK OF BOARD

Energy-Onix
BROADCAST EQUIPMENT CO., INC.
1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184

PULSAR

TITLE: PULSAR AM CONTROL PANEL BD. PC-507 COMPONENT LAYOUT					
SCALE: NA	DESIGNED BY: NDT	DATE: 08/08/89	DWG. BY:	DWG. No.	
CAD: AM-0901C		MODIFIED: 3/2/07 by John McCool		AM-0901C	



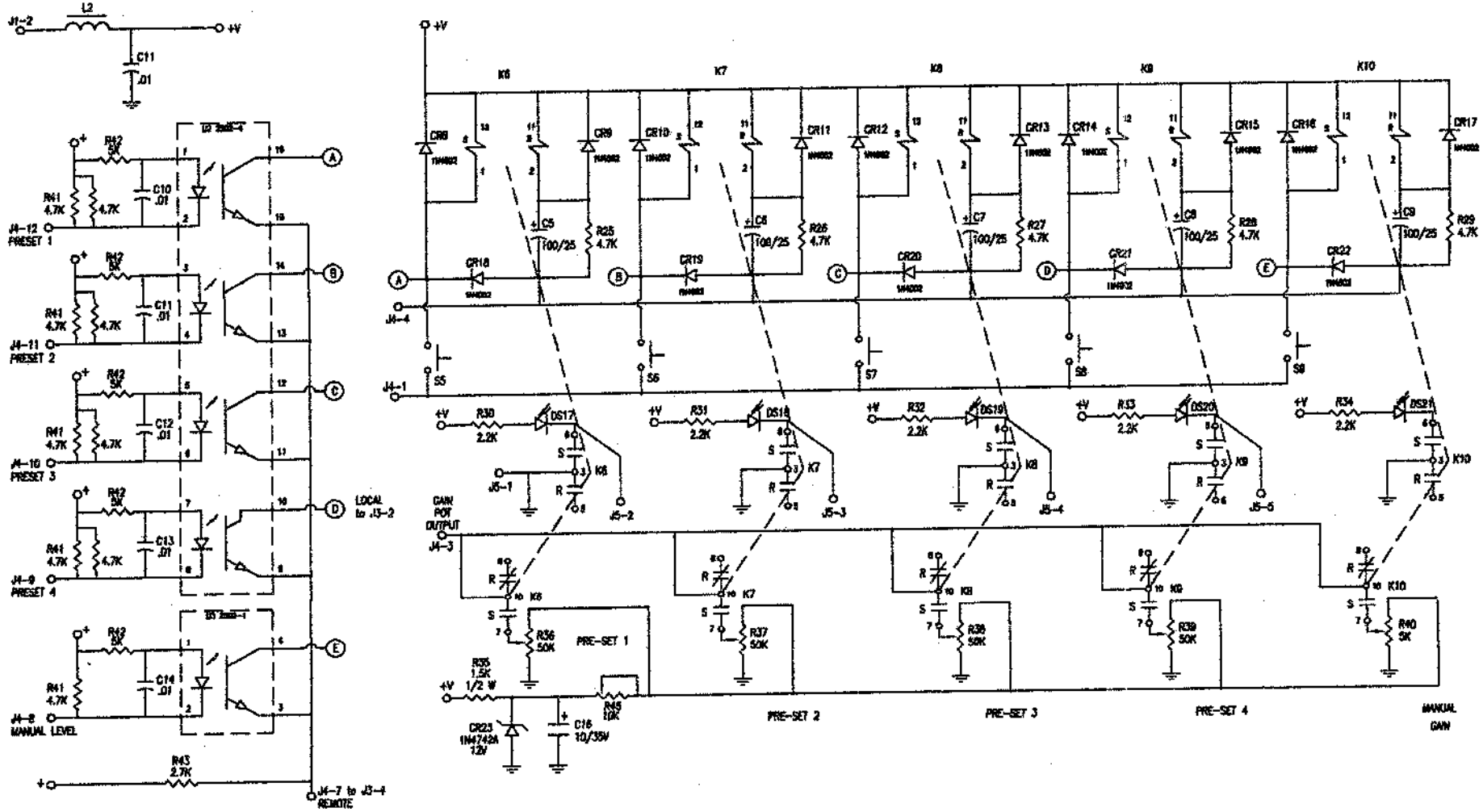
PULSAR

Energy-Onix
BROADCAST EQUIPMENT CO., INC.
1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184

REVISION DESCRIPTION:	REVISION:
RELABLE U1D, 1/11/99 COMPONENT ID REASIGNMENTS, 8/31/99	B

TITLE: CONTROL PANEL BOARD
PC-507 SCHEMATIC DIAGRAM

SCALE: NA	DESIGNED BY:	DATE: 11/09/98	DWG. BY:	DWG. No.
CAD: AM-0901S	NDT	MODIFIED: 3/2/07 by John McCool	CRB	AM-0901S SHEET: 1/2

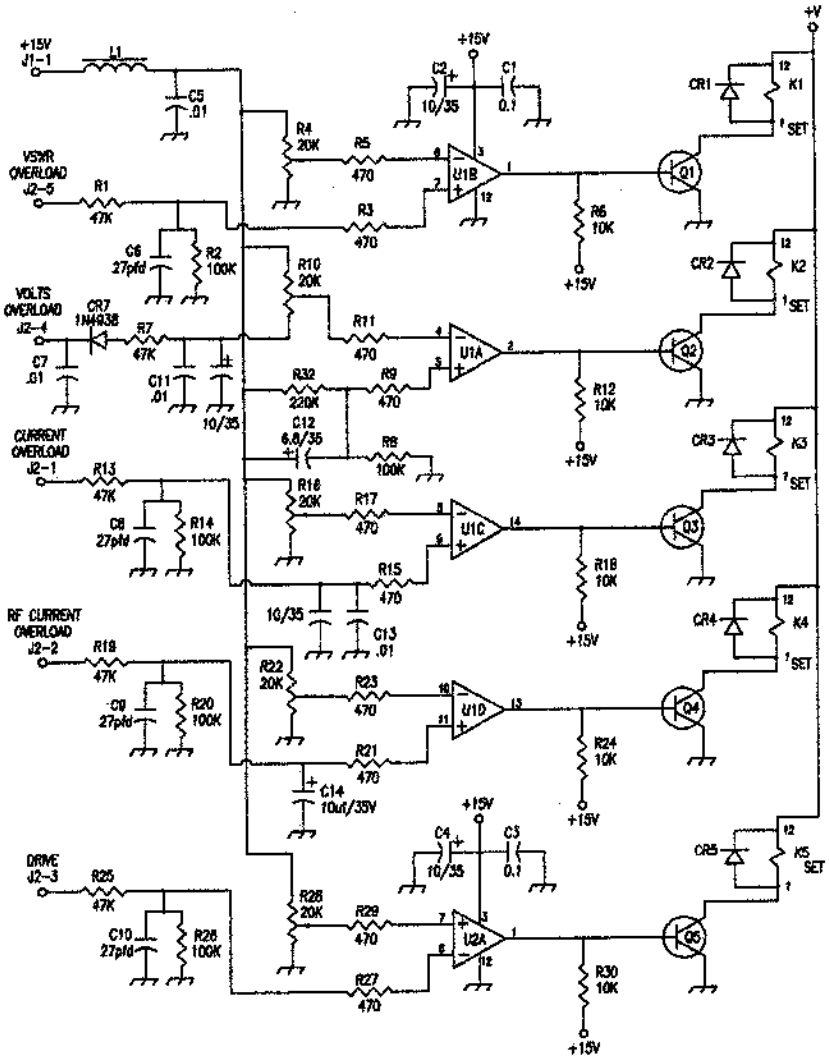


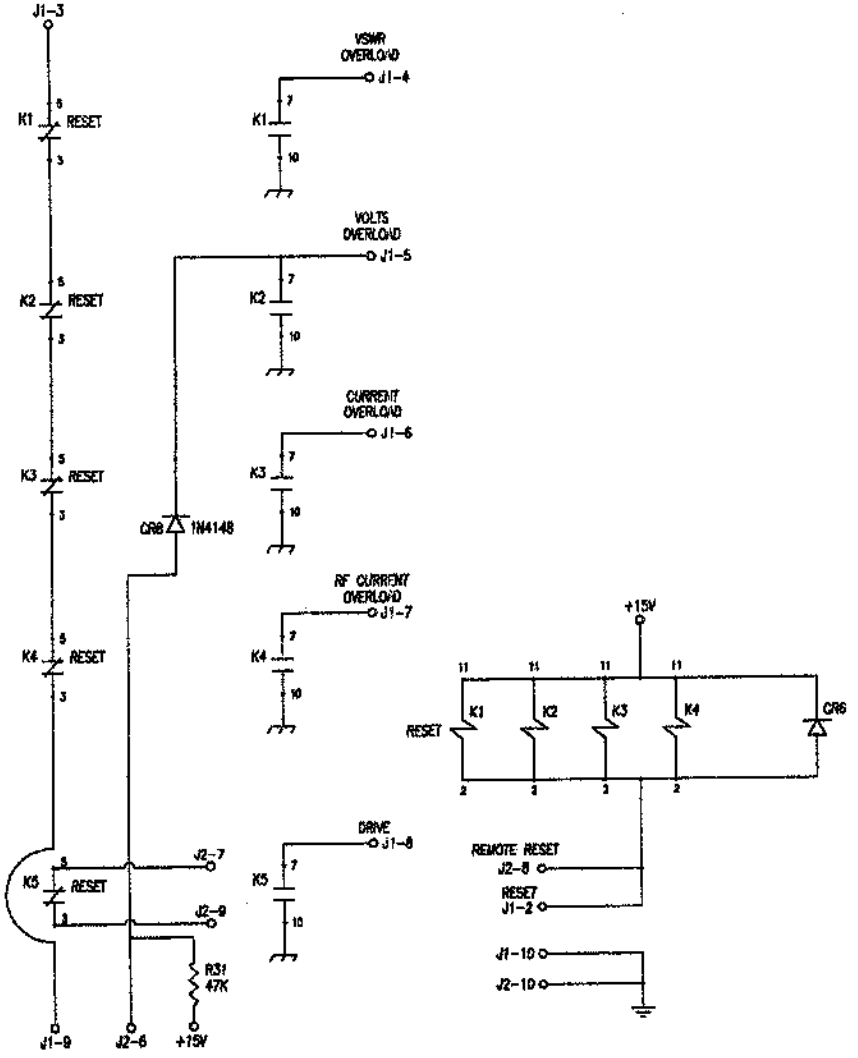
Energy–Onix BROADCAST EQUIPMENT CO., INC. 1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184	REVISION DESCRIPTION: CHG S1-15 TO OPEN POSITION, ADDED F,G,H,I 01-11-99 C. GEN. REV., 07-30-01, DH	REVISION: C	TITLE: CONTROL PANEL BOARD PC-507 SCHEMATIC DIAGRAM		
			SCALE: NA CAD: AM-0902S	DESIGNED BY: NDT	DATE: 11/10/98 MODIFIED: 3/2/07 by John McCool DWG. BY: C.S.G. DWG. No. AM-0902S SHEET: 2/2

PC - 507 CONTROL PANEL BOARD

PARTS LIST

C1,C10-C15	.01μF/100V MONO. CERAMIC	P4904
C2,C16, C17	10μF/35V ELECTROLYTIC	
C3,C5-C9	100μF/25V ELECTROLYTIC	
C4	.01μF/100V STACK METAL FILM	
CR1-CR6,CR8-CR22	1N4002	
CR7	1N5711	
CR23	1N4742A, 12V ZENER	
DS1-DS7	LED, GREEN	
DS8,DS17-DS21	LED, GREEN, PART OF S2,S5-S9	
DS9	LED, RED, PART OF S3	
DS10-DS16	LED, RED	
J1,J2,J4	12 - PIN MOLEX HEADER, ANGLE	
J3	5 - PIN MOLEX HEADER, ANGLE	
J5	5 - PIN MOLEX HEADER, STRAIGHT	
K1,K6-K10	AROMAT, LATCHING	
K2-K5	AROMAT, NON-LATCHING	
L1,L2	FERRITE BEAD	21-129B
R1-R16,R30-R34	2.2K, 1/4W	
R17	1K, 1/4W	
R18,R44	10K, 1/4W	
R19,R21	510 OHMS, 1/4W	
R20	9.1K, 1/4W	
R22	11K, 1/4W	
R23	33K, 1/4W	
R24	VALUE SELECTED IN TEST	
R25-R29	4.7K, 1/4W	
R35,R43	2.7K, 1/4W	
R36-R39	50K VARIABLE, MULTI-TURN	
R40	5K VARIABLE, SINGLE TURN	CM46434
R41	10K, 9-ELEMENT	71-CSL10A01-10K
R42	15K, 5-ELEMENT	569-L61-15K
R45	10K VARIABLE, MULTI-TURN	
S1	4PDT TOGGLE	EATON 65F1699
S2,S3,S5-S9	PUSH BUTTON, MOMENTARY W/LED	C & K MP01
S4	PUSH BUTTON, MOMENTARY	C & K 8125
U1	339 OP AMP	
U2	2502-4 OPTO COUPLER	
U3	2502-1 OPTO COUPLER	
XU1	14-PIN IC SOCKET	
XU2	16-PIN IC SOCKET	
XU3	8-PIN IC SOCKET	





Energy-Onix
BROADCAST EQUIPMENT CO., INC.
1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184

REVISION DESCRIPTION:

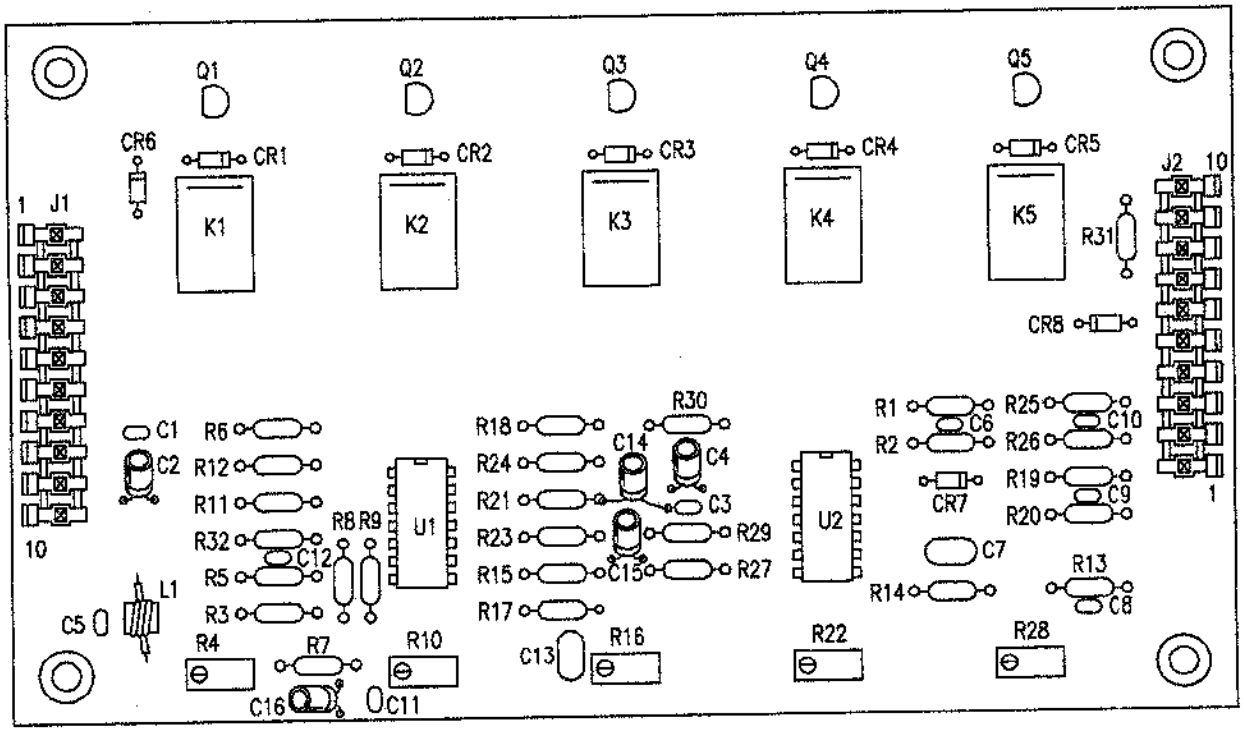
REMOVED J2-7 FROM GND.,ADDED CR8,CR9,R31, 07/13/99
ADDED J2-7 TO GND., 07/20/99
CHG R31 CALLOUT TO R32, CHGD C5,C11 VALUE, DWG # CHG, 08/13/99

REVISION: C

PULSAR

TITLE: OVERLOAD BOARD SCHEMATIC (PC-508)

SCALE: NA	DESIGNED BY: NDT / Π	DATE: 08/24/99 MODIFIED: 3/2/07 by John McCool	DWG. BY:	DWG. No. AM-1001S
CAD: AM-1001S				

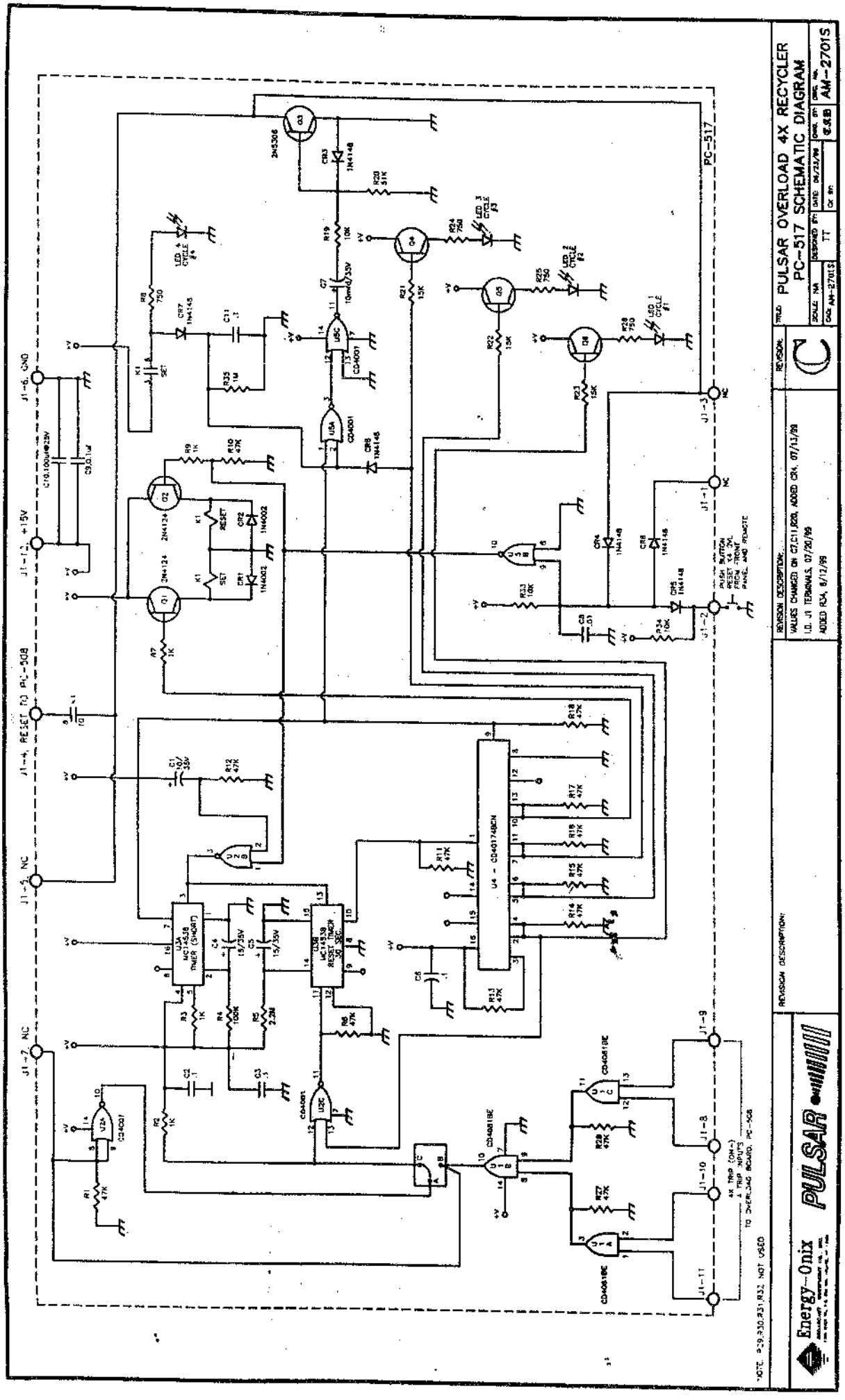


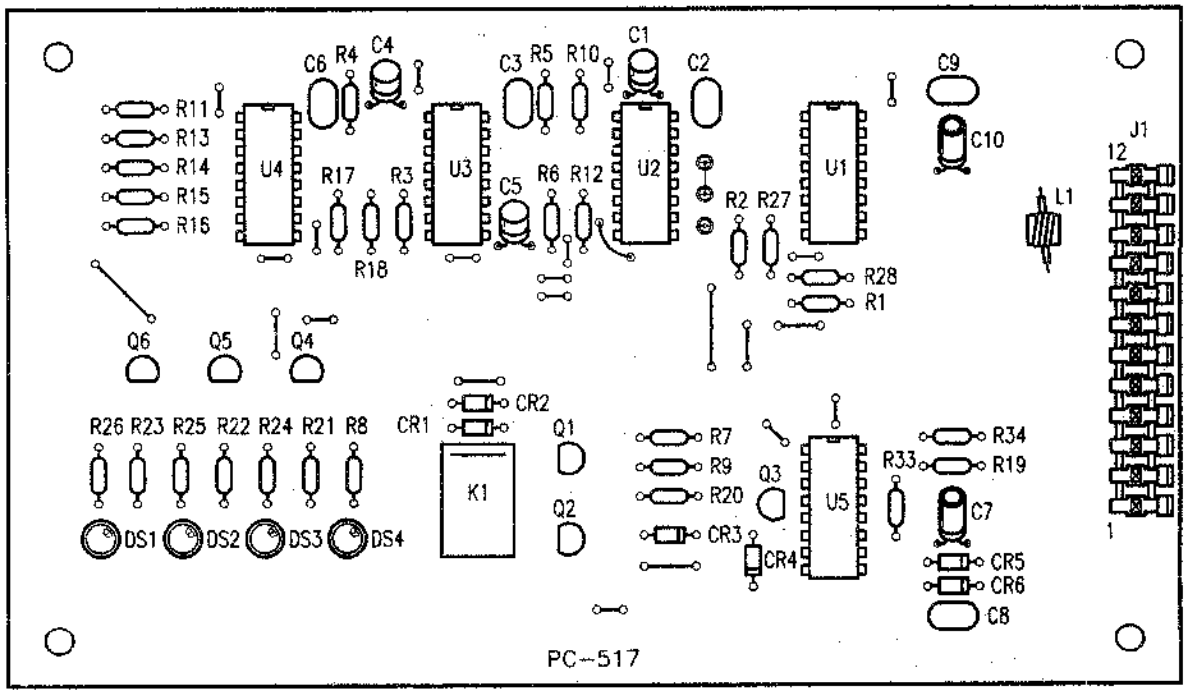
Energy–Onix BROADCAST EQUIPMENT CO., INC. 1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184	REVISION DESCRIPTION:	REVISION:	PULSAR TITLE: PULSAR AM OVERLOAD BD. PC–508 COMPONENT LAYOUT DESIGNED BY: NDT · DATE: 06/09/99 · DWG. BY: · DWG. No. MODIFIED: 3/2/07 by John McCool · CAD: AM–1001C · CRB · AM–1001C

PC- 508 OVERLOAD BOARD

PARTS LIST

C1,C3	0.1 μF/100V MONO. CERAMIC	P4910
C2,C4,C14	10 μF/35V ELECTROLYTIC	
C5,C11	.01 μF/100V MONO. CERAMIC	
C6,C8,C9,C10	27μμF DISC CERAMIC	1331-PH-ND
C7	.01 μF DISC CERAMIC	
C12	6.8 μF/35V TANT.	
C13	.01/100V STACK METAL FILM	
CR1 - CR6	1N4002	
CR7	1N4938	
CR8,CR9	1N4148	
J1	10 PIN MOLEX HEADER	
J2	8 PIN MOLEX HEADER	
K1 - K5	AROMAT RELAY, LATCHING	
L1	5.8MM FERRITE BEAD	21-129B
Q1 - Q5	2N4124	
R1,R7,R13,R19,R25,R31	47K, 1/4W	
R2,R8,R14,R20,R26	100K, 1/4W	
R3,R5,R9,R11,R15,R17, R21,R23,R27,R29	470 OHMS, 1/4W	
R4,R10,R16,R22,R28	20K VARIABLE, MULTI-TURN	
R6,R12,R18,R24,R30	10K, 1/4W	
R32	220K, 1/4W	
U1,U2	339 OP AMP	
XU1,XU2	14-PIN IC SOCKET	


PULSAR OVERLOAD 4X RECYCLER
PC-517 SCHEMATIC DIAGRAM
AM-2701S
PC-517
Energy-Onix
PULSAR
J1-6, GND
J1-12, +15V
J1-4, RESET TO PC-508
J1-5, NC
J1-7, NC
J1-1, NC
J1-2
J1-3, NC
J1-9
J1-8
J1-10
J1-11
LED 4 CYCLE #4
LED 3 CYCLE #3
LED 2 CYCLE #2
LED 1 CYCLE #1
PUSH BUTTON RESET 14 CYL FROM FRONT PANEL AND REMOTE
4X TRIP (OM-) 4 TRIP INPUTS
TO OVERLOAD BOARD, PC-508
REVISION DESCRIPTION:
VALUES CHANGED ON C7,C11,R20, ADDED CR4, 07/13/99
I.D. J1 TERMINALS, 07/20/99
ADDED R34, 8/12/99
REVISION:
C
TITLE:
SCALE: NA
DESIGNED BY: TT
DATE: 06/23/99
CAD: AM-2701S
DWG. NO.
AM-2701S



C11,CR7,CR8,R35 ON BACK OF BOARD

PULSAR

Energy-Onix
BROADCAST EQUIPMENT CO., INC.
1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184

REVISION DESCRIPTION:	REVISION:

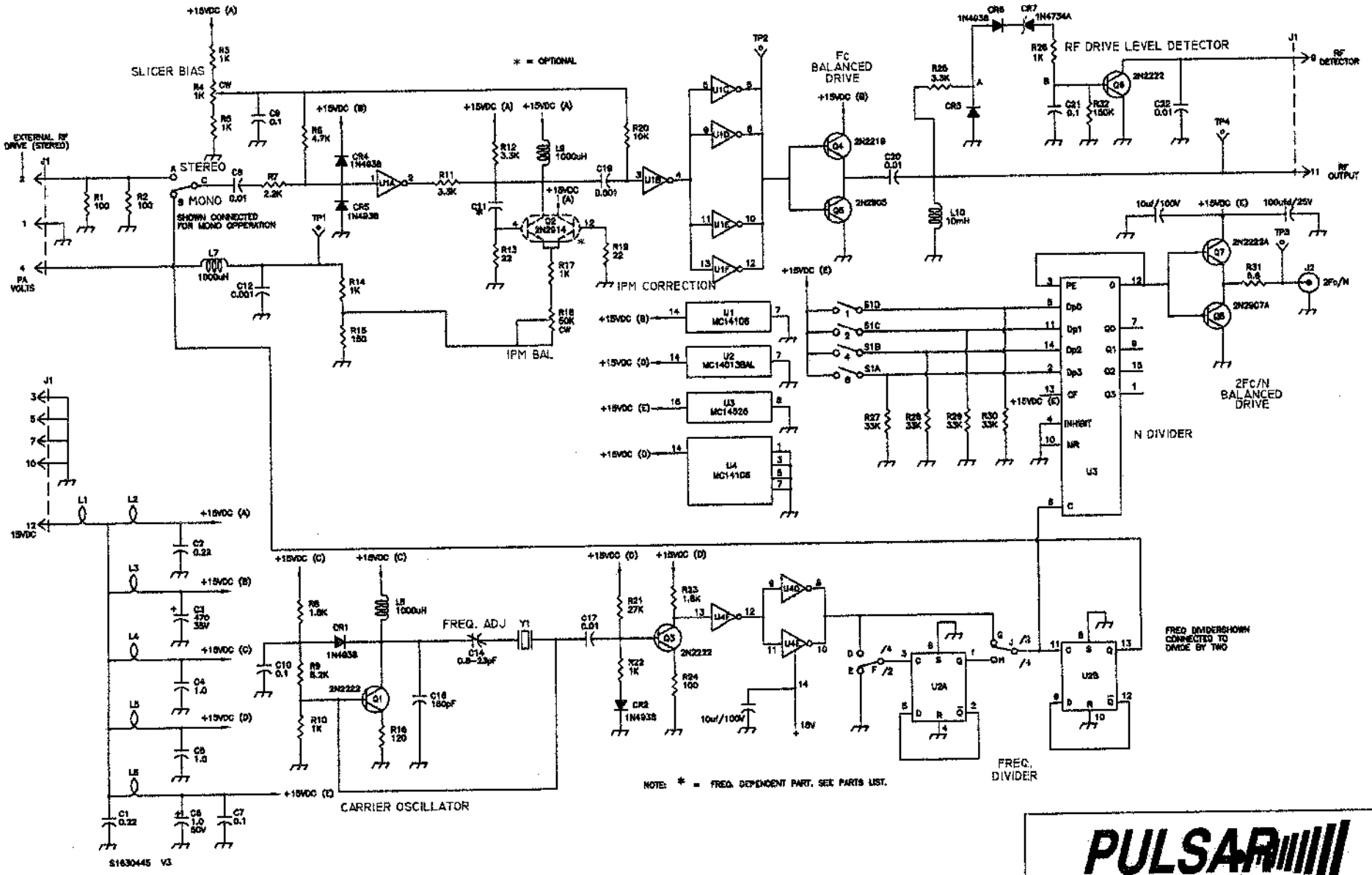
TITLE: PULSAR AM 4X RECYCL BD.
PC-517 COMPONENT LAYOUT

DESIGNED BY: NDT	DATE: 06/08/99	DWG. BY:	DWG. No.
CHK'ED:	CAD: AM-2701C	CRB	AM-2701C

PC-517 4 X RECYCLE BOARD

PARTS LIST

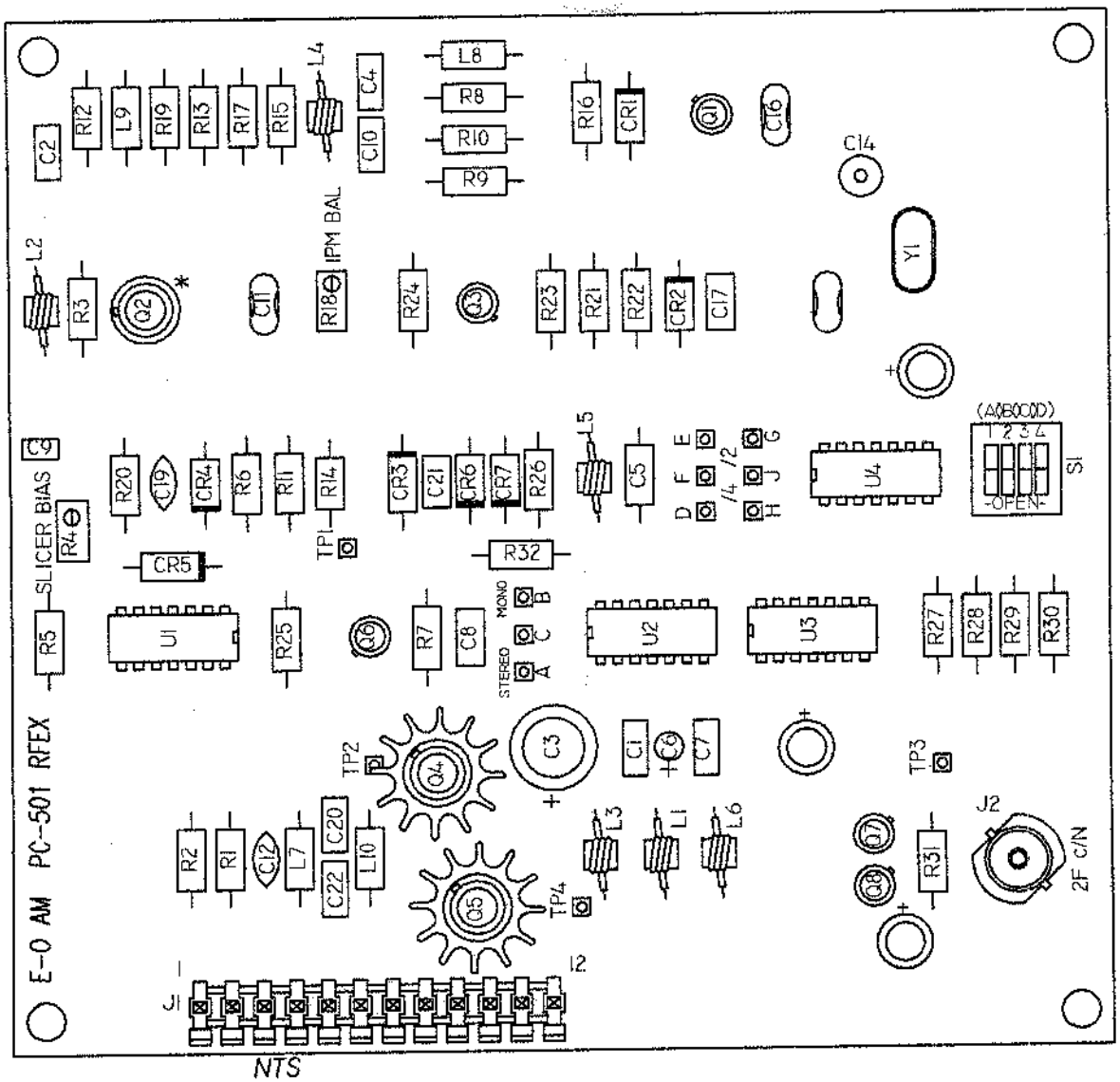
C1,C7	CAPACITOR, ELECTROLYTIC	10mFD/35V
C2,C3,C6,C9,C11	CAPACITOR, STACK METAL FILM	0.1mFD/I00V
C4,C5	CAPACITOR, ELECTROLYTIC	15mFD/35V
C8	STACK METAL FILM	.01/100V
C10	CAPACITOR, ELECTROLYTIC	100mFD/25V
CR1,CR2	DIODE,GENERAL PURPOSE	1N4002
CR3-CR8	DIODE,SILICON,FAST SWITCHING 100PRV	1N4148
K1	RELAY,AROMAT 12V, LATCHING	
J1	12 POSITION MOLEX HEADER,STRAIGHT	
L1	FERRITE BEAD, 5.8mm 21-129B	
LED1-LED4	LIGHT EMITTING DIODE, RED	
Q1,Q2,Q4,Q5,Q6	TRANSISTOR, NPN	2N4124
Q3	TRANSISTOR, NPN DARLINGTON	2N5306
R1	RESISTOR, METAL FILM	47K,1/4W
R2,R3	RESISTOR, METAL FILM	1K,1/4W
R4	RESISTOR, METAL FILM	100K,1/4W
R5	RESISTOR, METAL FILM	2.2M,1/4W
R6	RESISTOR, METAL FILM	47K,1/4W
R7	RESISTOR, METAL FILM	1K,1/4W
R8	RESISTOR, METAL FILM	750,1/4W
R9	RESISTOR, METAL FILM	1K,1/4W
R10-R18	RESISTOR, METAL FILM	47K,1/4W
R19	RESISTOR, METAL FILM	10K,1/4W
R20	RESISTOR, METAL FILM	51K,1/4W
R21-R23	RESISTOR, METAL FILM	15K,1/4W
R24-26	RESISTOR, METAL FILM	750,1/4W
R27,R28	RESISTOR, METAL FILM	47K,1/4W
R29,R30,R31,R32	NOT USED	
R33,R34	RESISTOR, METAL FILM	10K,1/4W
R35	RESISTOR, METAL FILM	1M,1/4W
U1	IC,C-MOS,QUAD 2-INPUT AND GATE	CD4081BE
U2,U5	IC,C-MOS,QUAD 2-INPUT NOR GATE	CD4001BE
U3	IC,C-MOS,DUAL PRECISION RETRIGGER-ABLE RESETTABLE MONOSTABLE MULTI VIBRATOR	MC14538BE
U4	IC,C-MOS HEX 'D' FLIP FLOP	CD40174BCN
X1,X2,X5	SOCKET, IC 14 PIN	
X3,X4	SOCKET, 16 PIN	



PULSAR

Energy–Onix BROADCAST EQUIPMENT CO., INC. 1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184	REVISION DESCRIPTION: ADDED R32, 07/12/99 U1,U4 PT# CHG, U40,U2A,U2B CONNECTIONS CHG, 8/16/99

REVISIONS:	TITLE: RF EXCITER RF DRIVE SCHEMATIC (PC–501)			
B	DESIGNED BY: N.D.T.	DATE: 10/29/98 MODIFIED: 3/1/07 by John McCool	DWG. BY: GRB	DWG. No. AM–0101S
CAD: AM–0101S				



* = OPTIONAL

PULSAR

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BROADCAST EQUIPMENT CO., INC.
1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184

REVISION DESCRIPTION:	REVISION:
COMPONENT ADDITIONS, REMOVAL, 5/12/99 COMPONENT ADDITIONS, REMOVAL, ID, 8/13/99 ADD Y1, 8/20/99	C

TITLE: RF EXCITER PCB COMPONENT LAYOUT (PC–501)

DESIGNED BY: NDT	DATE: 10/30/98	DWG. BY:	DWG. No.
MODIFIED: 3/1/07 by John McCool	CAD: AM–0101C	CRB	AM–0101C

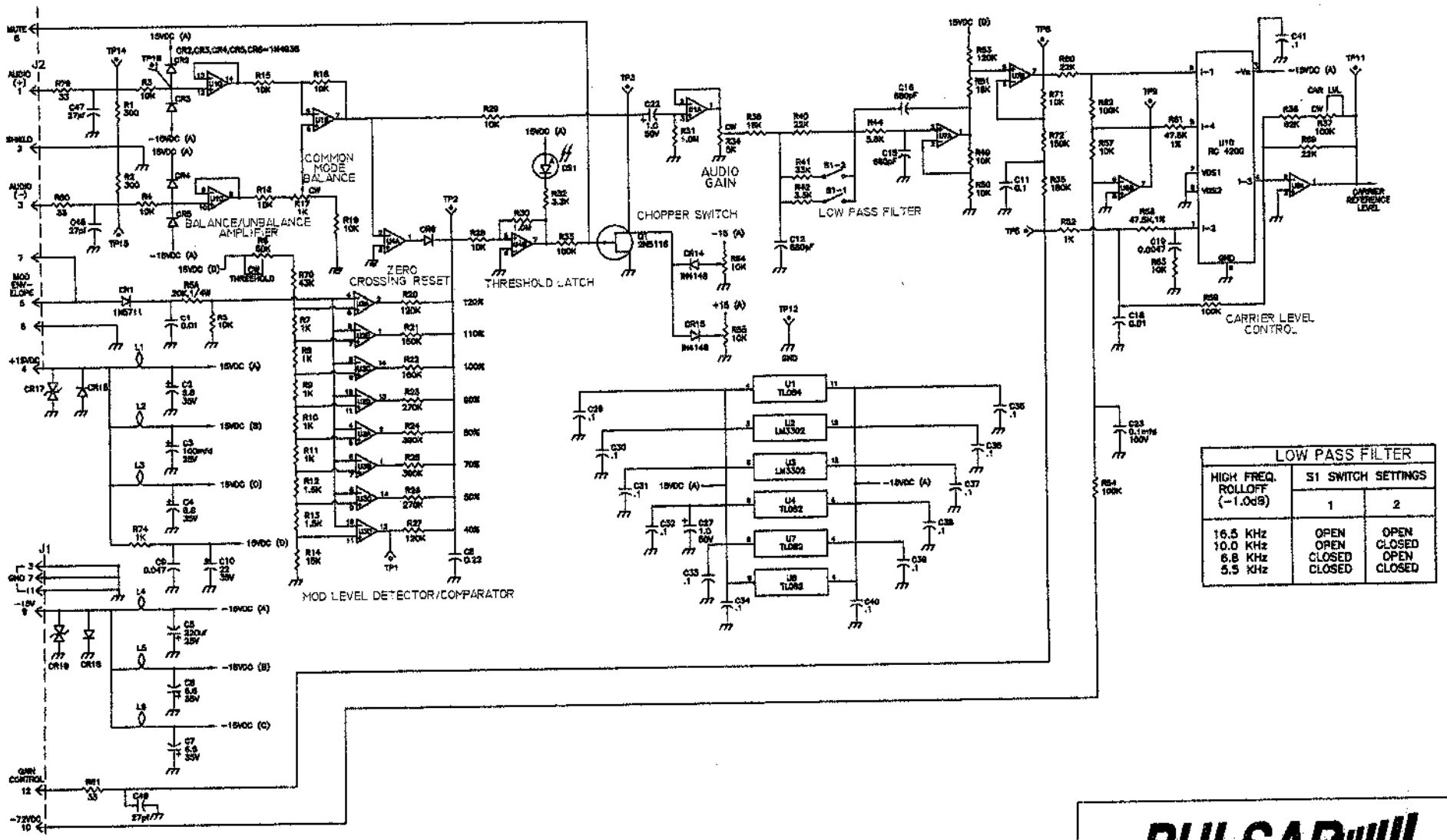
PC - 501 RF EXCITER

PARTS LIST

C1,C2	.22 μF/50V MONO.CERAMIC	P4958
C3	470 μF/35V ELECTROLYTIC	140-XRL35V470
C4,C5	1.0 μF/50V MONO CERAMIC	P4962
C6	1.0 μF/50V TANT.	P2073
C7,C9,C10, C20, C21	.1 μF/100V MONO. CERAMIC	P4910
C8,C17, C22	.01 μF/100V MONO. CERAMIC	P4904
C11(FREQ.DEPENDENT)	535 -589 KHZ 47 μμF DIP MICA	
	590-879 KHZ 33 μμF	
	880-1324 KHZ 22 μμF	
	1325-1710 KHZ 15 μμF	
C12,C19	1000 μμF/1KV DISC CERAMIC	
C13	6800 μμF/100V DISC CERAMIC	
C14	3-36 μμF VARIABLE	SG3005
C15	DELETED	
C16	180 μμF DIP MICA	
C18	DELETED	
CR1-CR6	1N4938	
CR7	1N4734A	
J1	12 PIN MOLEX HEADER	
J2	BNC JACK	
L1-L6	5.8 MM FERRITE BEAD	21-129B
L7-L9	1000 μH	DN41105
L10	10,000 μH	M9263
Q1,Q3,Q6,Q7	2N2222A	
Q2	2N2914	
Q4	2N2219	
Q5	2N2905	
Q8	2N2907A	
R1,R2,R24	100 OHM - 1/2W	
R3,R5,R10,R14,R17,R22, R26	1K - 1/2 W	
R4	1K VARIABLE, MULTI-TURN	
R6	4.7K - 1/2 W	
R7	2.2K - 1/2 W	
R8,R23	1.8K - 1/2 W	
R9	8.2K - 1/2 W	
R11,R12,R25	3.3K - 1/2 W	
R13,R19	22 OHM - 1/2 W	
R15	150 OHM - 1/2 W	

PARTS LIST

R16	120 OHM - 1/2 W	
R18	50K VARIABLE, MULTI-TURN	
R20	10K - 1/2 W	
R21	27K - 1/2 W	
R27-30	33K – 1/2W	
R31	5.6 OHM - 1/4 W	
R32	150K - 1/2 W	
S1	4PST DIP	571-4356402
U1,U4	HEX SCHMITT	MC14106BCP
U2	DUAL FLIP-FLOP	MC14013BCP
U3	BINARY COUNTER	MC14526BCP
UX1,UX2,UX4	14-PIN IC SOCKET	
UX3	16 PIN IC SOCKET	
Y1	CRYSTAL, FREQUENCY DEPENDENT	



LOW PASS FILTER		
HIGH FREQ. ROLLOFF (-1.0dB)	S1 SWITCH SETTINGS	
	1	2
16.5 KHz	OPEN	OPEN
10.0 KHz	OPEN	CLOSED
6.8 KHz	CLOSED	OPEN
5.5 KHz	CLOSED	CLOSED

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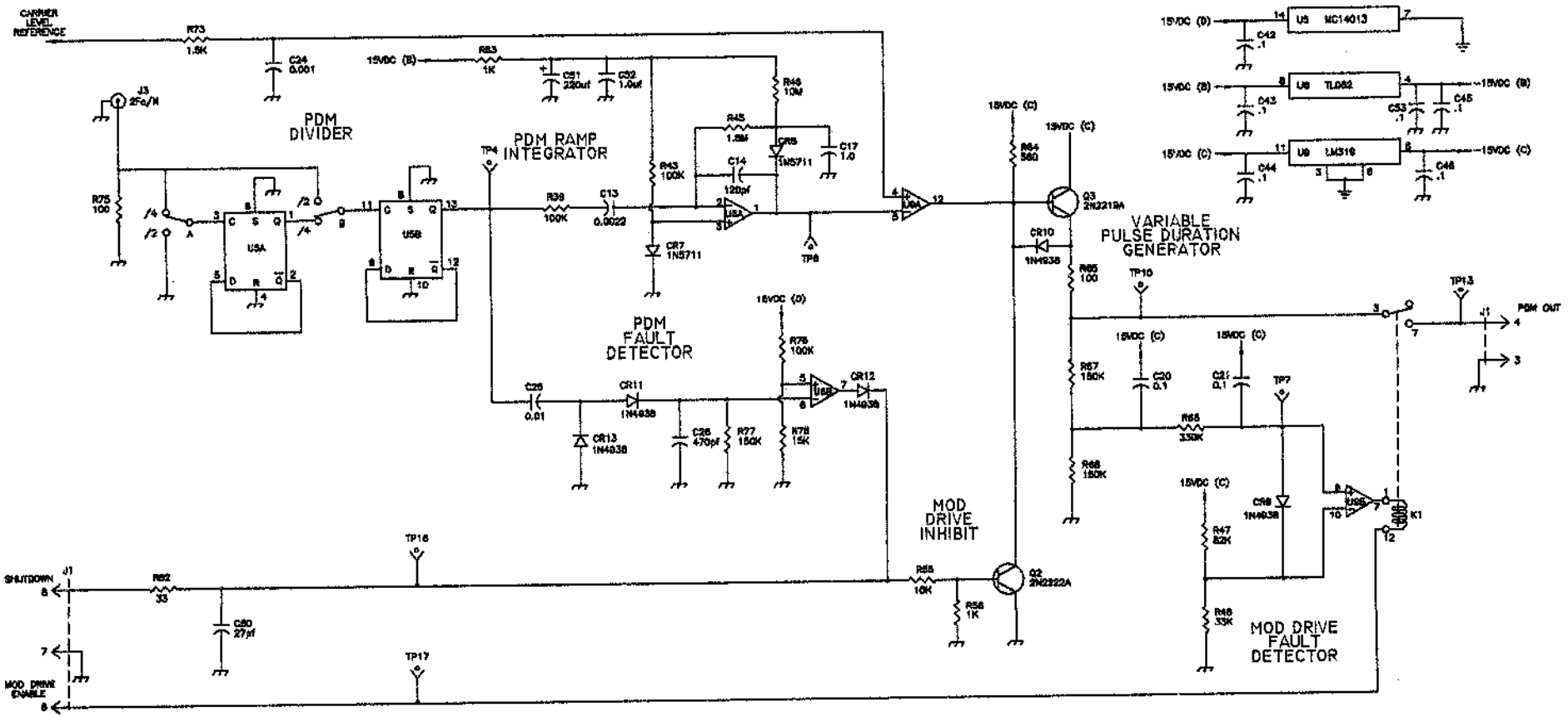
BROADCAST EQUIPMENT CO., INC.
1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184

REVISION DESCRIPTION:
REASSIGN NEW J#'s, ADD CAPS C29 thru C49, 07/12/99
CHAANGE VALUE OF C23, 7/20/99

REVISION: B

TITLE: AUDIO/PDM DRIVER SCHEMATIC (PC-506)

DESIGNED BY:	DATE: 11/4/98	DWG. BY:	DWG. No.	SHEET: 1/2
CAD: AM-0801S	MODIFIED: 3/2/07 by John McCool	CSR	AM-0801S	



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Energy–Onix
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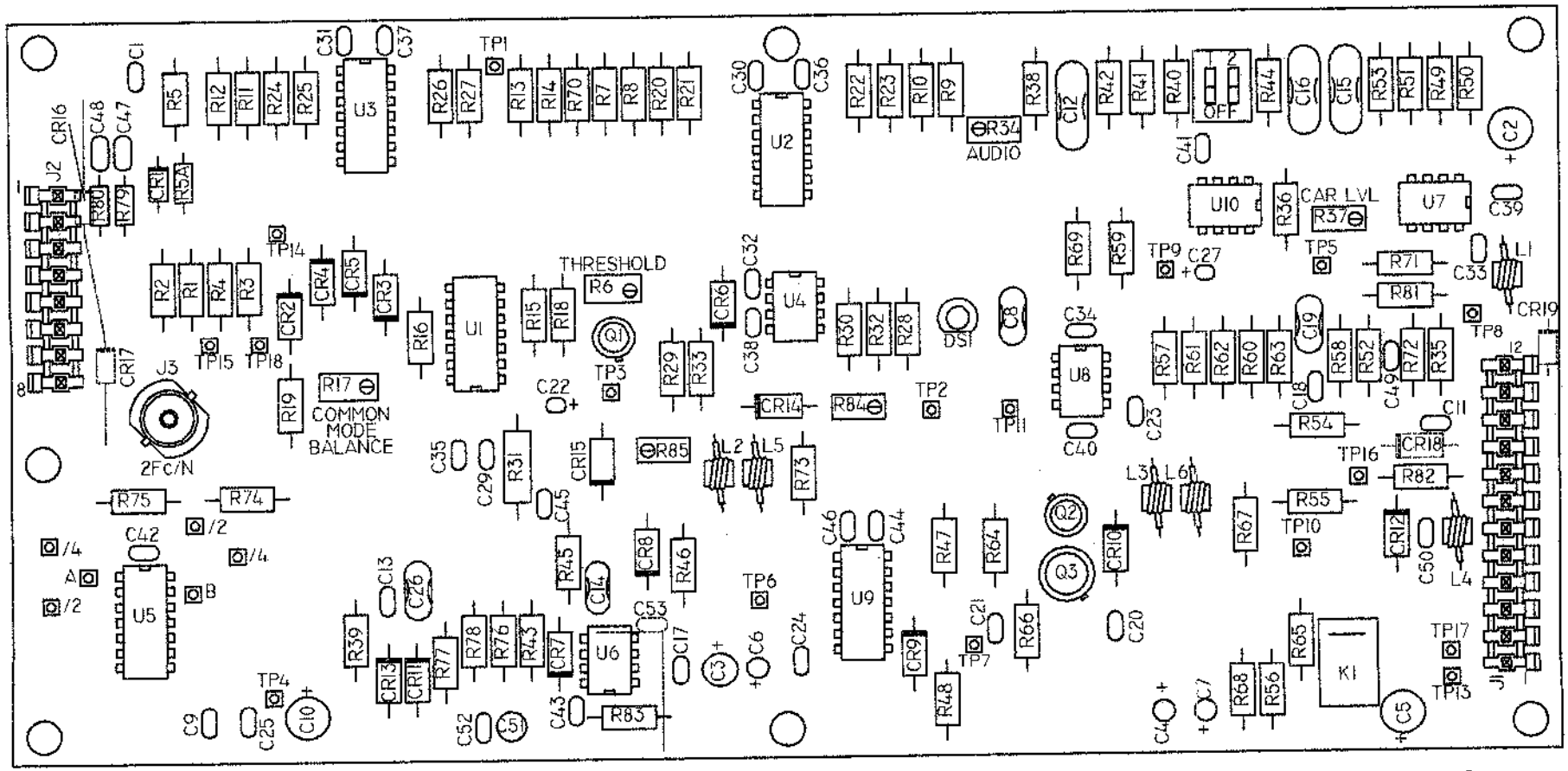
1306 RIVER ST., P.O. BOX 501, VALATIE, NY. 12184

REVISION DESCRIPTION:
ADD C42,C43,C44,C45,C46,C50,C51,C52,C53,R82,R83, 7/12/99
CHGD VARIABLE DURATION GEN TO VARIABLE PULSE GEN, 7/20/99

REVISION: B

TITLE: AUDIO/PDM DRIVER SCHEMATIC (PC–506)

DESIGNED BY: NDT/MT	DATE: 11/4/98	DWG. BY:	DWG. No.	SHEET: 2/2
CAD: AM–0802S	MODIFIED: 3/2/07 by John McCool		AM–0802S	



ENERGY ONIX
AUDIO/PDM DRIVER
PC-506

NOTE: C53, CR16 – CR19 ON BACK OF BOARD

PULSAR

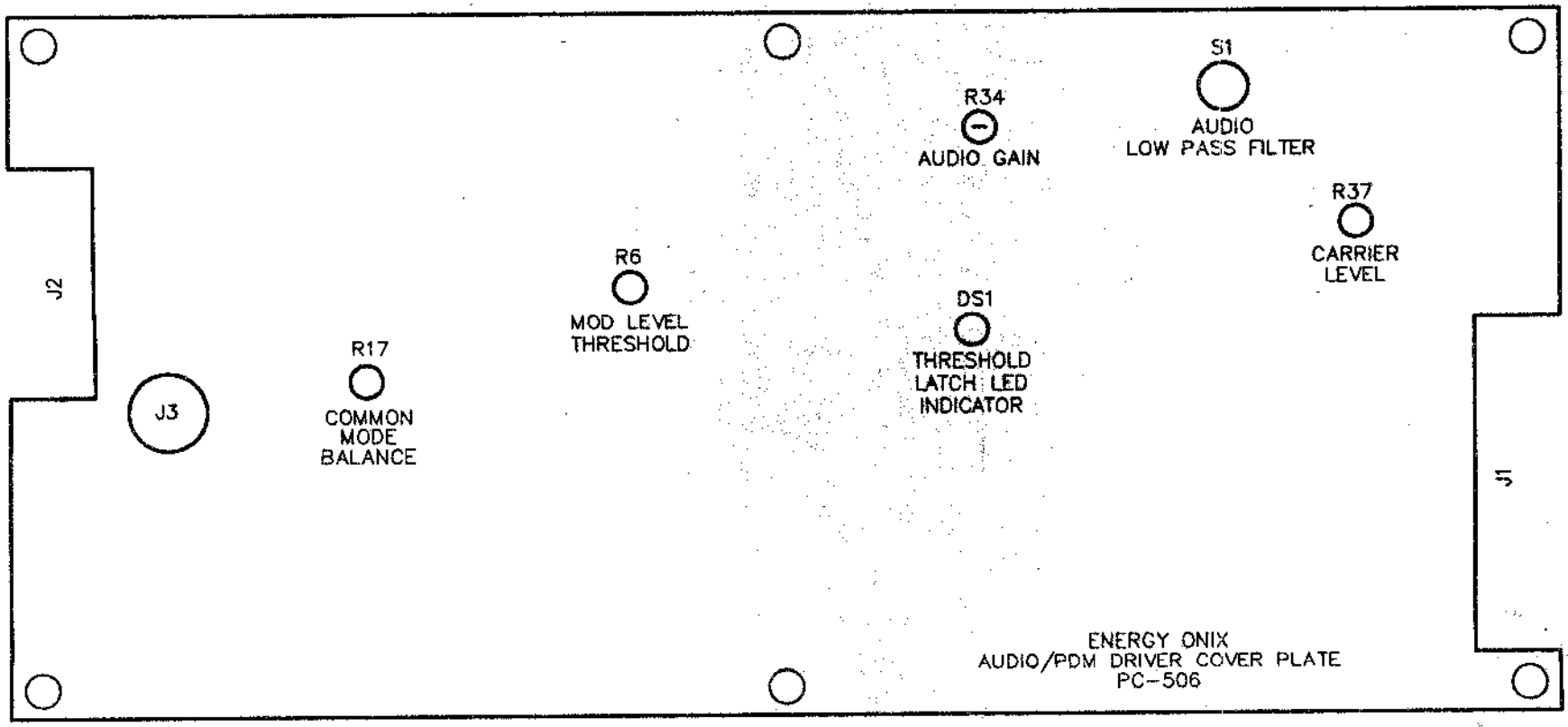
Energy–Onix
BROADCAST EQUIPMENT CO., INC.
1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184

REVISION DESCRIPTION:
ADDED C30,C31,C32,C33,C34,C35,C36,C37,C38,C39,C40,C41,C42,C43, C44,C45,C46,C47,C48,C49,C50,C51,C52,R79,R80,R81,R82, 07/14/99
ADD C41, REMOVE C34, 07/21/99
DRAWING # CHANGE, AM–1201C TO AM–0801C, 9/6/99

REVISION: C

TITLE: AUDIO/PDM DRIVER PCB COMPONENT LAYOUT (PC–506)

DESIGNED BY: NDT	DATE: 11/4/98	DWG. BY:	DWG. No.
MODIFIED: 3/2/07 by John McCool	CAD: AM–0801C	CRB	AM–0801C



PULSAR

Energy-Onix
BROADCAST EQUIPMENT CO., INC.
1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184

REVISION DESCRIPTION:	REVISION:

TITLE: AUDIO/PDM DRIVER COVER PLATE LAYOUT (PC-524)

DESIGNED BY: PI	DATE: 11/12/99	DWG. BY:	DWG. No.
CHK'ED:	CAD: AM-0802C	ERB	AM-0802C

PC - 506 AUDIO/PDM DRIVER

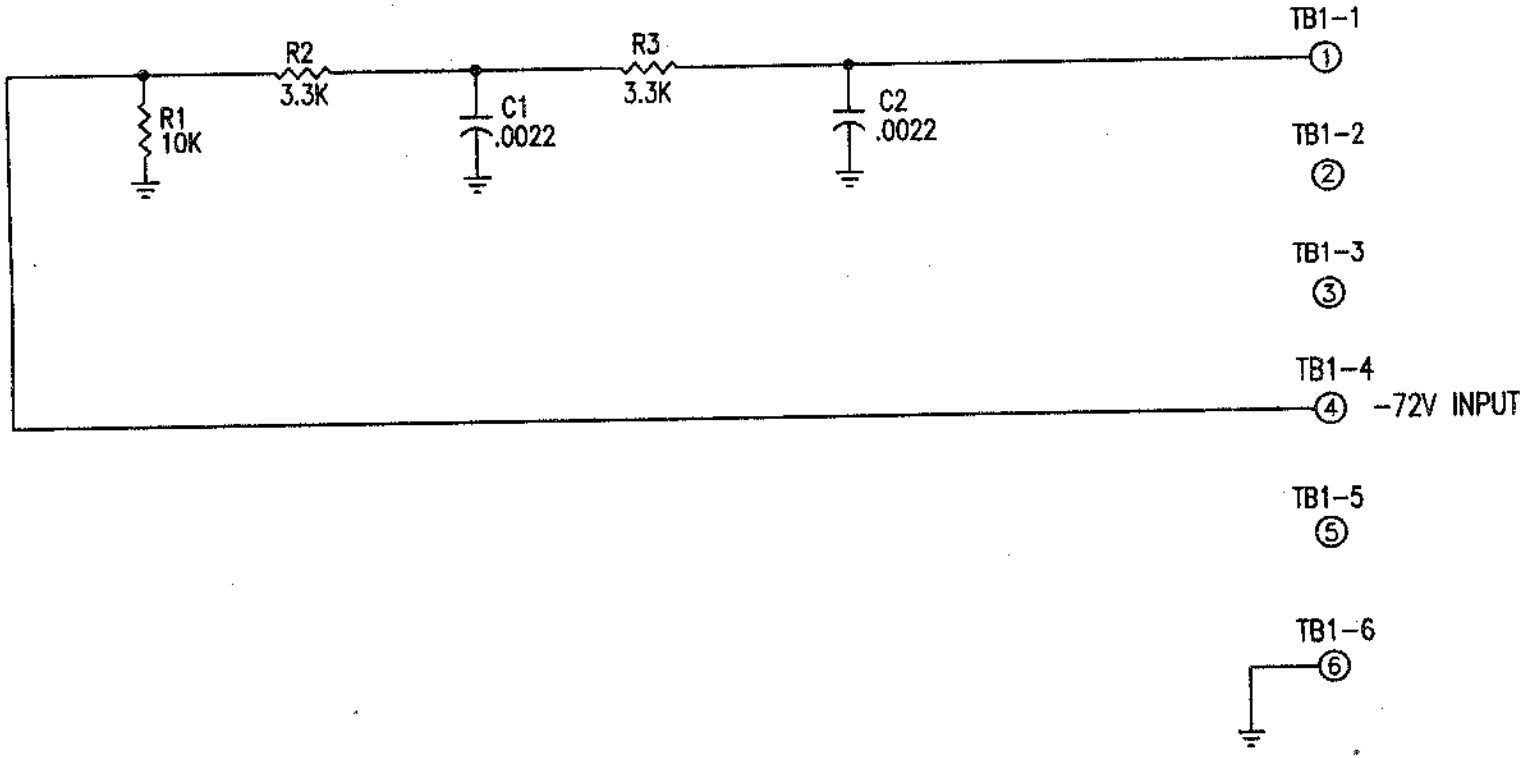
PARTS LIST

C1,C18,C25	.01mF/100V MONO.CERAMIC	P4904
C2,C4,C6,C7	6.8mF/35V TANTALUM	P2064
C3	100mF/25V ELECTROLYTIC	
C5,C51	220mF/25V ELECTROLYTIC	
C8	.22mF/50V MONO.CERAMIC	P4958
C9	.047mF/100V MONO.CERAMIC	P4908
C10	22mF/35V TANTALUM	P2101
C11,C20,C21,C23,C29-C46,C53	0.1mF/100V MONO.CERAMIC	P4910
C12,C15,C16	680pF/300V DIPPED MICA	5982-15300V680
C13	.0022mF/100V DISC CERAMIC	1387PH
C14	120pF/500V DIPPED MICA	5982-15 500V-120
C17,C52	1.0mF/50V MONO CERAMIC	P4968
C19	.0047mF/100V DISC CERAMIC	1391PH
C22,C27	1.0mF/50V TANT.	P2073
C24	.001mF/1KV DISC CERAMIC	1383PH
C26	470pF/500V DIPPED MICA	5982-15-500V 470
C47-C50	27pF DISC CERAMIC	1331PH
C28	NOT USED	
CR1,CR7,CR8	1N5711	
CR2–CR6, CR9–CR15	1N4938	
DS1	LED, AMBER	
J1	12 PIN MOLEX HEADER	
J2	8 PIN MOLEX HEADER	
J3	BNC FEMALE	
K1	AROMAT RELAY, NON-LATCHING	
L1-L6	5.8mm FERRITE BEAD	21-129B
Q1	P CHAN. FET.2N5116	
Q2	NPN TRANSISTOR 2N2222A	
Q3	NPN TRANSISTOR 2N2219A	
R1,R2	300 OHM, 1/2W	
R3,R4,R15,R16,R18,R19, R28,R29,R49,R50,R55, R57,R63,R71	10K, 1/2W	
R5,R7,R8,R9,R10,R11, R52,R56,R74	1K. 1/2W	
R5A	20K, 1/4W	
R6	50K, VARIABLE, MULTI-TURN	
R12,R13,R73	1.5K, 1/2W	
R14,R78	15K,1/2W	
R17	1K,VARIABLE,MULTI-TURN	

PC 506 AUDIO/PDM DRIVER

PARTS LIST

R20,R27,R53	120K, 1/2W	
R21,R67,R68,R72,R77	150K, 1/2W	
R22,R35	180K, 1/2W	
R23,R26	270K, 1/2W	
R24,R25	390K, 1/2W	
R30,R31	1M,1/2W	
R32,R42	3.3K, 1/2W	
R33,R39,R43,R54,R59, R62,R76	100K, 1/2W	
R34	5K, VARIABLE, MULTI-TURN	
R36,R47	82K, 1/2W	
R37	100K, VARIABLE, MULTI-TURN	
R38,R51	18K, 1/2W	
R41,R48	33K, 1/2W	
R44	5.6K, 1/2W	
R45	1.8M, 1/2W	
R46	10M, 1/2W	
R58,R61	47.5K, 1%, 1/2W	
R60,R69	22K, 1/2W	
R64	560 OHMS, 1/2W	
R65	10 OHMS, 1/2W	
R66	330K, 1/2W	
R70	43K, 1/2W	
R75	100 OHMS, 1/2W	
R79-R82	33 OHMS 1/4W	
R83	1K, 1/4W	
R84,R85	1K, 1/4W	
R86,R87	6.8K, 1/4W	
S1	DIP SWITCH, DPST	571-24356409
U1	QUAD OP AMD TL084IN	
U2,U3	QUAD COMPARATOR LM3302N	
U4,U6,U7,U8	DUAL OP AMP TL082MJG	
U5	DUAL CMOS TYPE D FLIP-FLOP	MC14013BCP
U9	DUAL HIGH SPEED COMPARATOR	LM319N
U10	ANALOG MULTIPLIER	RC4200AN
XU1,XU2,XU3,XU5,XU9	14 PIN IC SOCKET	
XU4,XU6,XU7,XU8,XU10	8 PIN IC SOCKET	



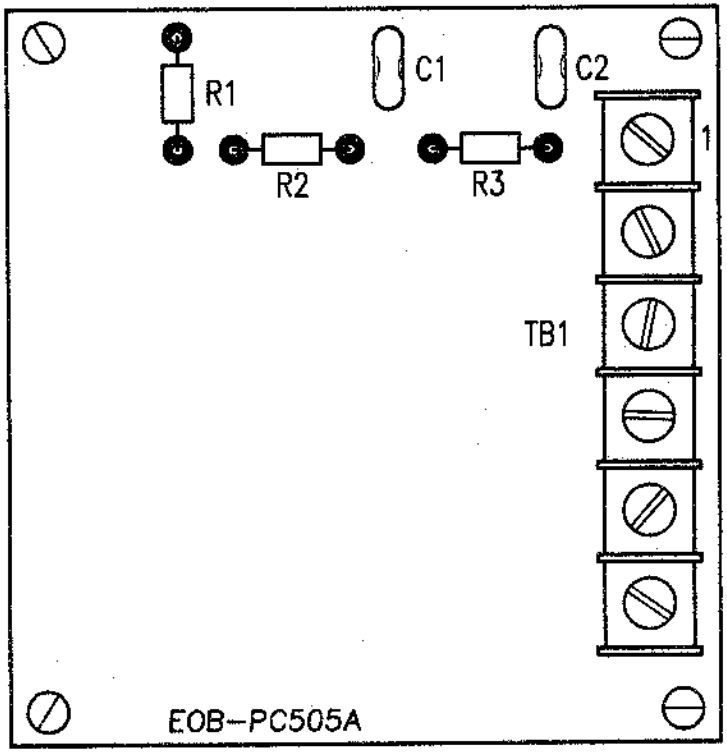
PULSAR

Energy-Onix
BROADCAST EQUIPMENT CO., INC.
1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184

REVISION DESCRIPTION:	REVISION:
-	

TITLE: -72V SAMPLE BD SCHEMATIC DIAGRAM (PC-505A)

DESIGNED BY:	DATE: 11/17/99	DWG. BY:	DWG. No.
CHK'ED:	CAD No. AM-0702S	CRB	AM-0702S



NTS

PULSAR

Energy–Onix
BROADCAST EQUIPMENT CO., INC.
1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184

REVISION DESCRIPTION:	REVISION:
-	

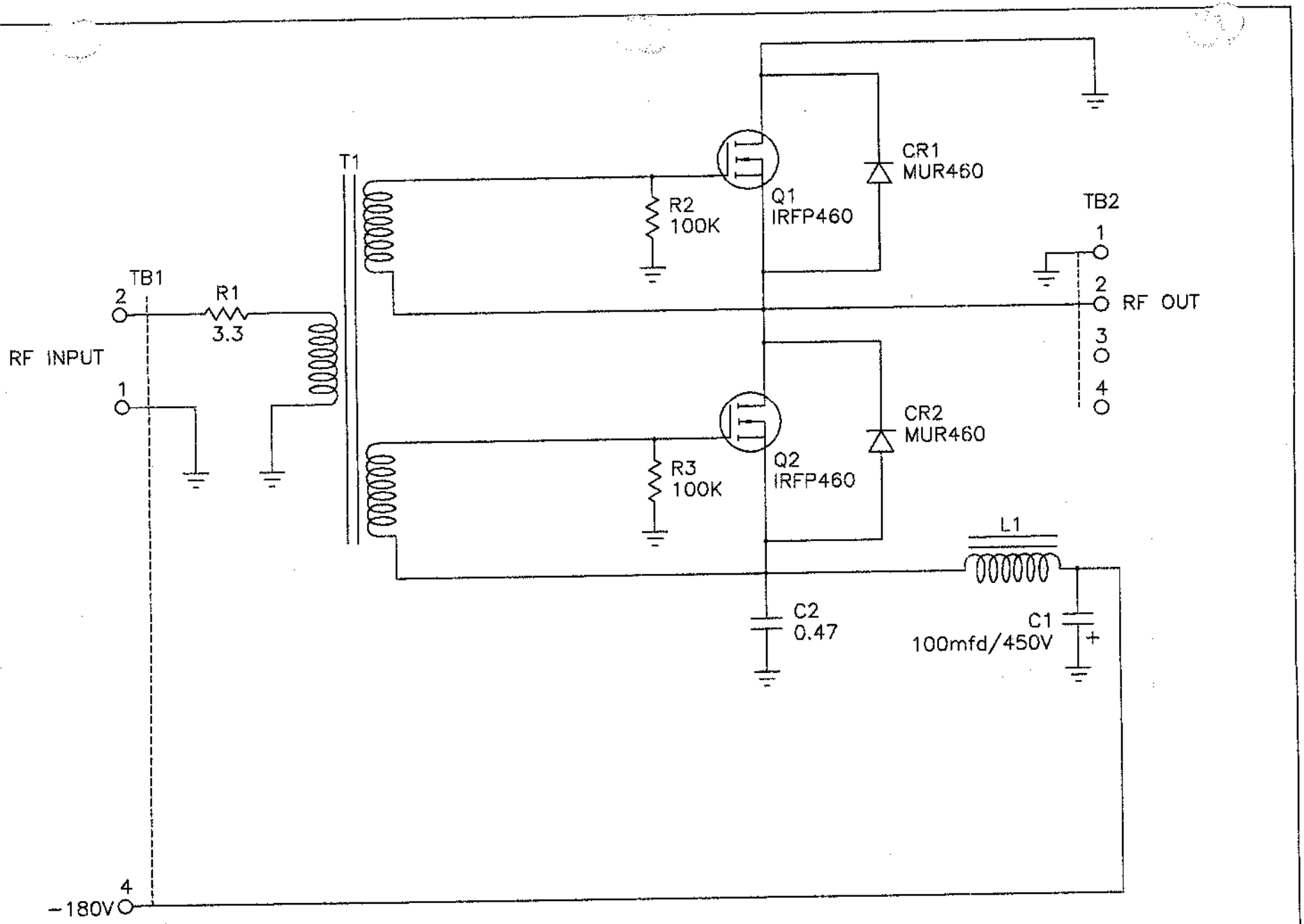
TITLE: –72V SAMPLE BD COMPONENT LAYOUT (PC–505A)

DESIGNED BY: NDT	DATE: 11/17/99	DWG. BY:	DWG. No.
CHK'ED:	CAD: AM–0702C	CRB	AM–0702C

PC- 505A -72V SAMPLE BOARD

PARTS LIST

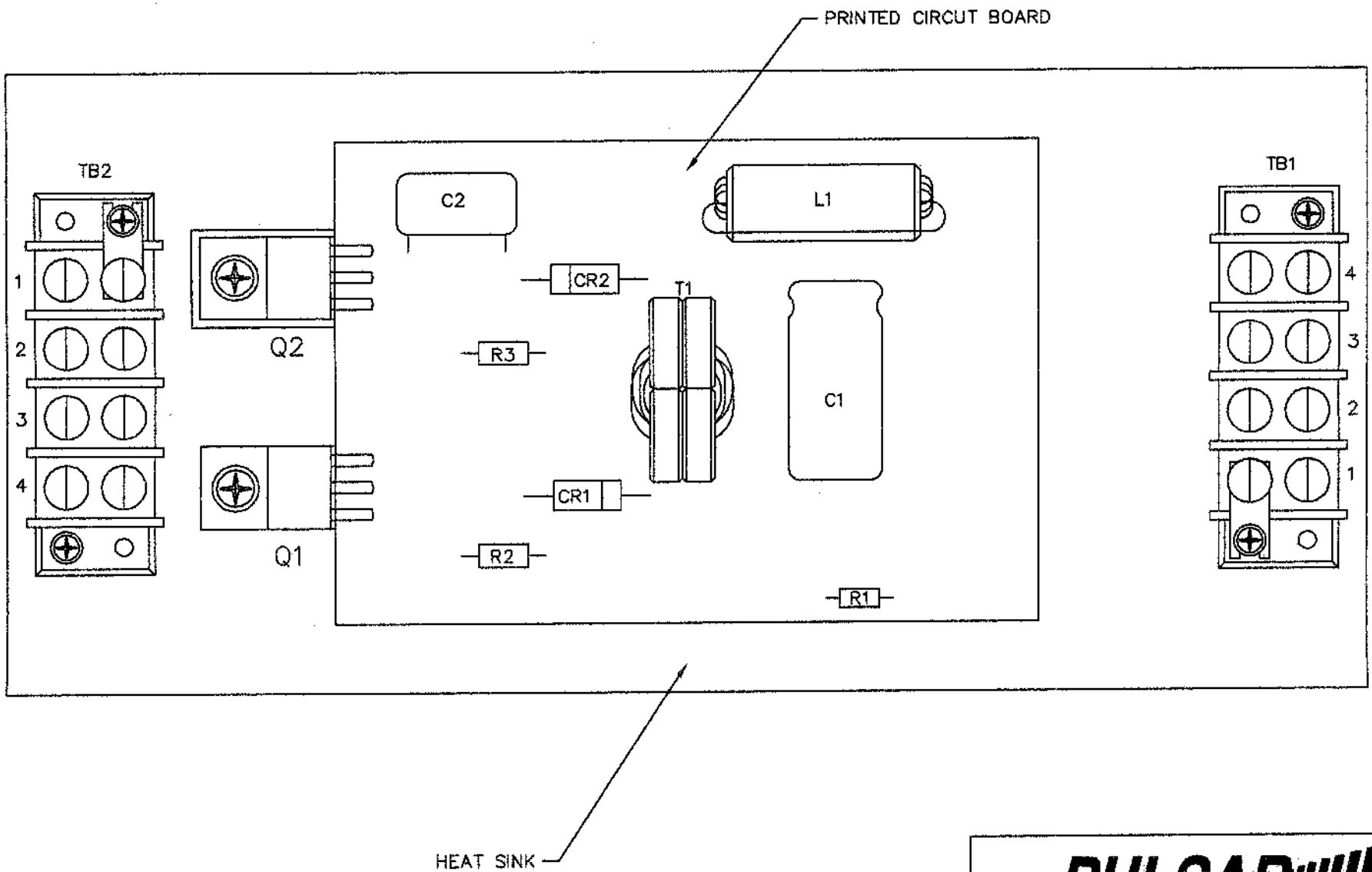
C1, C2	.0022uf, 100V DISC CERAMIC	1387PH
R1	10K, 1/2W	
R2, R3	3.3K, 1/2W	



Energy-Onix
BROADCAST EQUIPMENT CO., INC.
1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184

PULSAR

TITLE: INTERMEDIATE POWER AMP. SCHEMATIC DIAGRAM (PC-502)			
DESIGNED BY: N.D.T.	DATE: 5/23/97	DWG. BY: ERB	DWG. No. AM-0301S
MODIFIED: 3/14/07 by John McCool	CAD No. AM-0301S		



NOTE: Q2 MOUNTED W/ MICA INSULATOR, Q2 DIRECT MOUNT TO HEATSINK

PULSAR

Energy–Onix
BROADCAST EQUIPMENT CO., INC.
1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184

REVISION DESCRIPTION:	REVISION:
COMPLETE BOARD REDESIGN, 5/12/99	A

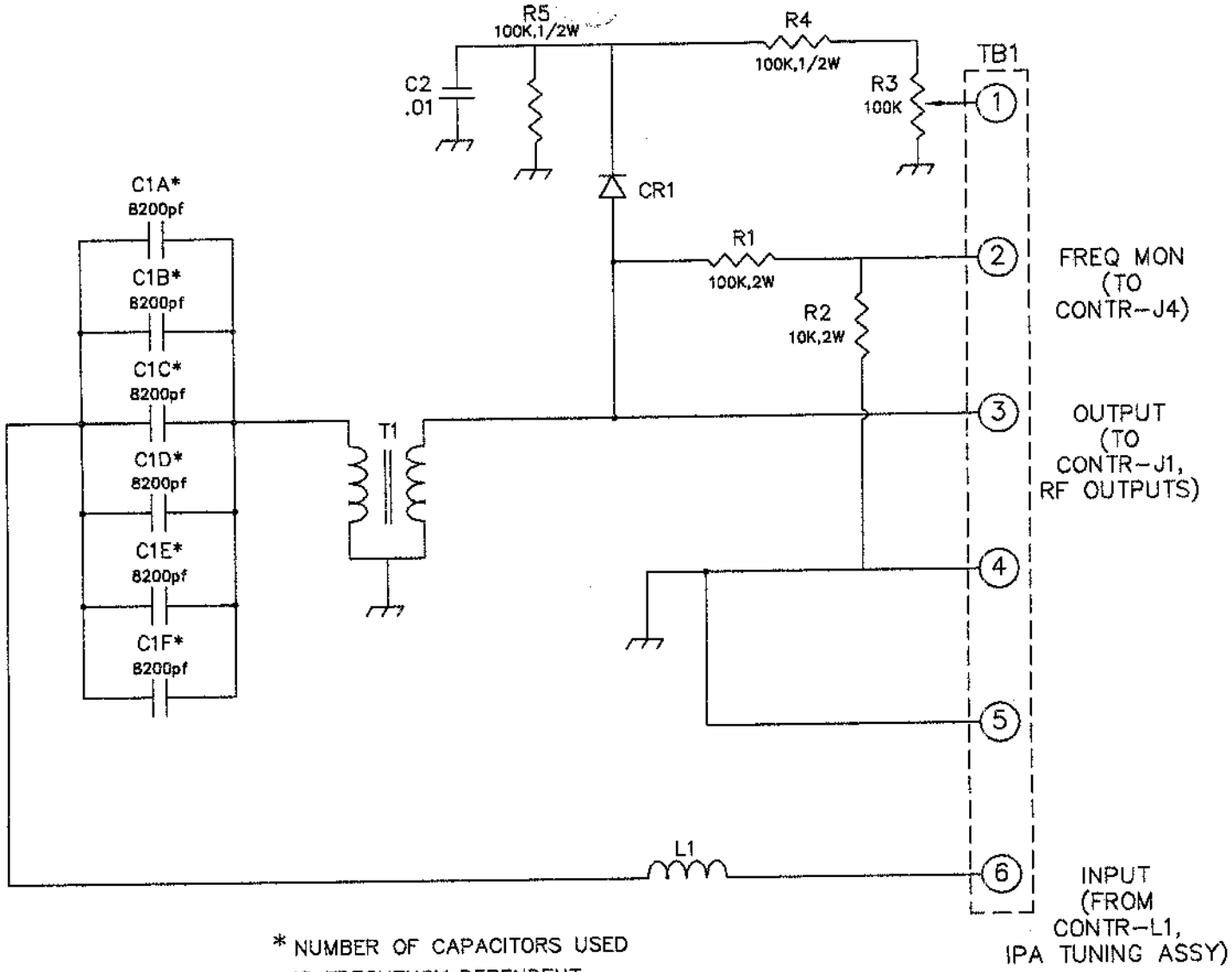
TITLE: INTERMEDIATE POWER AMP. COMPONENT LAYOUT (PC–502)

DESIGNED BY: PI	DATE: 9/3/99	DWG. BY: CKB	DWG. No. AM–0301C
MODIFIED: 3/14/07 by John McCool	CAD No. AM–0301C		

PC- 502 INTERMEDIATE POWER AMPLIFIER

PARTS LIST

C1-C5	.01μF/100V MONO. CERAMIC	P4904-ND
C6,C7	.47μF/250V POLYPROP.	EF2474-ND
CR1,CR2	BYW 98 - 200	
CR3,CR4	1N5711	
L1	FERRITE TORROID	2643540002
Q1-Q3	IRF 540	
Q4	2N6433	
R1	3.3OHMS, 1/2W	
R2,R10	10K, 1/2W	
R3,R6	6.8K, 1/2W	
R4	330K, 1/2W	
R5	56K, 1/2W	
R7	3.3K, 1/2W	
R8,R9	100K, 1/2W	
R11	33K, 1/2W	
T1	IPA INPUT TRANSFORMER ASSEMBLY	11-250B
TB1,TB2	4-POSITION BARRIER STRIP,15A	CINCH 4-141



* NUMBER OF CAPACITORS USED
IS FREQUENCY DEPENDENT

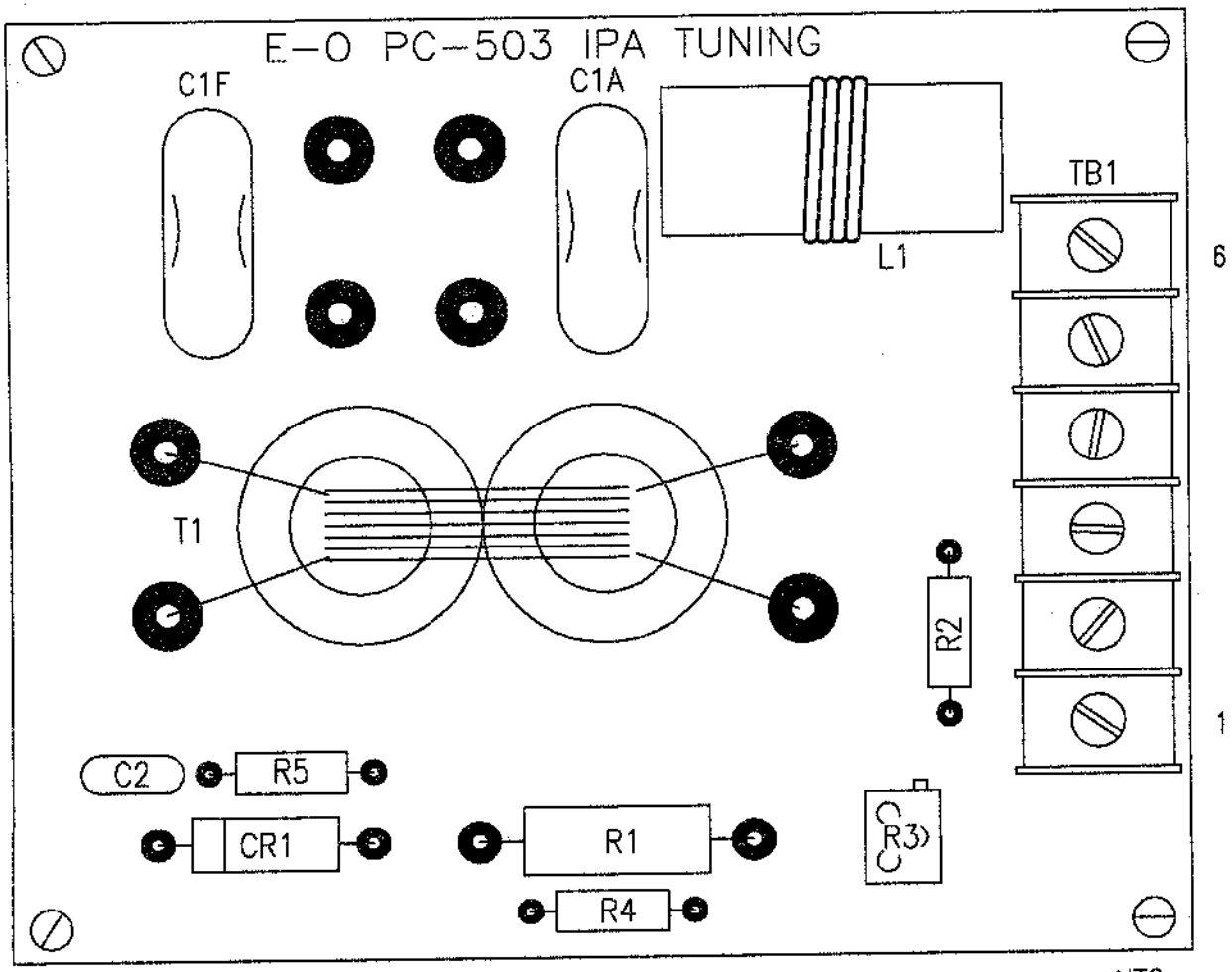
Energy-Onix
BROADCAST EQUIPMENT CO., INC.
1306 RIVER ST., P.O. BOX 601, VALATIE, NY. 12184

REVISION DESCRIPTION

PULSAR

TITLE: IPA TUNING BOARD
SCHEMATIC DIA. (PC-503)

DESIGNED BY: PI	DATE: 10/26/99	DWG. BY: CKB	DWG. No. AM-0501S
MODIFIED: 3/2/07 by John McCool	CAD No. AM-0501S		



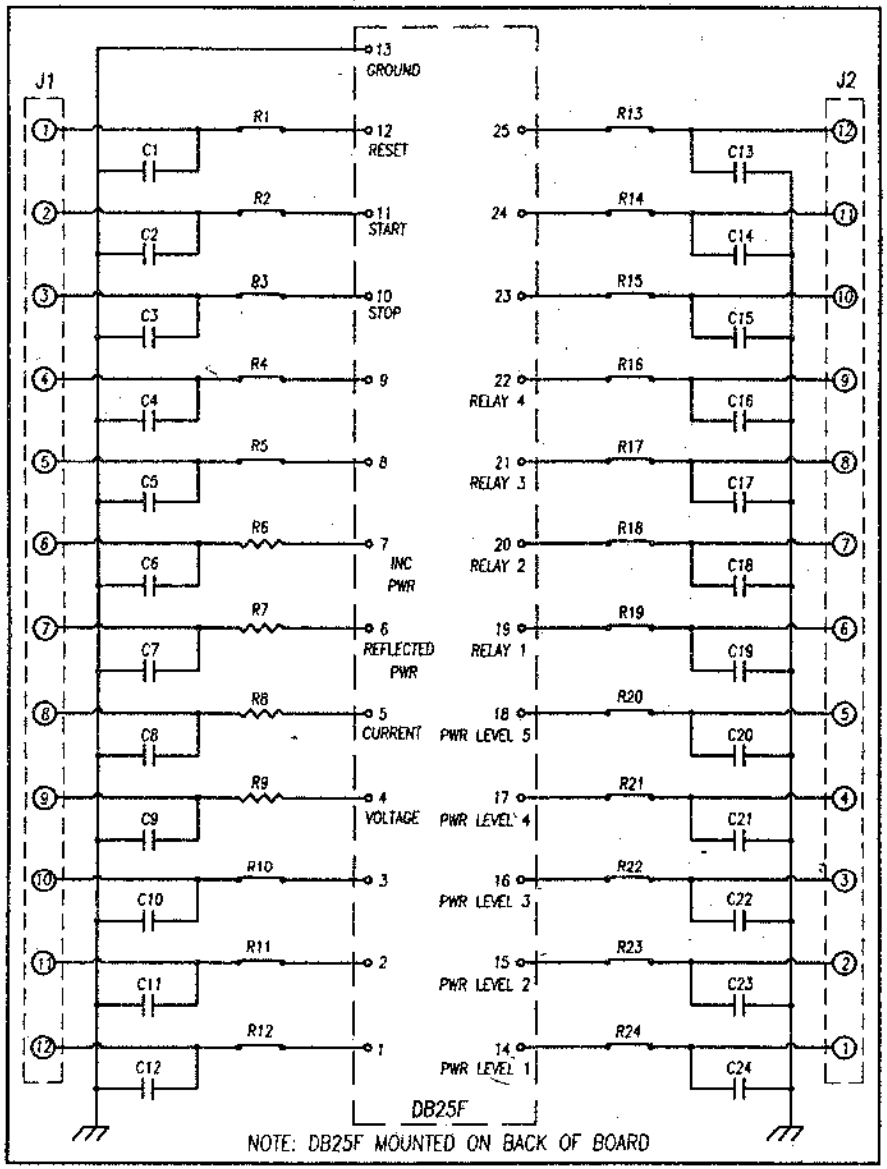
NTS

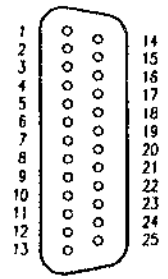
Energy-Onix BROADCAST EQUIPMENT CO., INC. 1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184	REVISION DESCRIPTION: ADDED C2,CR1,R2,R3,R4,R5, 10/13/00	REVISION: A	PULSAR TITLE: INTERMEDIATE POWER AMPLIFIER TUNING PCB COMPONENT LAYOUT (PC-503) DESIGNED BY: NDT · DATE: 11/04/98 · DWG. BY: CSB · DWG. No. AM-0501C MODIFIED: 3/6/07 by John McCool · CAD: AM-0501C

PC- 503 IPA TUNING BOARD

PARTS LIST

C1A - C1F	8200μμF/500V DIP MICA	
R1	1.2K/2W	
T1	IPA TRANSFORMER ASSEMBLY	11-280B
TB1	6 POSITION, PC MOUNT	





DB25F (VIEWED FROM BACK OF BOARD)

PARTS LIST

C1 – C24 = 0.01mfd/100V, STACK METAL FILM, P4713
R1 – R5 = JUMPER
R6 – R9 = 1000 ohm, 1/4W
R10 – R24 = JUMPER
J1 & J2 = 12 PIN MOLEX
DB25F = D-SUBMIN 25 PIN FEMALE

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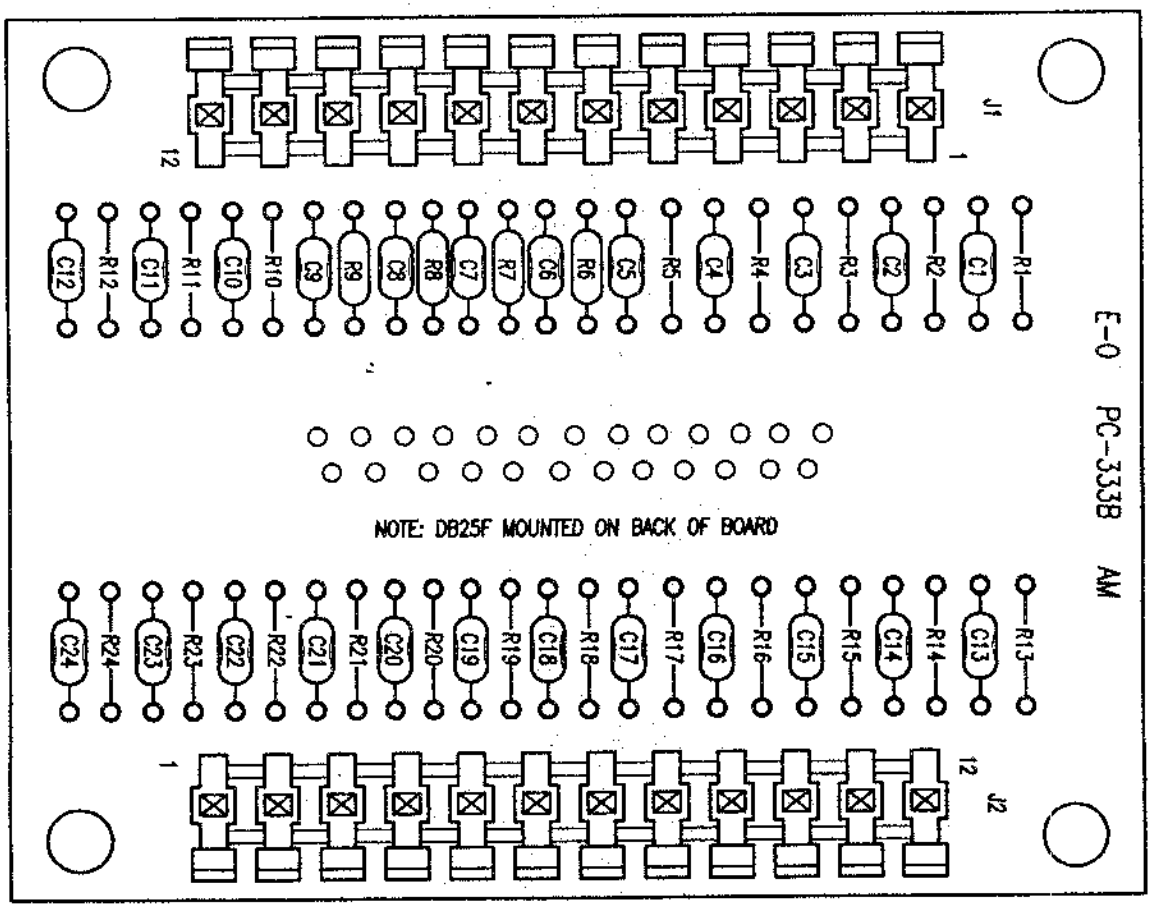
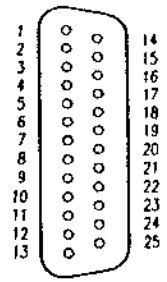
REVISION DESCRIPTION:	REVISION:
	▭

TITLE: PULSAR AM REMOTE INTERFACE BD., PC–333B SCHEMATIC DIAGRAM

DESIGNED BY: NDT	DATE: 6/18/99	DWG. BY: CKB	DWG. No. AM–2501S
CHK'ED: 7-19-99	CAD No. AM-2501S		





DB25F
(VIEWED FROM BACK OF BOARD)

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1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184

REVISION DESCRIPTION:	REVISION:
	D

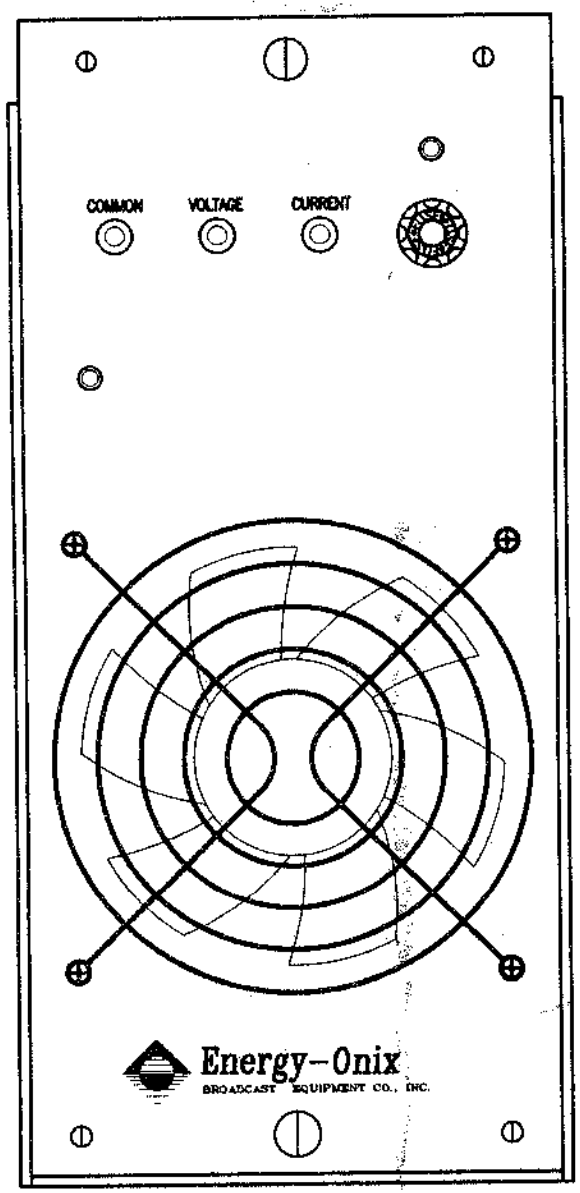
TITLE: PULSAR REMOTE INTERFACE BD., PC-333B COMPONENT LAYOUT

DESIGNED BY: NDT	DATE: 5/18/99	DWG. BY: CKB	DWG. No. AM-2501C
CHK'ED: 7-19-99 TT	CAD No. AM-2501C		

PC- 333B REMOTE INTERFACE BOARD

PARTS LIST

C1-C24	.01 μF/100V STACK METAL FILM	P4713
R1-R5	JUMPER	
R6-R9	1K, 1/4W	
R10-R24	JUMPER	
J1, J2	12 – PIN MOLEX HEADER	
DB25F	D-SUBMIN, 25 PIN FEMALE	



N.T.S.

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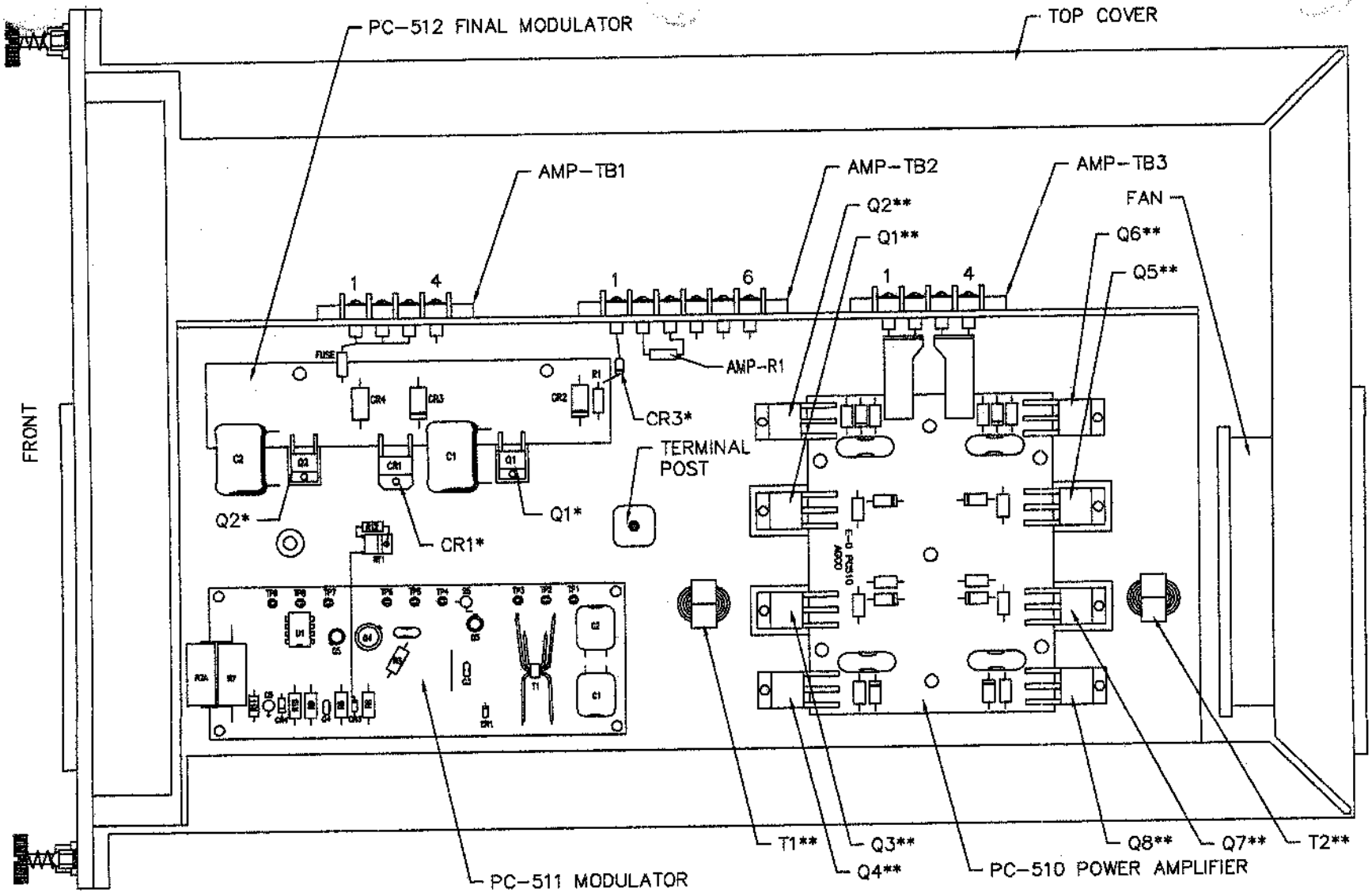
REVISION DESCRIPTION:	REVISION:
ADDED (3) TEST POINTS, FUSE & INDICATOR LIGHT, 07/20/00	A

TITLE: PULSAR AMP MODULE FRONT PANEL (EXTERNAL VIEW)

DESIGNED BY: PI	DATE: 11/29/99	DWG. BY:	DWG No.
CHK'ED:	CAD: AM–1107C	CRB	AM–1107C



NOTE:
* = A PART OF PC-512 & ASSOCIATED SCHEMATIC
** = A PART OF PC-510 & ASSOCIATED SCHEMATIC

N.T.S.

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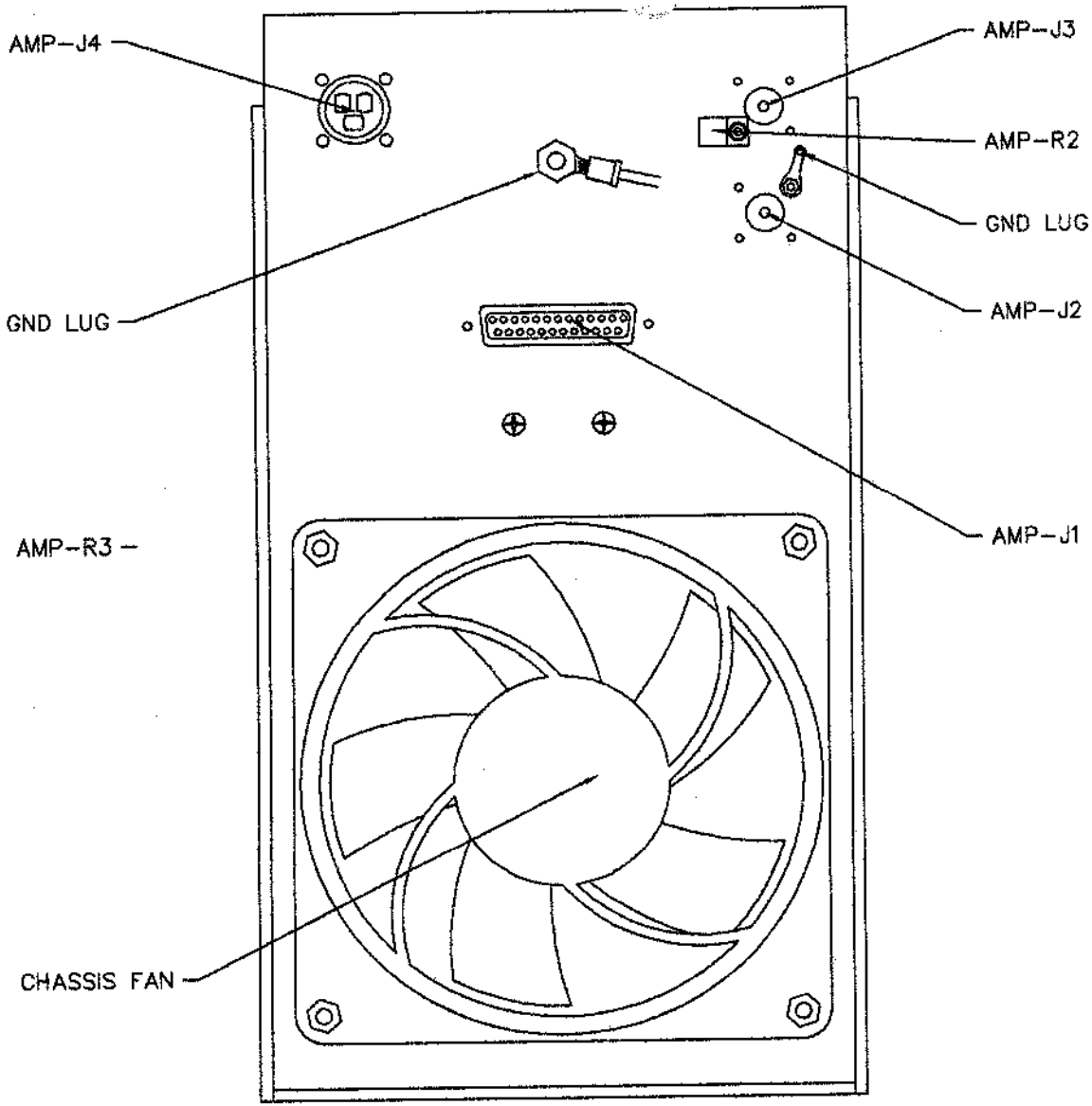
REVISION:	TITLE: PULSAR AMP MODULE COMP LAYOUT, HEATSINK VIEW			
-	DESIGNED BY: PI	DATE: 10/20/99	DWG. BY: CRB	DWG. No. AM-1102C
	MODIFIED: 3/8/07 by John McCool	CAD: AM-1102C		



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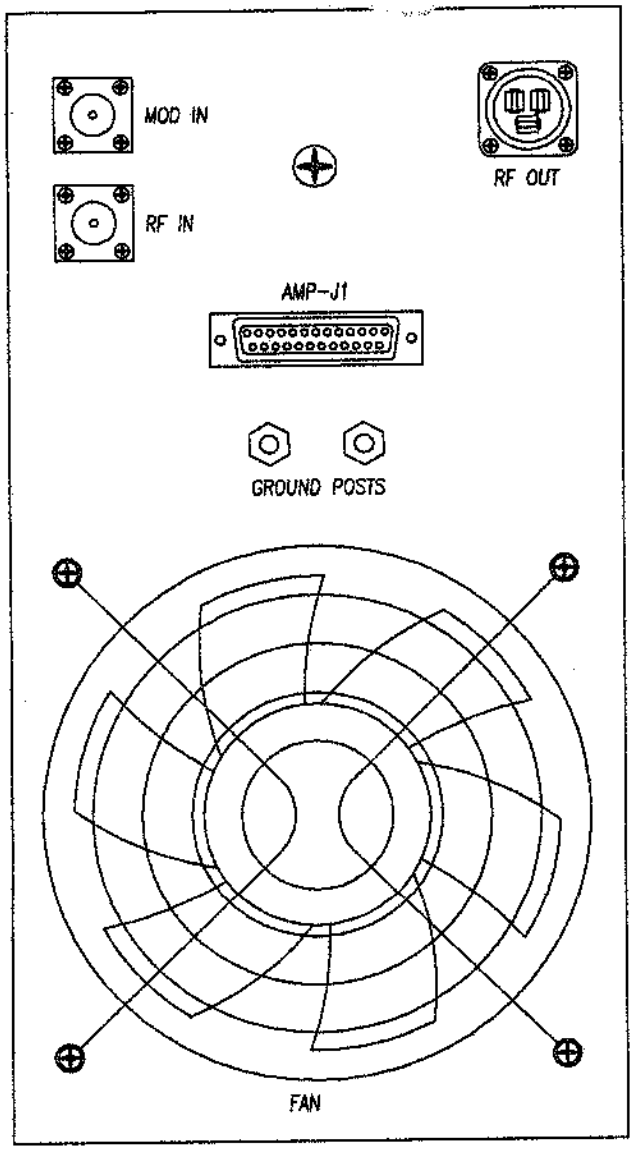
1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184

PULSAR

REVISION:	TITLE: PULSAR AMPLIFIER MODULE REAR PANEL (VIEWED FROM INSIDE)			
	DESIGNED BY: PI	DATE: 10/26/99	DWG. BY: CRB	DWG. No. AM–1106C
	MODIFIED: 3/8/07 by John McCool	CAD: AM–1106C		



N.T.S.

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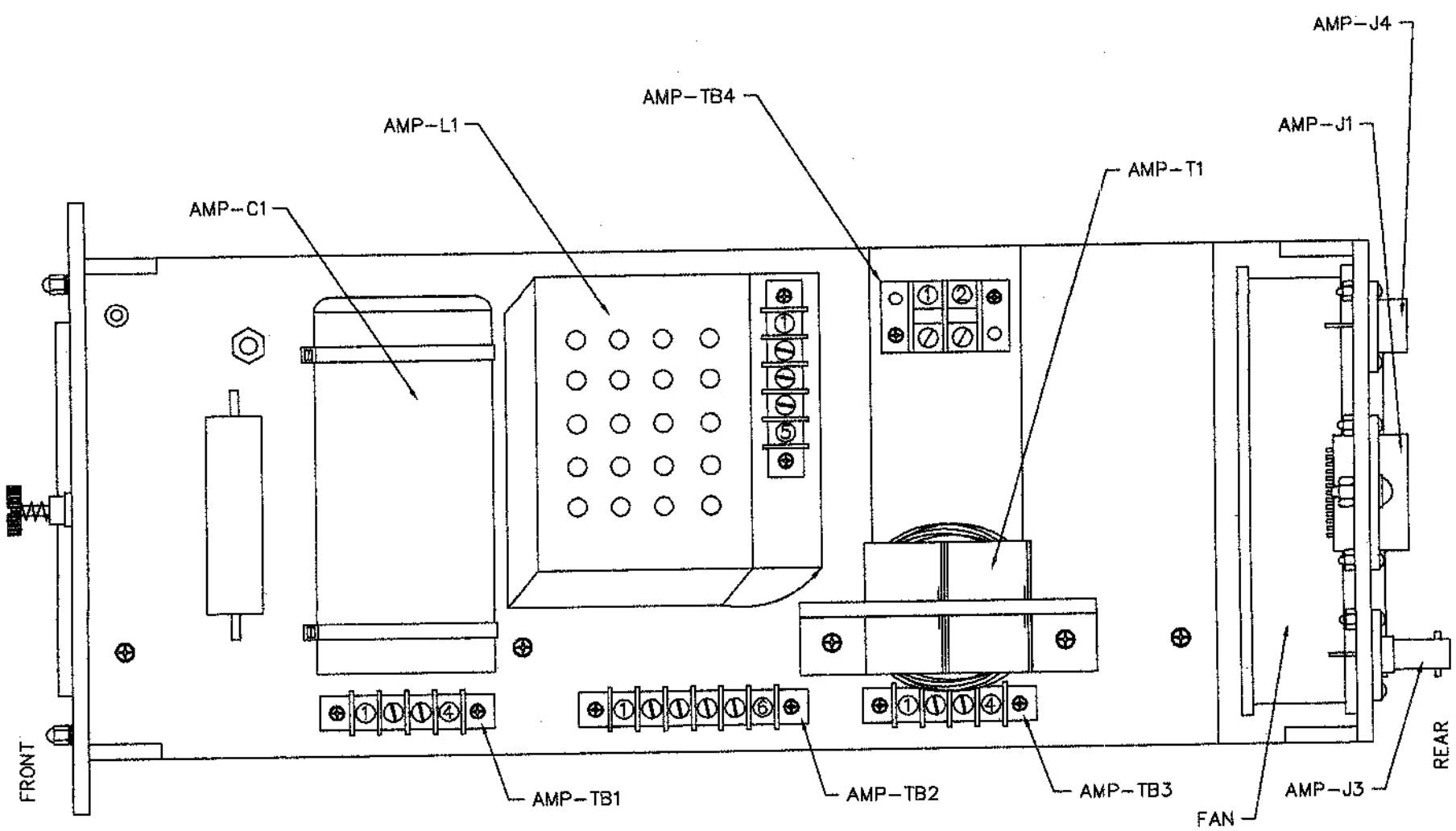
1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184

PULSAR

REVISION:	TITLE: PULSAR AMPLIFIER MODULE REAR PANEL (EXTERNAL VIEW)			
	DESIGNED BY: PJ	DATE: 3/9/07	DWG. BY: John McCool	DWG. No. AM--1110C
	CHK'ED:	CAD: AM-1110C		



N.T.S.

Energy-Onix
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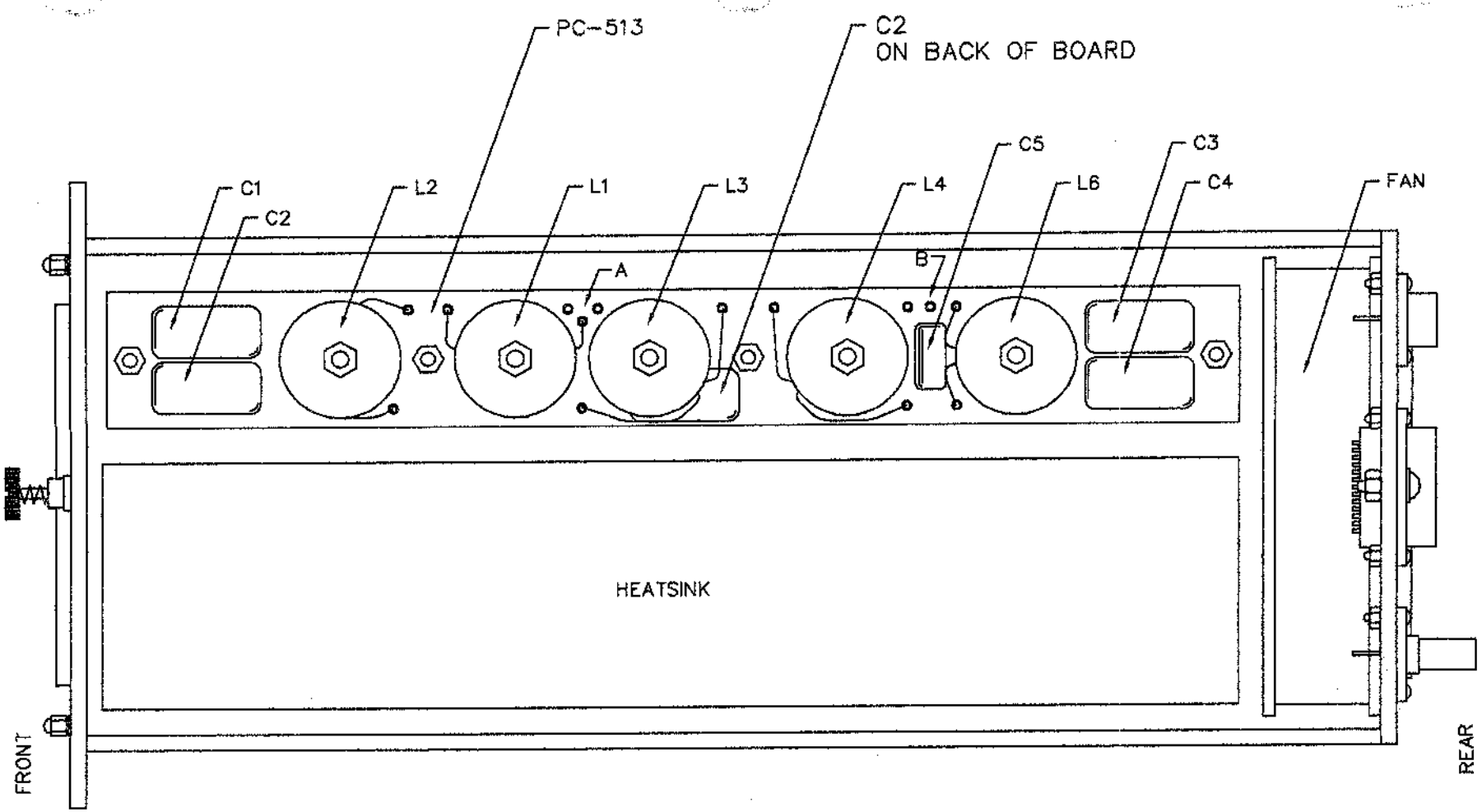
1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184

PULSAR

REVISION:	TITLE: PULSAR AMP MODULE COMP LAYOUT, TOP VIEW			
	DESIGNED BY: PI	DATE: 10/20/99	DWG. BY: CRB	DWG. No. AM-1103C
	MODIFIED: 3/8/07 by John McCool	CAD: AM-1102C		



N.T.S.

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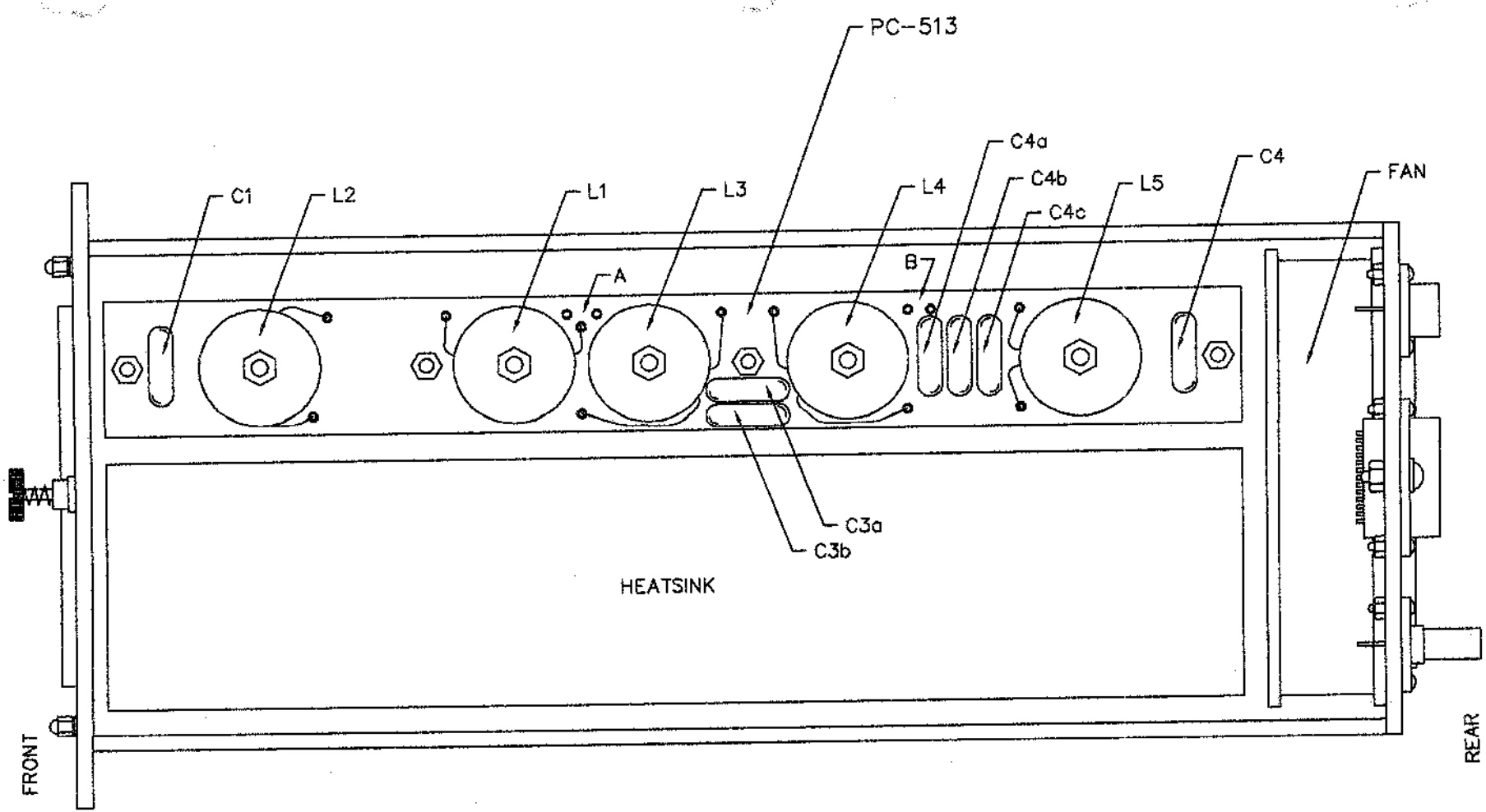
1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184

PULSAR

REVISION:	TITLE: PULSAR AMP MODULE – 95V COMP LAYOUT, INSIDE BASE VIEW			
	DESIGNED BY: PI	DATE: 10/22/99	DWG. BY: ESB	DWG. No. AM-1104C
	MODIFIED: 3/8/07 by John McCool	CAD: AM-1104C		



N.T.S.

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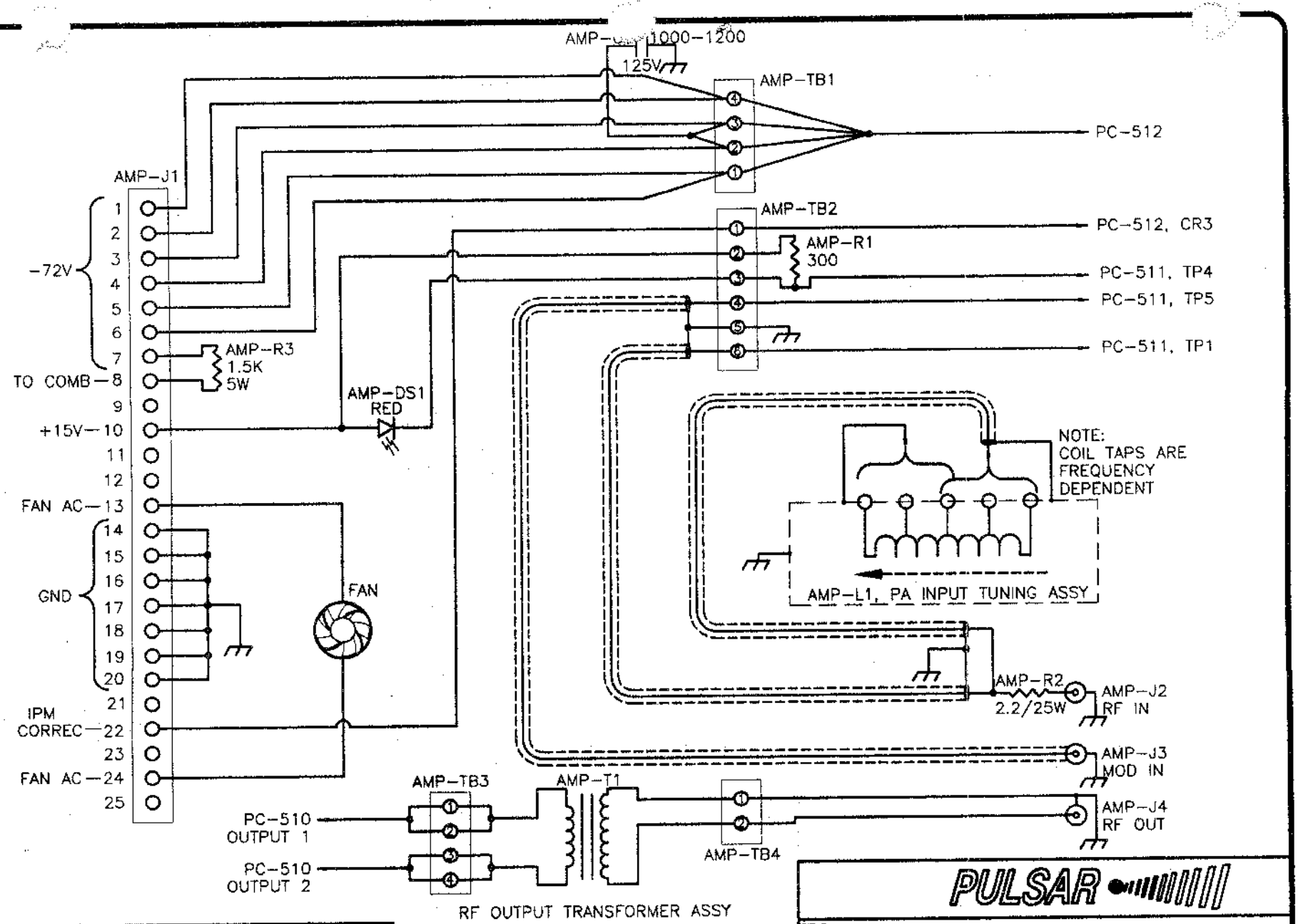
1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184

PULSAR

REVISION:	TITLE: PULSAR AMP MODULE – 180V COMP LAYOUT, INSIDE BASE VIEW			
	DESIGNED BY: PI	DATE: 10/22/99	DWG. BY: CRB	DWG. No. AM-1109C
	MODIFIED: 3/8/07 by John McCool	CAD: AM-1109C		



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1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184

REVISION DESCRIPTION:	REVISION:
	▭

PULSAR

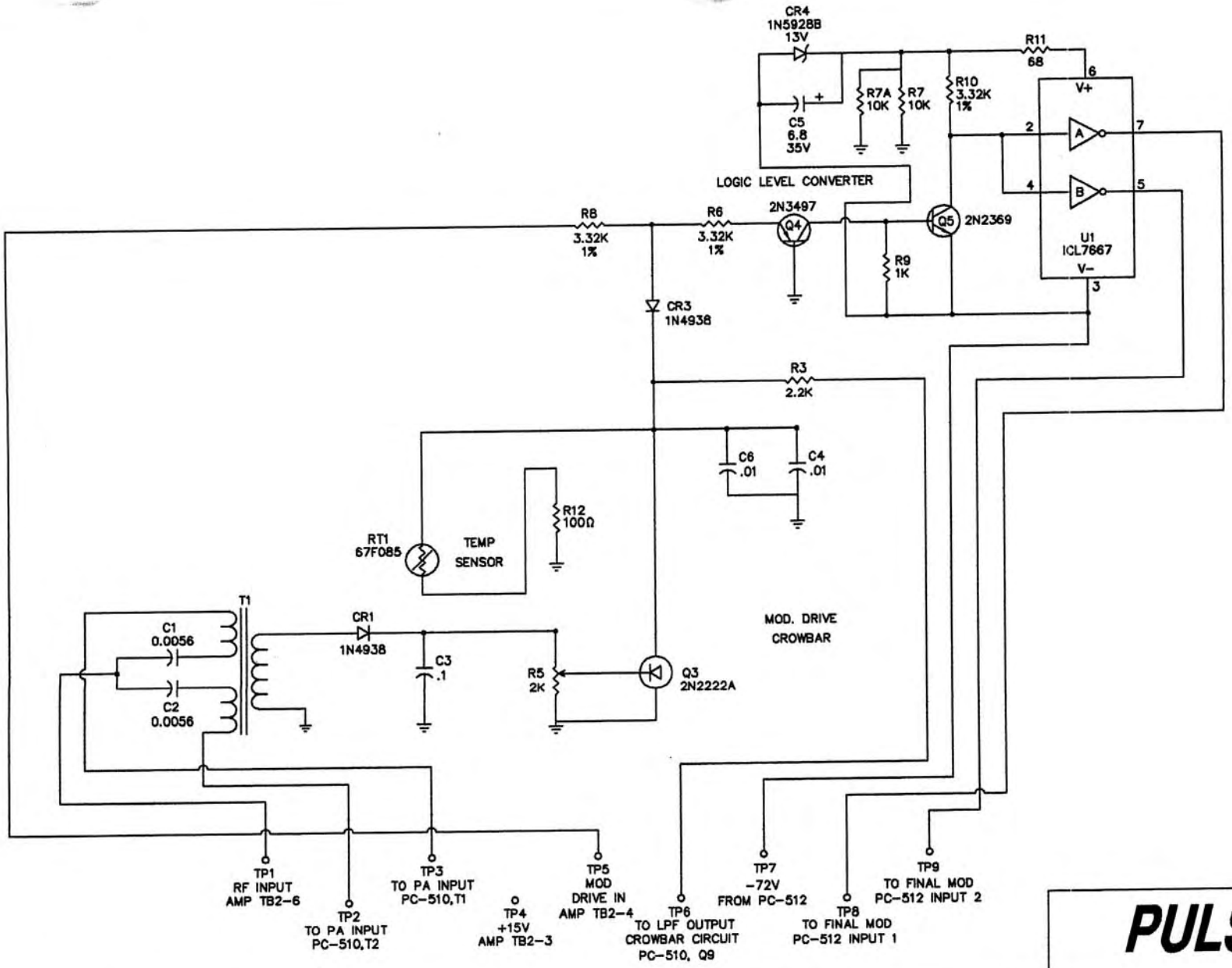
TITLE: PULSAR AMPLIFIER MODULE
SCHEMATIC DIAGRAM (COMP NOT HEATSINK MTD)

DESIGNED BY: PI	DATE: 10/27/99	DWG. BY:	DWG. No.
CHK'ED:	CAD: AM-1102S	ESB	AM-1102S

PULSAR AMPLIFIER MODULE - COMPONENTS NOT HEATSINK MOUNTED

PARTS LIST

AMP C1	1000-1200μF/125 VAC MOTOR START	MALLORY PSUI00015A
AMP DS1	LED, RED	
AMP J1	D-SUBMIN 25 PIN MALE	
AMP J2, AMP J3	BNC FEMALE	
AMP J4	N FEMALE	
AMP L1	PA INPUT TUNING ASSEMBLY	
AMP R1	300 OHM, 1/2W	
AMP R2	2.2 OHM, 25W, CADDOCK	
AMP R3	1.5K, 5W	YAGEO 751
AMP T1	RF OUTPUT TRANSFORMER ASSEMBLY	
AMP TB1,		
AMP TB3	4 POSITION, CHASSIS MOUNT 20A	
AMP TB2	6 POSITION, CHASSIS MOUNT 20A	
AMP TB4	2 POSITION, BARRIER 20A	



PULSAR

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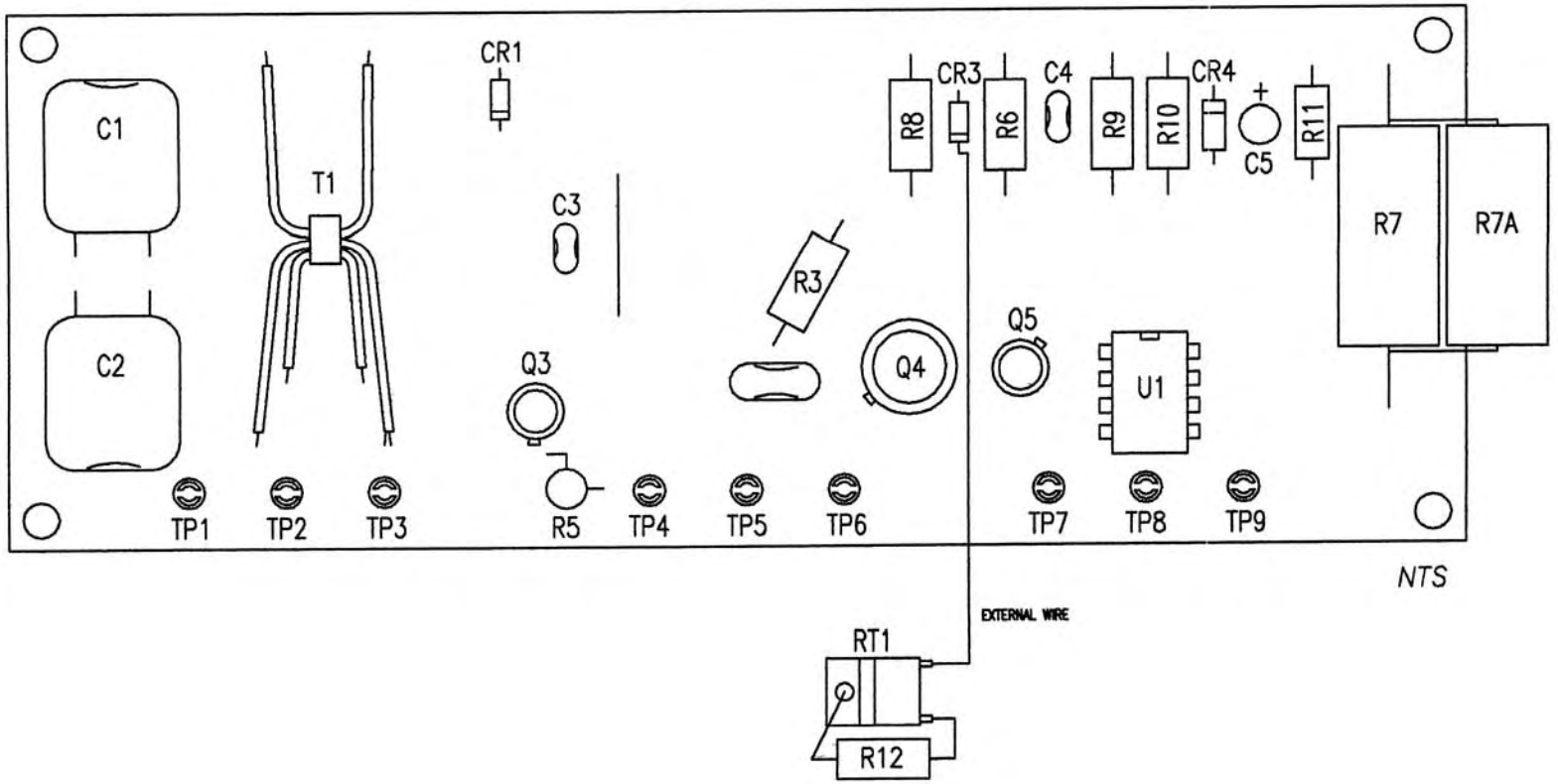
REVISION DESCRIPTION:	REVISION
ADD C4, REMOVE PCB OUTLINE, FORM TP STRIP, 9/6/99 MODIFY TP TEXT, 10/01/99	B

TITLE: MODULATOR
SCHEMATIC DIAGRAM (PC-511)

DESIGNED BY: N.D.T.	DATE: 11/30/98	DWG. BY:	DWG. No.
MODIFIED: 3/8/07 by John McCool	CAD No. AM-1201S	E.S.B.	AM-1201S



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1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184

PULSAR

REVISION: –

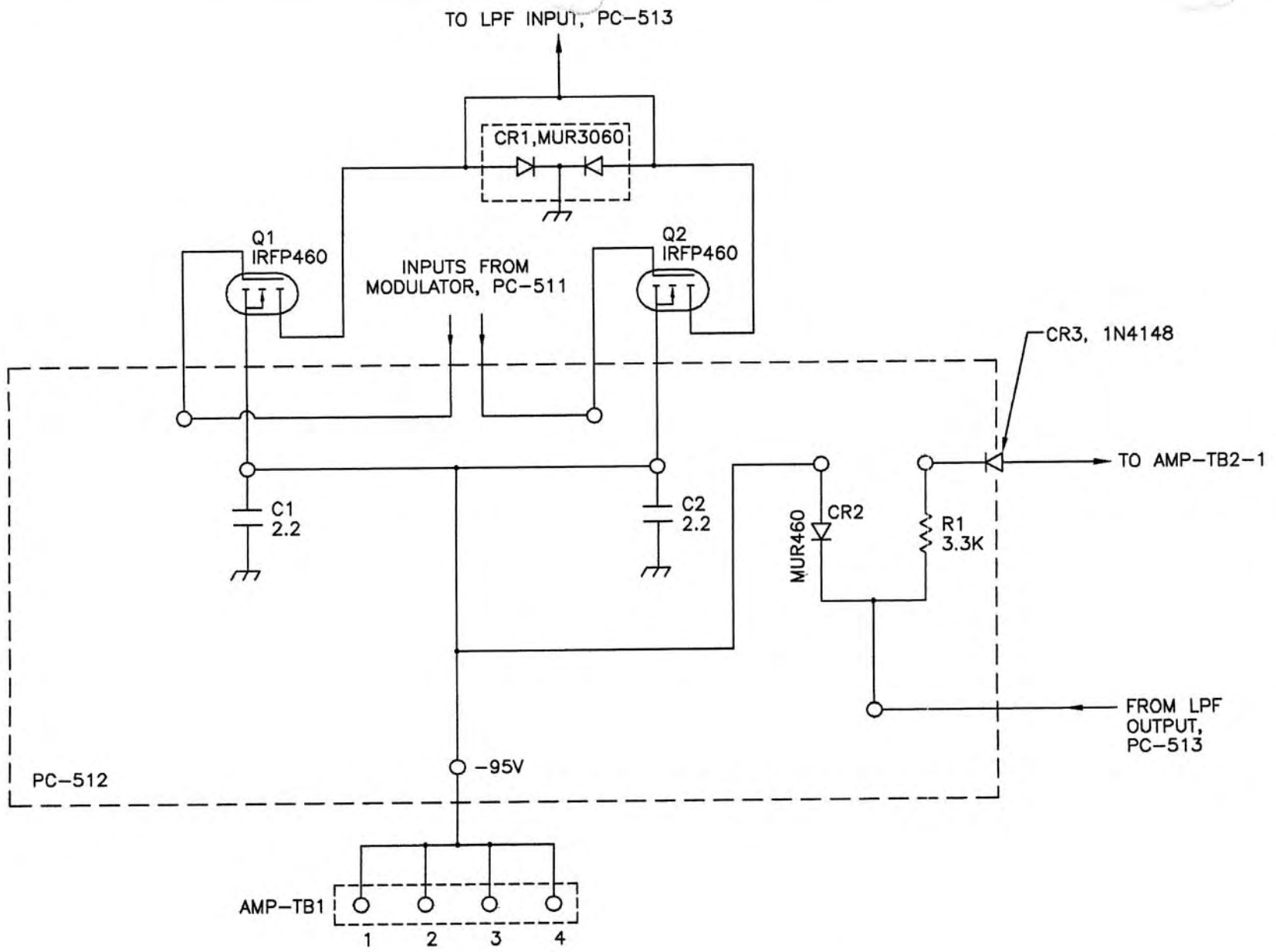
TITLE: MODULATOR PCB COMPONENT LAYOUT (PC–511)

DESIGNED BY: NDT	DATE: 9/8/99	DWG. BY:	DWG. No.
MODIFIED: 3/8/07 by John McCool	CAD: AM–1201C	CRB	AM–1201C

PC – 511 MODULATOR

PARTS LIST

C1,C2	.0056μF/400V POLYPROP.	P3506-ND
C3	.1μF/100V MONO. CERAMIC	P4910-ND
C4	.01μF/100V MONO. CERAMIC	P4904-ND
C5	6.8μF/35V TANTALUM	P2064-ND
C6	10μF/100V ELECTROLYTIC	
CR1,CR3	1N4938	
CR2	1N4737A 7.5V ZENER	
CR4	1N5928B 13V ZENER	
Q1	2N2907	
Q2	2N5415	
Q3	2N2323 THYRISTOR	
Q4	2N3497	
Q5	2N2369	
R1	22.1K/ 1/2W 1%	22.1KH-ND
R2	6.8 OHMS/1/2W	
R3	510/1/2W	
R4,R6,R8,R10	3.32K/1/2W 1%	3320H-ND
R5,R9,R12	1K/1/2W	
R7	2K/5W	YAGEO 719
R11	68 OHMS/1/4W	
R13	43K/1/2 W	
RT1	200K THERMISTOR	KC010N-ND
T1	UNBALANCE TRANSFORMER ASSEMBLY	11-122B
TP1-TP9	PC MOUNT TERMINAL POST	KEYST 1592-2
U1	ICL7667CPA	
XU1	8-PIN IC SOCKET	



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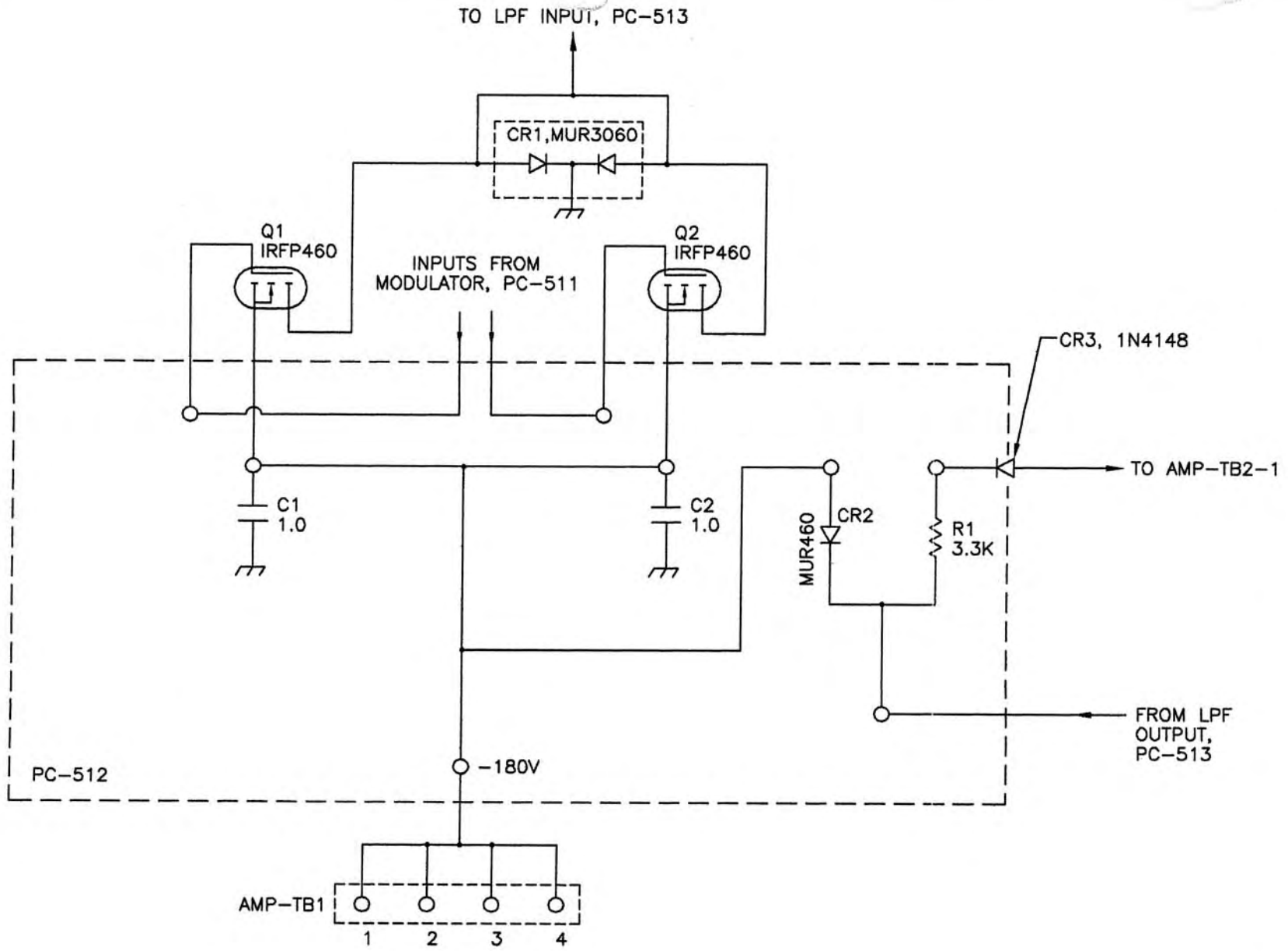
BROADCAST EQUIPMENT CO., INC.
1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184

PULSAR

TITLE:
FINAL MODULATON ASSY, PC-512 (95V)
AND ASSOCIATED COMPONENTS

DESIGNED BY:	DATE: 11/01/99	DWG. BY:	DWG. No.
MODIFIED: 3/8/07 by John McCool	CAD No. AM-1301S	CKB	AM-1301S



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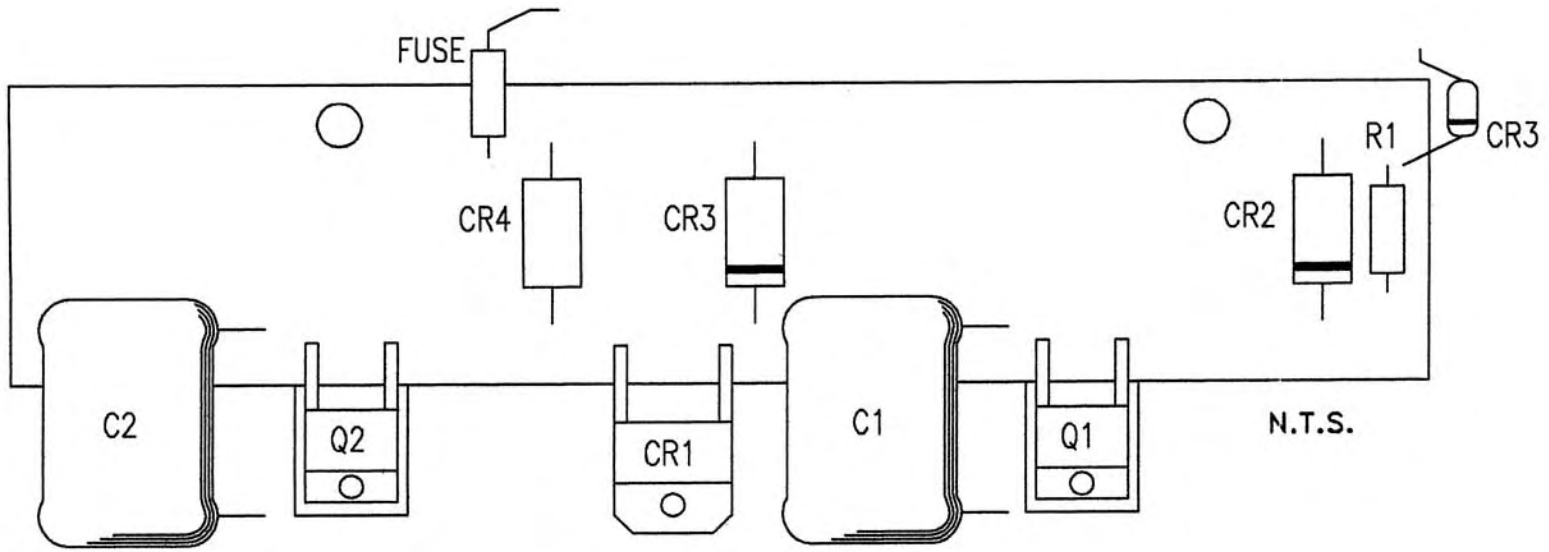
BROADCAST EQUIPMENT CO., INC.
1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184

PULSAR

TITLE:
FINAL MODULATON ASSY, PC-512 (180V)
AND ASSOCIATED COMPONENTS

DESIGNED BY:	DATE: 3/8/07	DWG. BY:	DWG. No.
CHK'ED:	CAD No. AM-1302S	John McCool	AM-1302S



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1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184

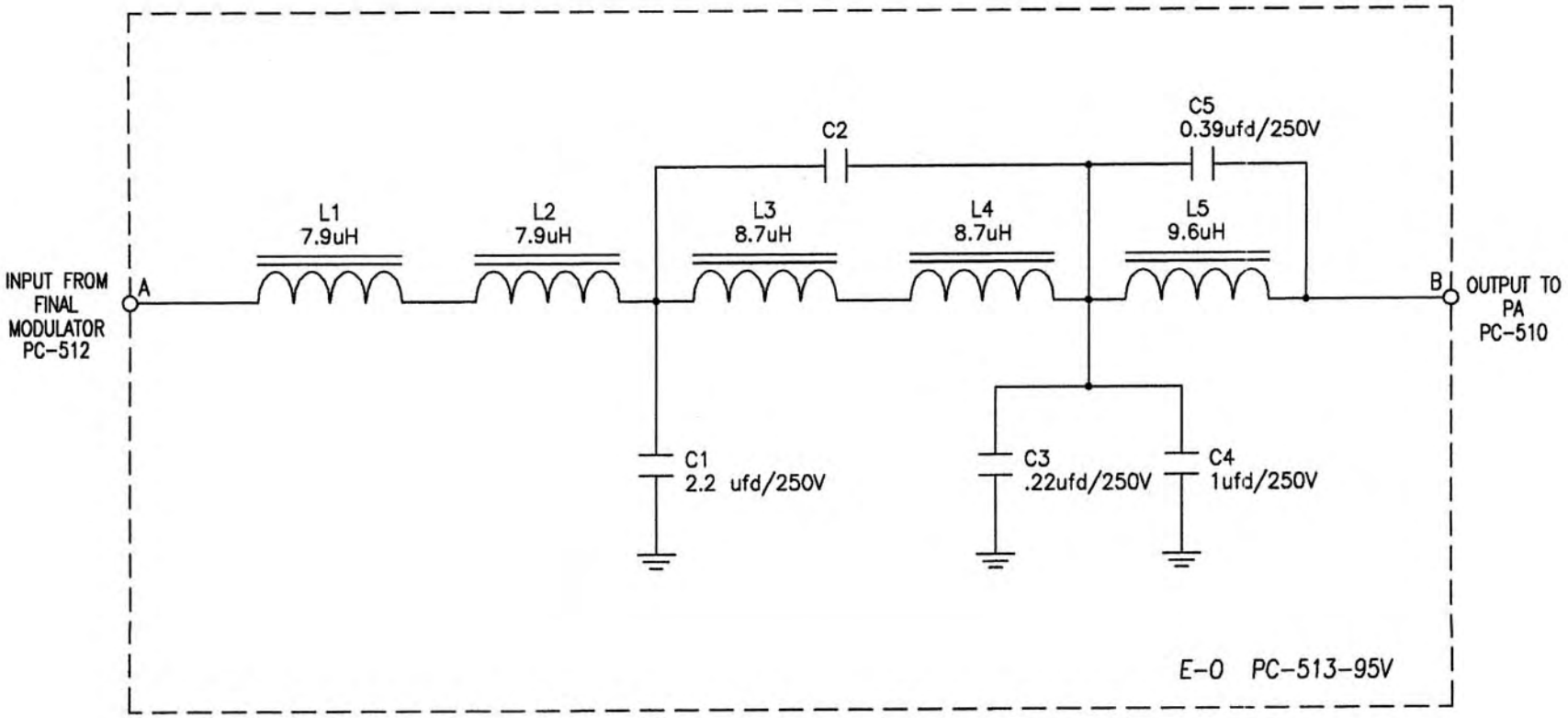
PULSAR

REVISION:	TITLE: FINAL MODULATOR COMPONENT LAYOUT (PC–512)			
	DESIGNED BY: NDT	DATE: 6/21/99	DWG. BY: CRB	DWG. No. AM–1301C
	MODIFIED: 3/8/07 by John McCool	CAD: AM–1301C		

PC-512 FINAL MODULATOR ASSEMBLY & ASSOCIATED COMPONENTS

PARTS LIST

C1,C2	2.2μF/250V METALIZED POLYPROP	PF2225-ND
CR1	MUR 3020	
CR2	BYW 98 - 200	
CR3	1N4148	
Q1,Q2	IRF 540	
R1	3.3K, 1/2W	
AMP TB1	4-POSITION, CHASSIS MOUNT 20A	



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BROADCAST EQUIPMENT CO., INC.

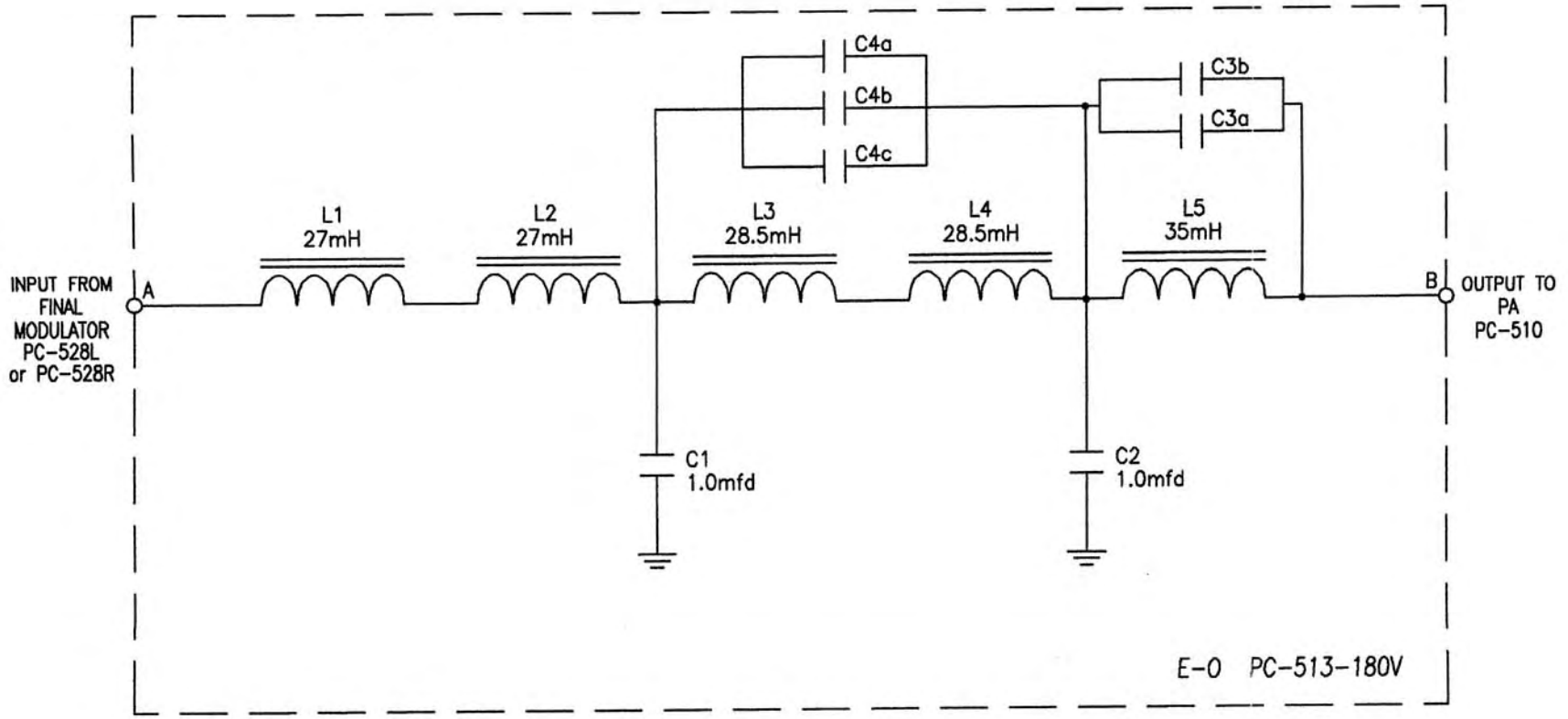
1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184

REVISIONS:

A. DELETED C2, ADDED DESCRIPTIONS, 06/28/01

TITLE: LOW PASS FILTER - SCHEMATIC DIAGRAM PC-513 (95V)

DESIGNED BY: BW	DATE: 12/01/98	DWG. BY: CKB	DWG. No. AM-1601S
MODIFIED: 3/5/07 by John McCool	CAD No. AM-1601S		



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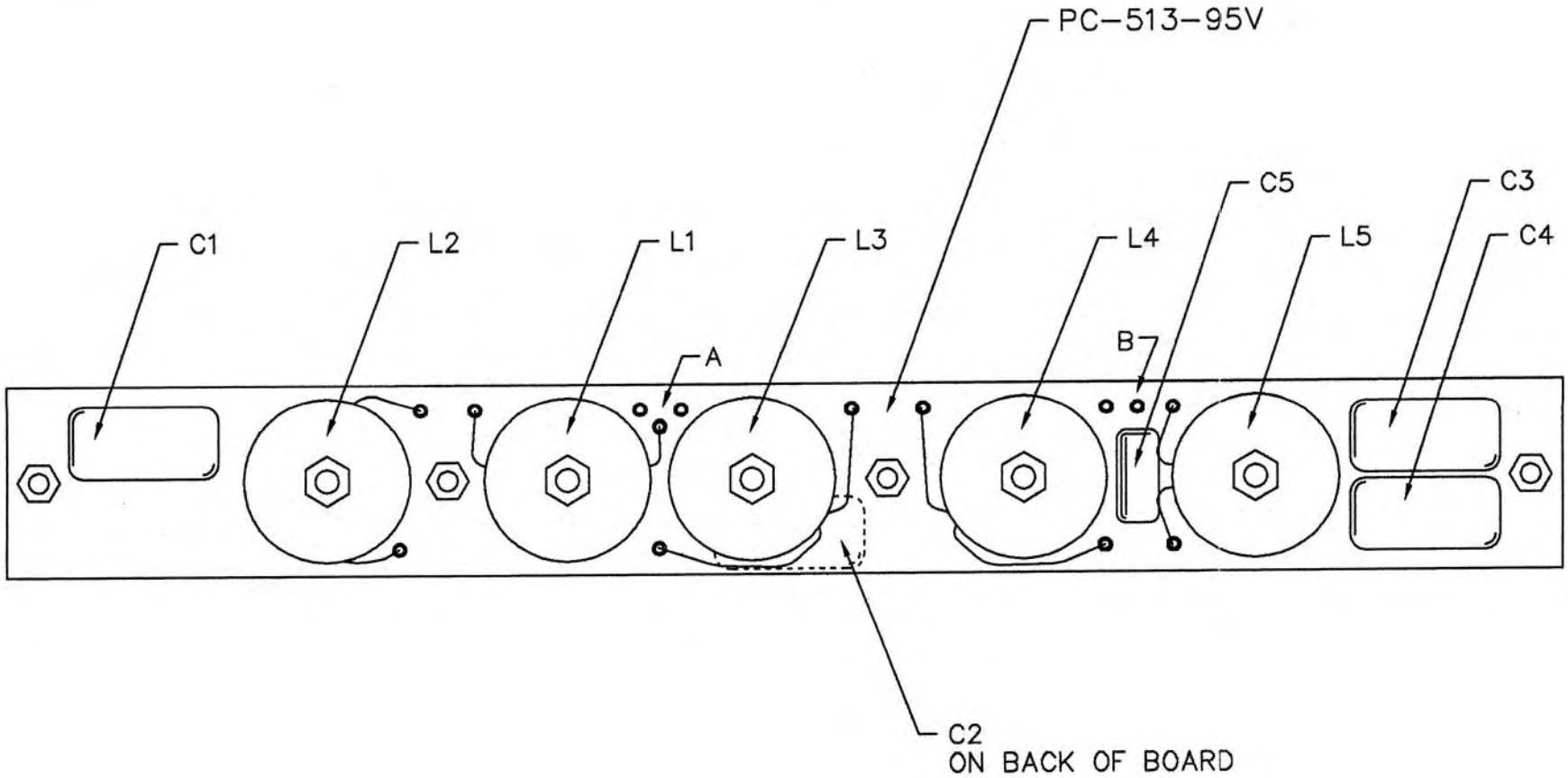
BROADCAST EQUIPMENT CO., INC.
1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184

REVISIONS:

TITLE: LOW PASS FILTER – SCHEMATIC DIAGRAM PC-513 (180V)

DESIGNED BY: BW	DATE: 12/01/98	DWG. BY: CKB	DWG. No. AM-1602S
MODIFIED: 3/5/07 by John McCool	CAD No. AM-1602S		



N.T.S.

PULSAR

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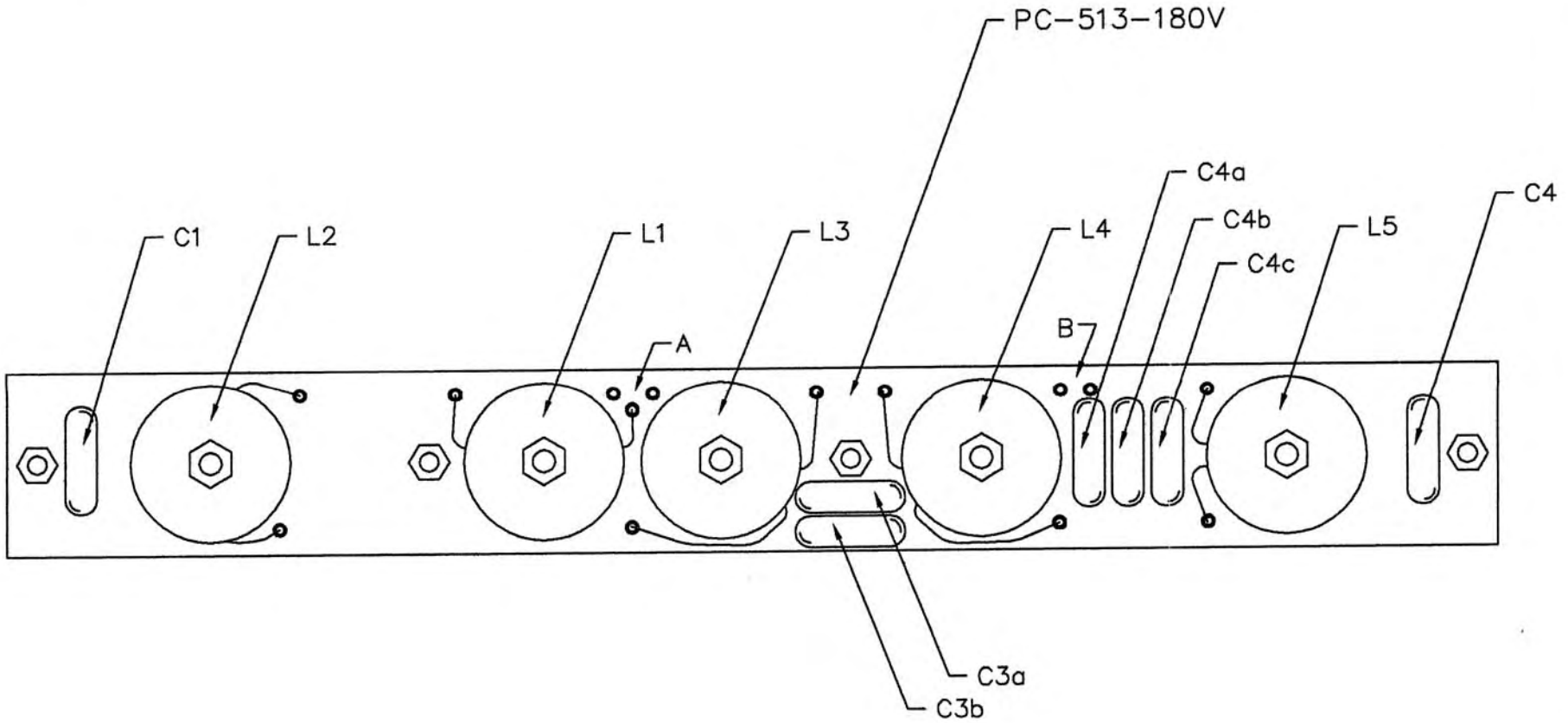
1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184

REVISION DESCRIPTION:	REVISION:
A. L6 CALLOUT CHG. TO L5, 03/10/00 B. DELETED C2, 06/28/01	B

TITLE: LOW PASS FILTER COMP LAYOUT, PC-513 (95V)

DESIGNED BY: PI	DATE: 10/22/99	DWG. BY:	DWG. No.
MODIFIED: 3/5/07 by John McCool	CAD: AM-1105C	CRB	AM-1105C



N.T.S.

PULSAR

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1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184

REVISION DESCRIPTION:	REVISION:
A. L6 CALLOUT CHG. TO L5, 03/10/00 B. DELETED C2, 06/28/01	B

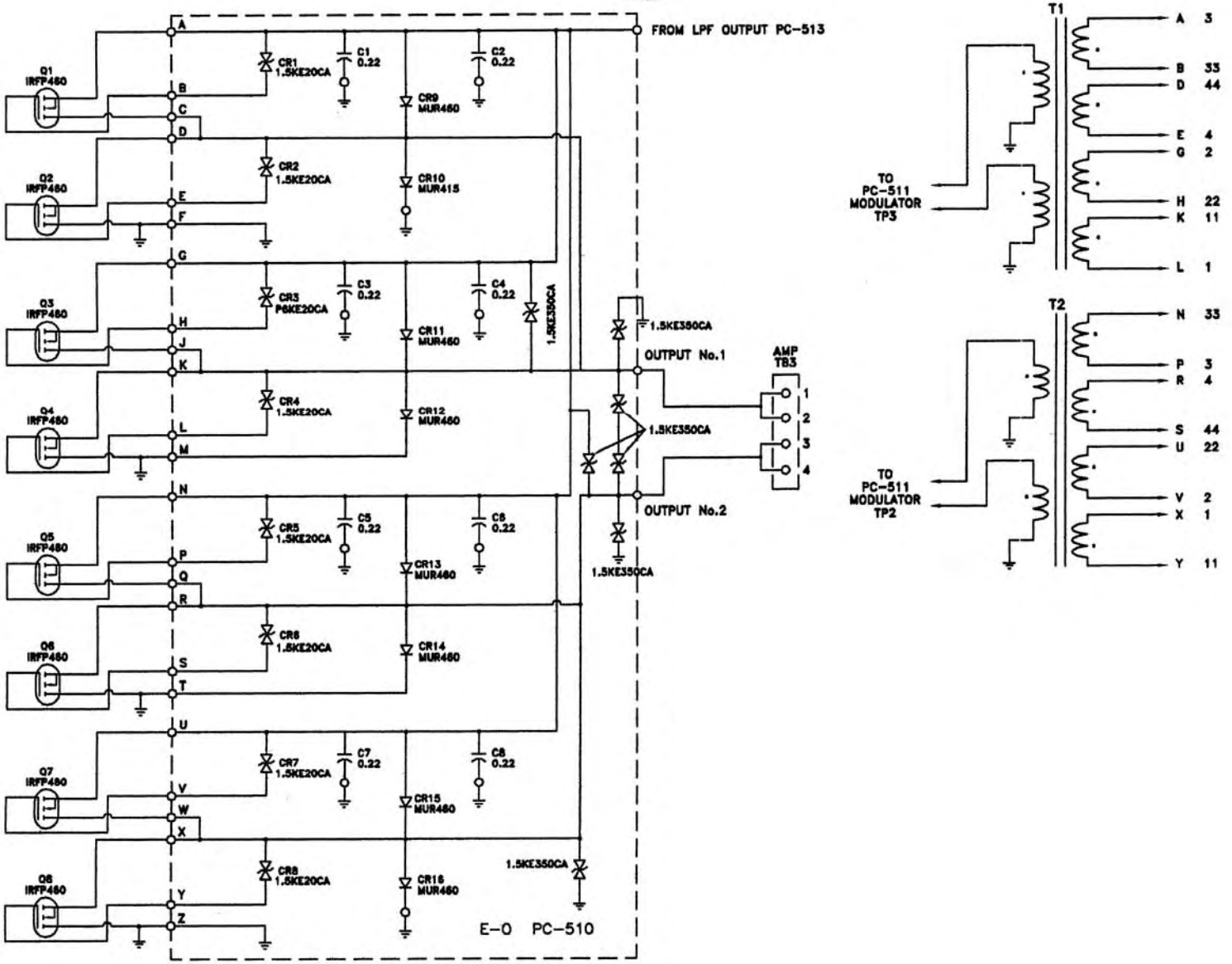
TITLE: LOW PASS FILTER
COMP LAYOUT, PC-513 (180V)

DESIGNED BY: PI	DATE: 10/22/99	DWG. BY:	DWG. No.
MODIFIED: 3/5/07 by John McCool	CAD: AM-1108C	CRB	AM-1108C

PC – 513 LOW PASS FILTER

PARTS LIST

C1	3.3μF/250V METALLIZED POLYPROP	PF2335-ND
C2,C3,C4	2.7μF/250V METALLIZED POLYPROP	PF2275-ND
C5	.39μF/250V METALLIZED POLYPROP	PF2394-ND
L1,L2	7.9μH POT CORE ASSEMBLY	5678-362221
L3,L4	8.7μH POT CORE ASSEMBLY	5678-362221
L5	9.6μH POT CORE ASSEMBLY	5678-362221



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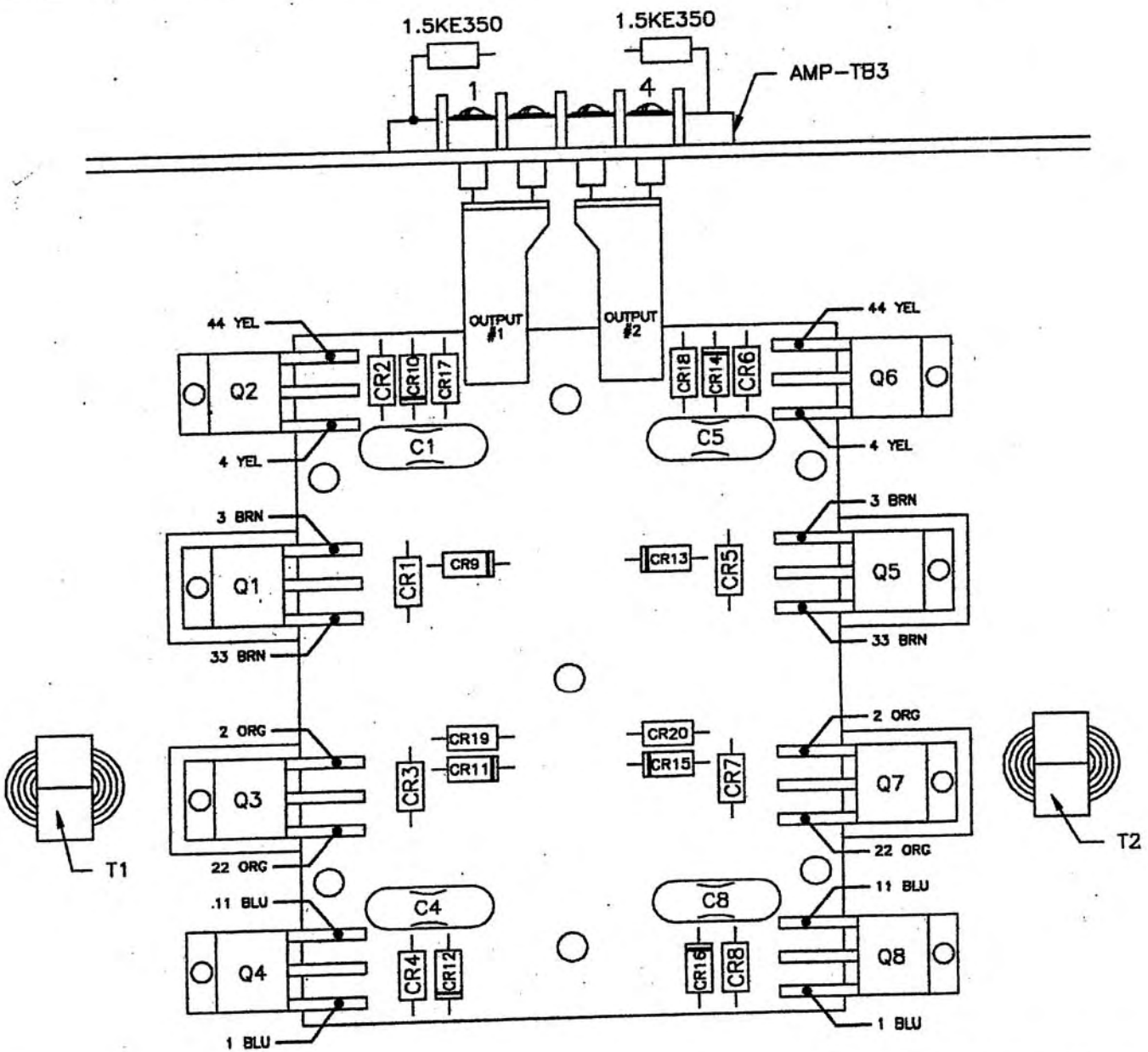
1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184

PULSAR

TITLE: PC-510 POWER AMPLIFIER AND ASSOCIATED COMPONENTS

DESIGNED BY:	DATE: 11/25/98	DWG. BY:	DWG. No.
MODIFIED: 3/5/07 by John McCool	CAD No. AM-1101S	E.R.B	AM-1101S



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1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184

NOTES:
N.T.S.

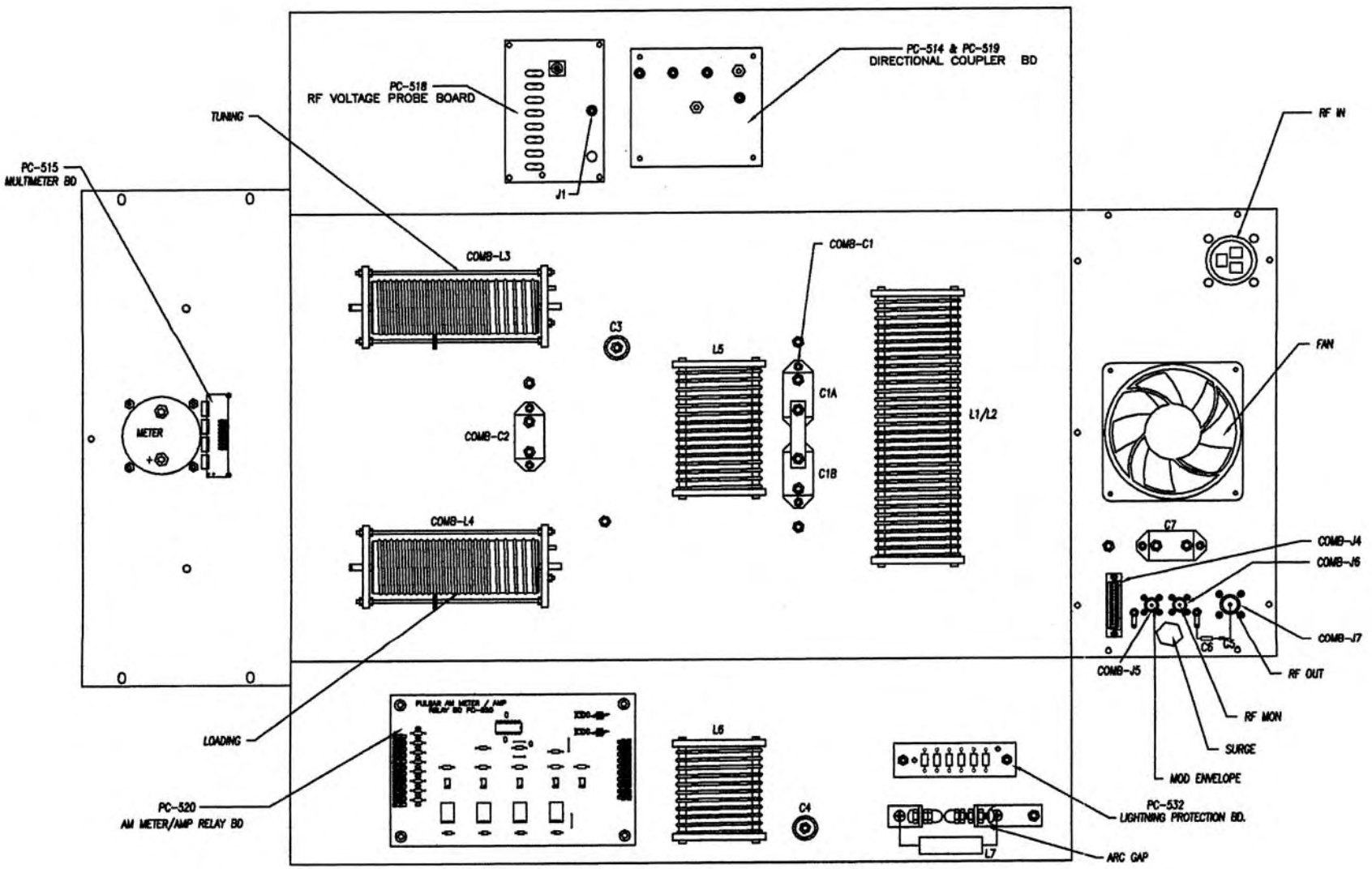
TITLE: PC-510 (POWER AMPLIFIER) COMPONENT LAYOUT

DWG. BY: CKB
DATE: 6/18/97
REV: -
MODIFIED: 4/28/98 by John McCool
DWG. No. AM-1101C

PC - 510 POWER AMPLIFIER AND ASSOCIATED COMPONENTS

PARTS LIST

C1-C8	.22μF/250V METALIZED POLYPROP.	PF2224-ND
C9	6.8μF/6V TANTALUM	
CR1-CR8	P6KE20CA ZENER TRANSIENT SUPPRESSOR	
CR9-CR16	BYW 98 - 200	
Q1-Q8	IRF540	
Q9	MCR264-8 SCR	
T1,T2	INPUT TRANSFORMER ASSEMBLY	11-250B
AMP TB3	4-POSITION, CHASSIS MOUNT 20A	



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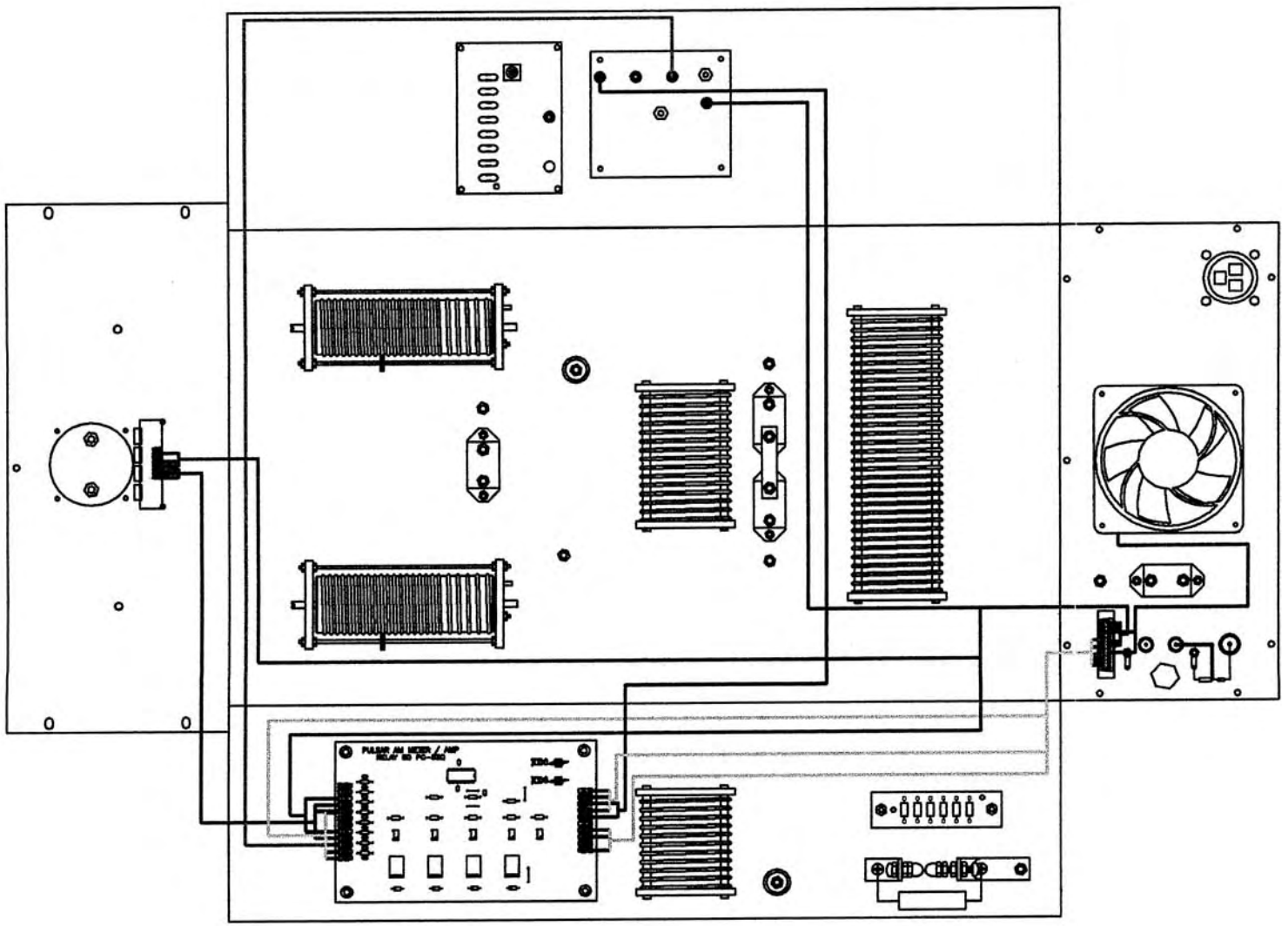
1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184

PULSAR

REVISION: A

TITLE: PULSAR AM COMBINER
DRAWER COMPONENT LAYOUT

SCALE: NTS	DESIGNED BY:	DATE: 7/28/99	DWG. BY:	DWG. No.
CAD: AM-0002C	BW	MODIFIED: 2/26/07 by John McCool	ESB	AM-0002C



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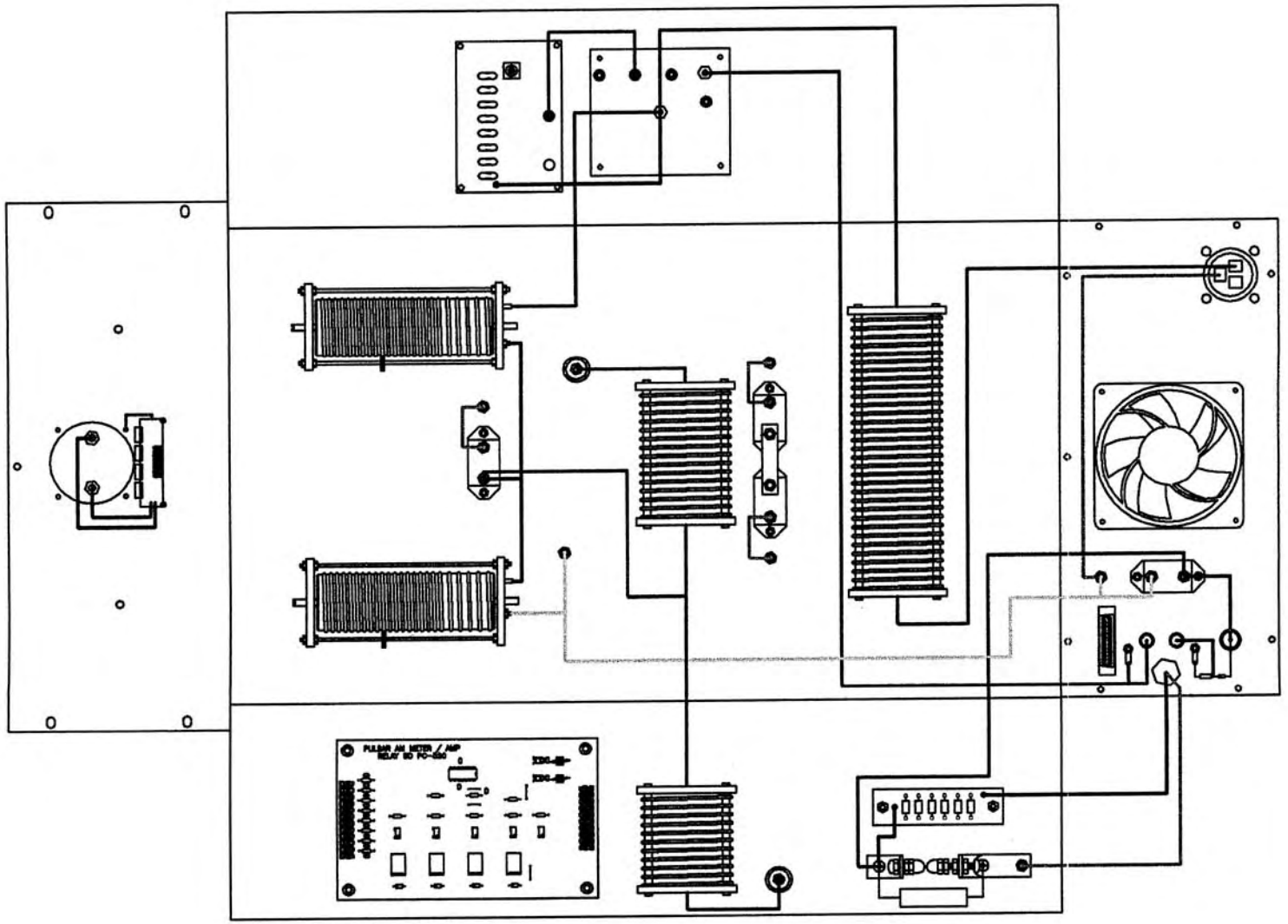
BROADCAST EQUIPMENT CO., INC.
1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184

PULSAR

REVISION:	TITLE:				
A	PULSAR AM COMBINER D–SUB WIRING LAYOUT				
SCALE: NTS	DESIGNED BY: BW	DATE: 2/27/07	DWG. BY: John McCool	DWG. No. AM–0003C	
CAD: AM–0003C		CK BY:			



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BROADCAST EQUIPMENT CO., INC.
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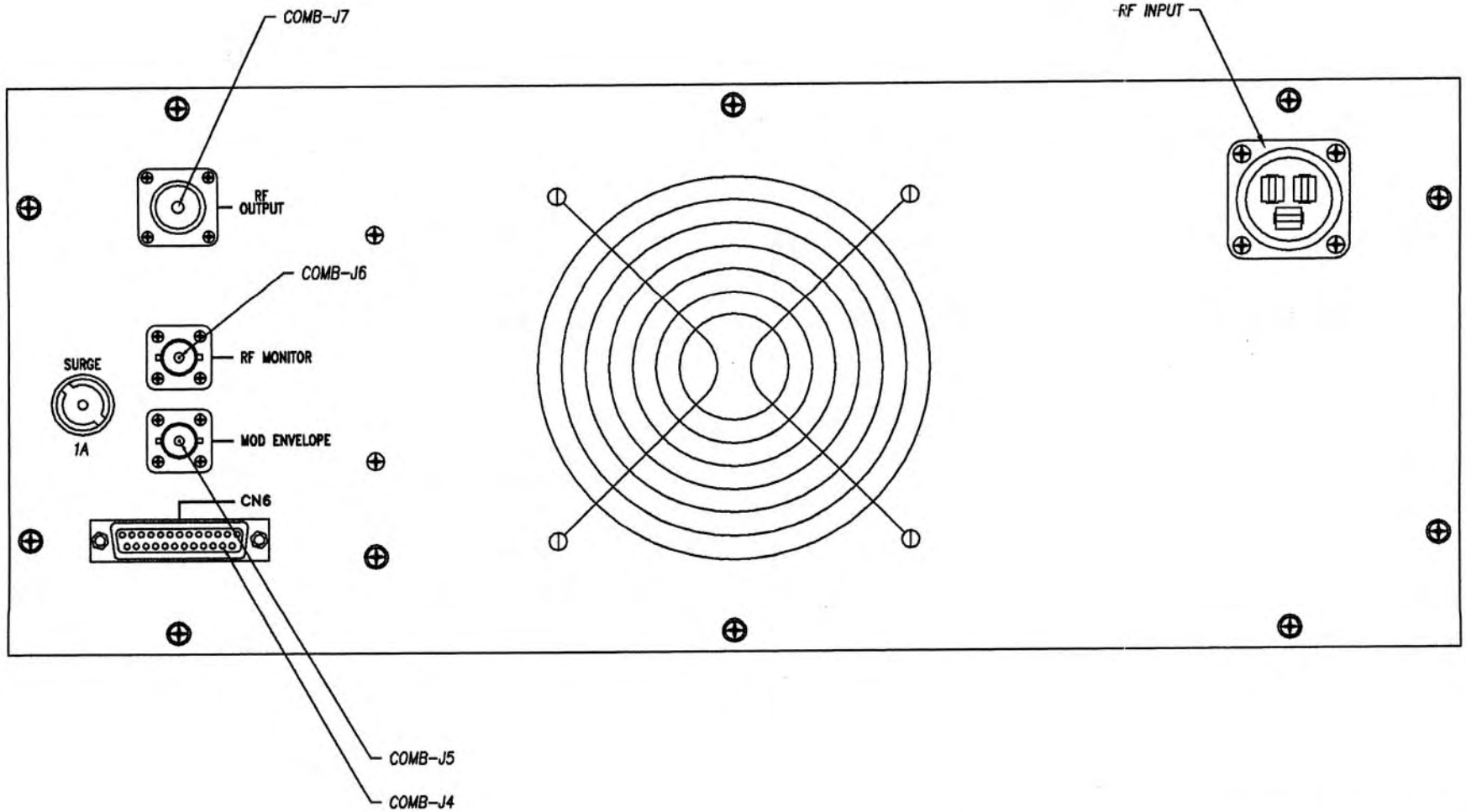
PULSAR

REVISION:	TITLE: PULSAR AM COMBINER COIL WIRING LAYOUT				
A	SCALE: NTS	DESIGNED BY: BW	DATE: 2/27/07	DWG. BY: John McCool	DWG. No. AM-0004C
	CAD: AM-0004C		CK BY:		



PULSAR

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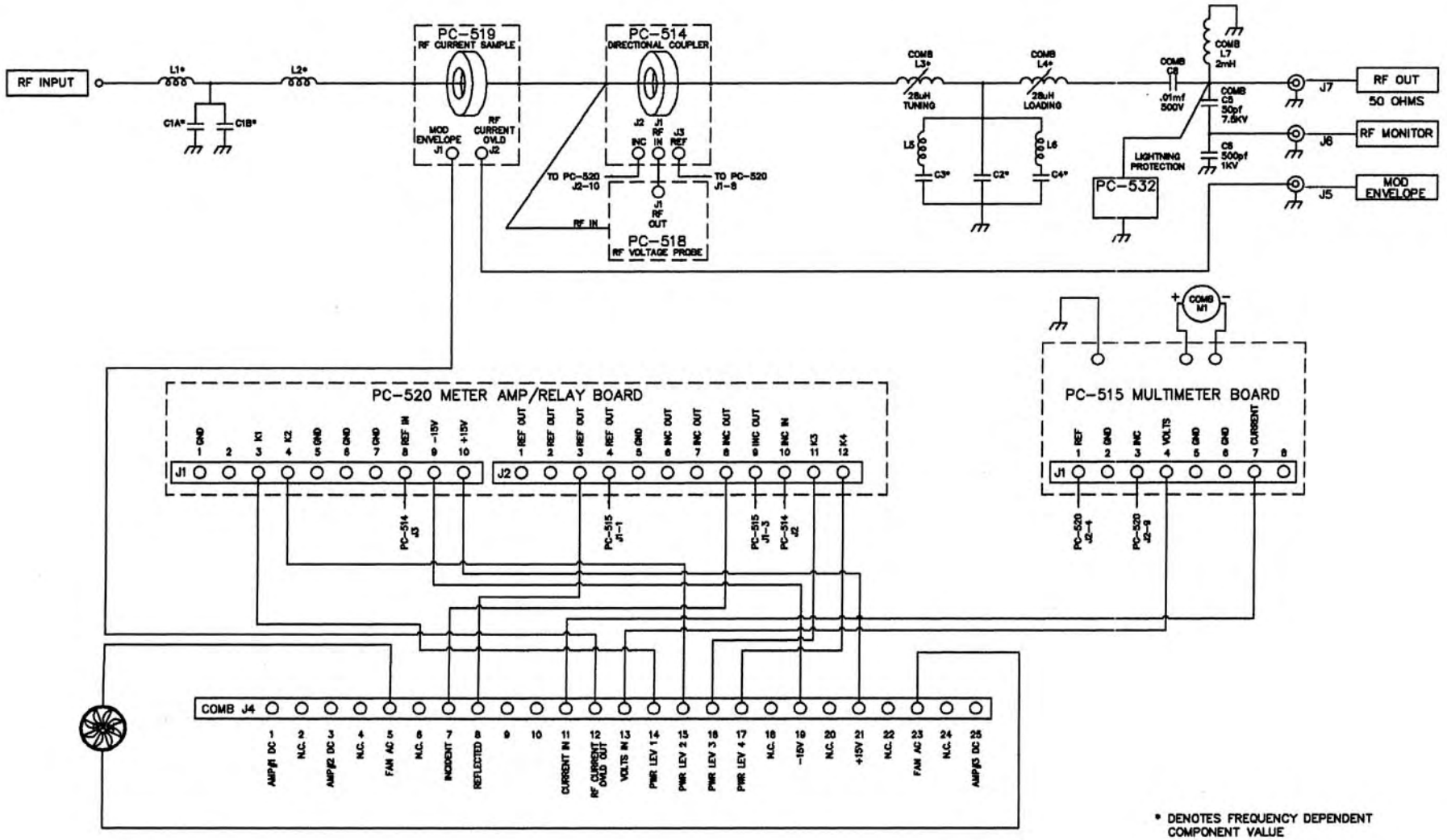
REVISION DESCRIPTION:	REVISION:
IDENTIFY CONNECTIONS, 11/12/99 CHG CN#, 12/22/99	B

TITLE: PULSAR COMBINER REAR PANEL

SCALE: NA	DESIGNED BY:	DATE: 7/26/99	DWG. BY:	DWG. No.
CAD: AM-00060	NDT/	MODIFIED: 2/26/07 by John McCool	ESB	AM-00060

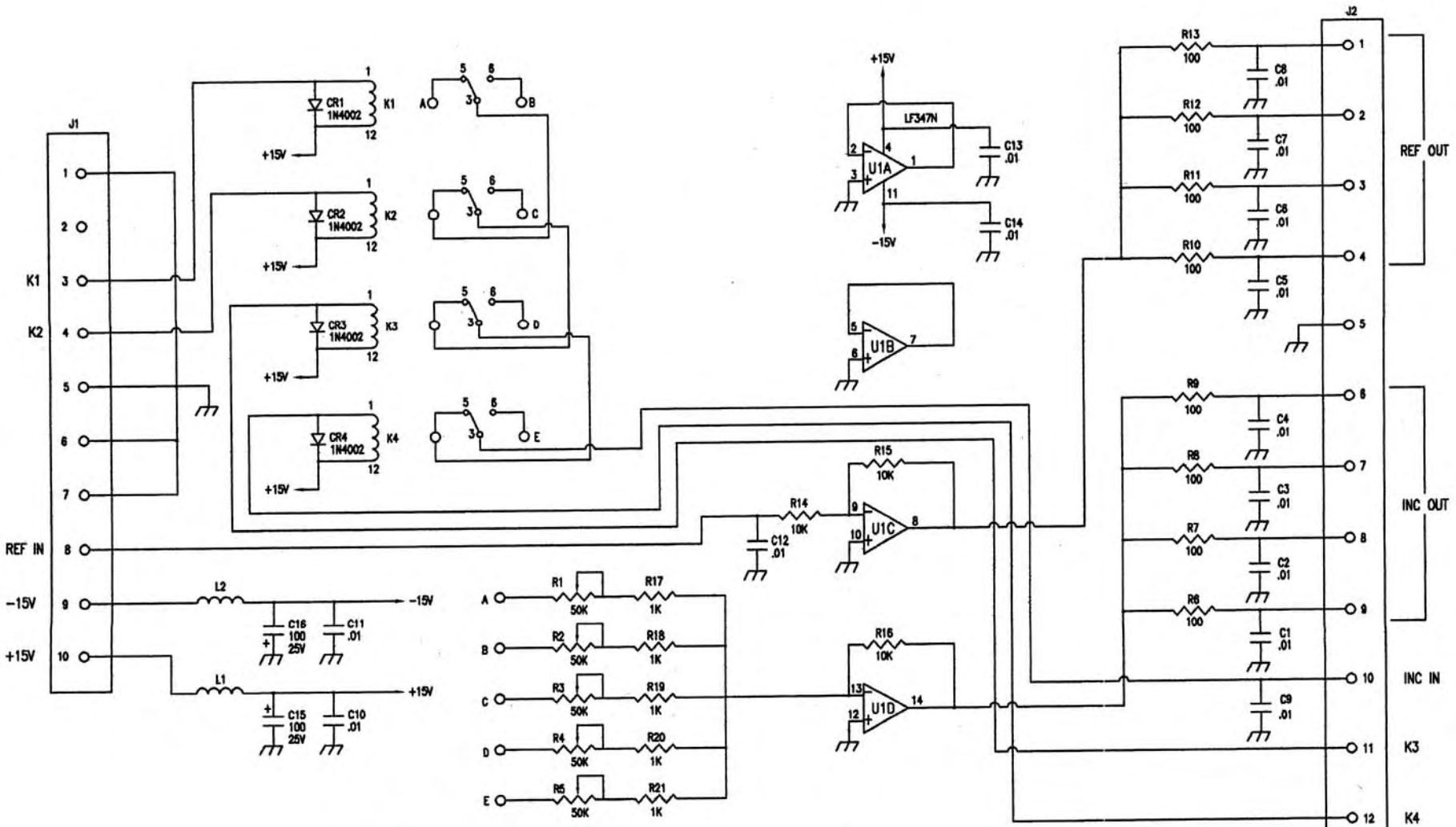


Energy-Onix BROADCAST EQUIPMENT CO., INC. 1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184 PULSAR		REVISION:	TITLE: PULSAR 1000 COMBINER DRAWER SCH DIA		
			SCALE: NA	DESIGNED BY: NDT	DATE: 07/30/01
			CAD: AM-3013s		MODIFIED: 2/27/07 by John McCool
			DWG. BY: DP	DWG. No. AM-3013s	

COMBINER DRAWER - PULSAR 1000

PARTS LIST

COMB C1	F2 TYPE TRANSMITTING CAPACITOR, FREQUENCY DETERMINED	
COMB C2	F2 TYPE TRANSMITTING CAPACITOR, FREQUENCY DETERMINED	
COMB C3	F2 TYPE TRANSMITTING CAPACITOR, FREQUENCY DETERMINED	
COMB C4	10μμF/7.5KV DOORKNOB	
COMB C5	.1μF / 500V	F2 TYPE
COMB J1-J3,COMB J7	N-FEMALE	
COMB J4	DB25-MALE	
COMB J5,COMB J6	BNC FEMALE	
COMB L1-COMB L5	35μH	B & W 2006T
COMB L6,COMB L7	28μH VARIABLE	CRC 229—203
COMB L8	2mH CHOKE	C – B 6400 - 8
COMB M1	100μA	TRANSCAT/EIL



NOTE: RELAYS SHOWN ENERGIZED (POWER LEVELS, MANUAL SELECTED).

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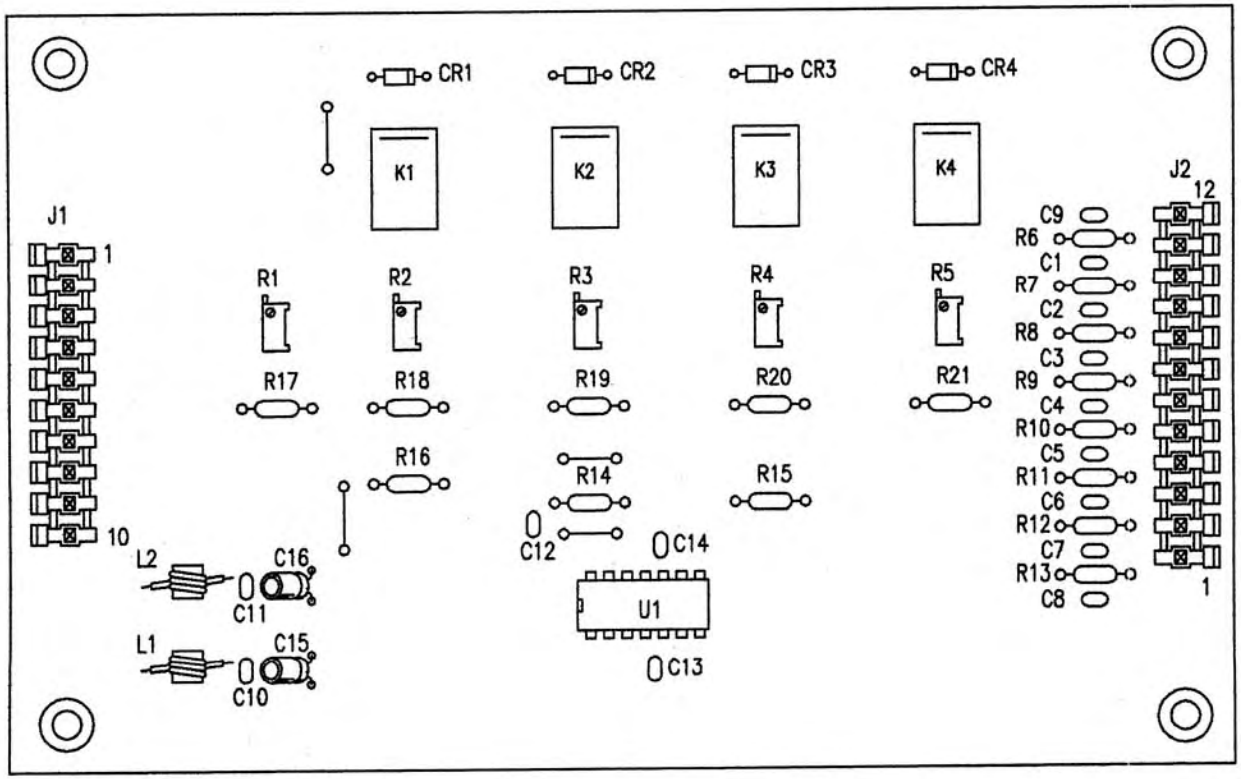
PULSAR

TITLE: METER AMP/RELAY BOARD PC-520 SCHEMATIC DIAGRAM					
SCALE: NA	DESIGNED BY: PI	DATE: 9/1/99	DWG. BY: CSB	DWG. No. AM-2002S	
CAD: AM-2002S		MODIFIED: 3/5/07 by John McCool			



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PULSAR

REVISION: -

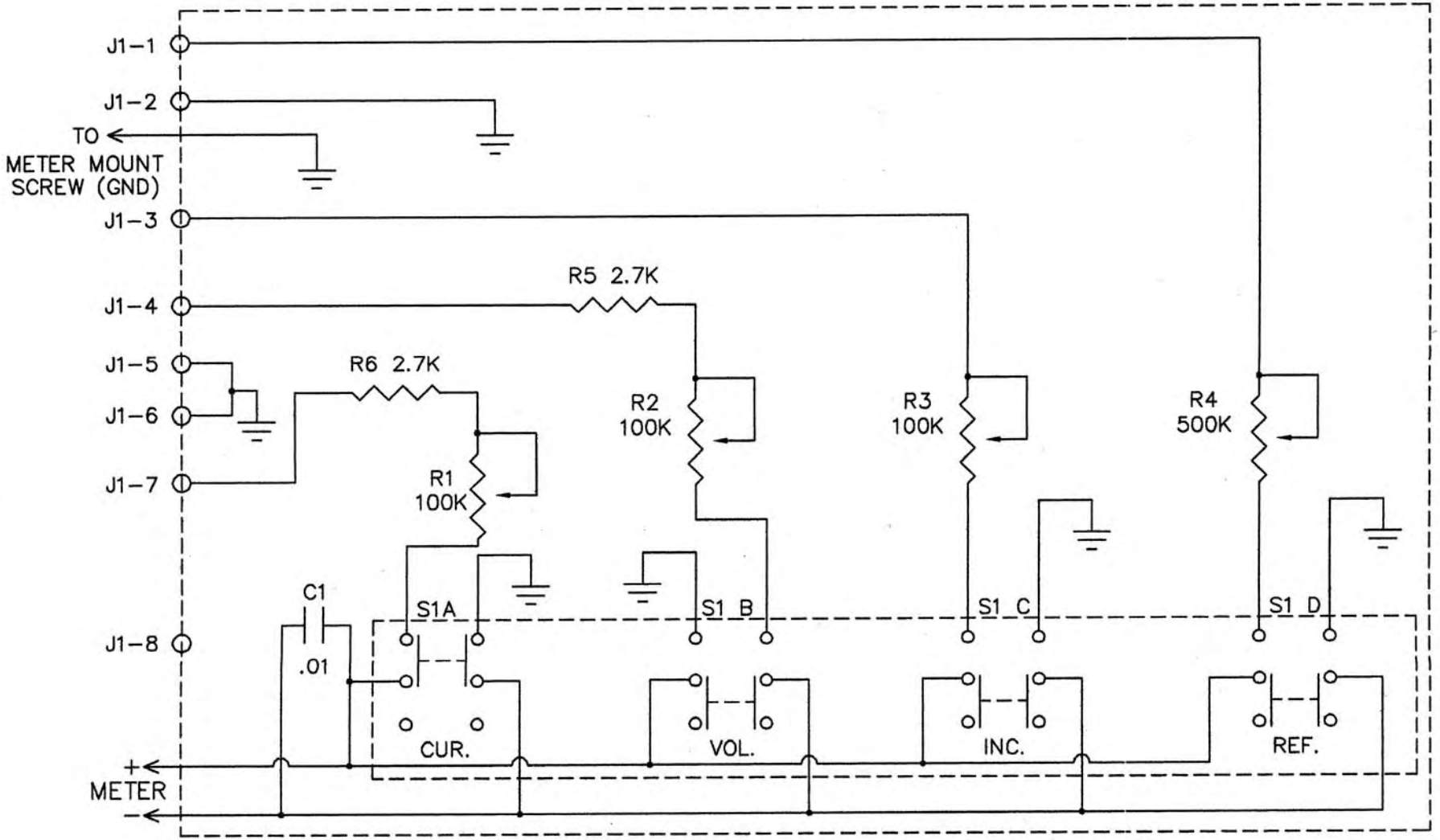
TITLE: PULSAR AM METER AMP/ RELAY BD PC-520

DESIGNED BY: NDT	DATE: 07/27/99	DWG. BY: ESB	DWG. No. AM-2002C
MODIFIED: 3/5/07 by John McCool	CAD: AM-2002C		

PC – 520 METER AMP/RELAY BOARD

PARTS LIST

C1-C14	.01μF/100V STACK METAL FILM	P4713-ND
C15,C16	100μF/25V ELECTROLYTIC	
CR1-CR4	1N4002	
J1	10 PIN MOLEX HEADER	
J2	12 PIN MOLEX HEADER	
K1-K4	AROMAT, NON-LATCHING	DF2E-DC12
L1,L2	FERRITE BEAD	21-129B
R1-R5	50K VARIABLE, MULTI-TURN	
R6-R13	100 OHM, 1/4W	
R14-R16	10K, 1/4W	
R17-R21	1K, 1/4W	
U1	LF347N	
XU1	14-PIN IC SOCKET	



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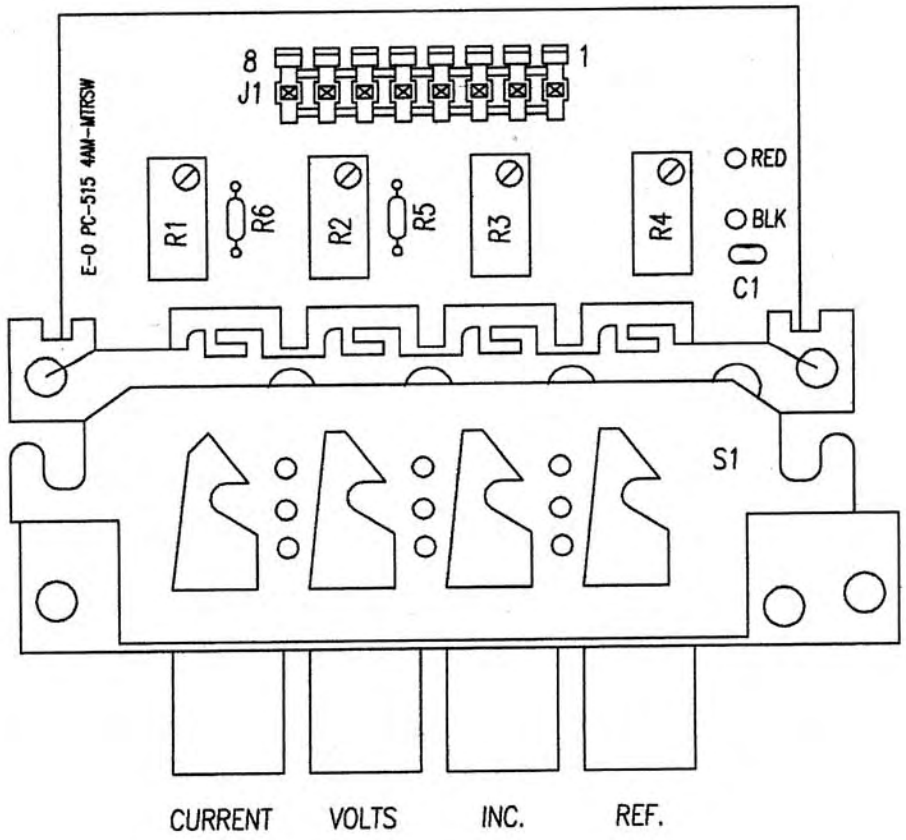
1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184

REVISION DESCRIPTION:	REVISION:
RE ID J#'s, TITLE CHANGED, 9/22/99	A

TITLE: MULTIMETER BOARD SCHEMATIC DIA. (PC-515)

DESIGNED BY: NDT	DATE: 11/04/98	DWG. BY: CKB	DWG. No. AM-2001S
MODIFIED: 3/5/07 by John McCool	CAD No. AM-2001S		



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1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184

REVISIONS:

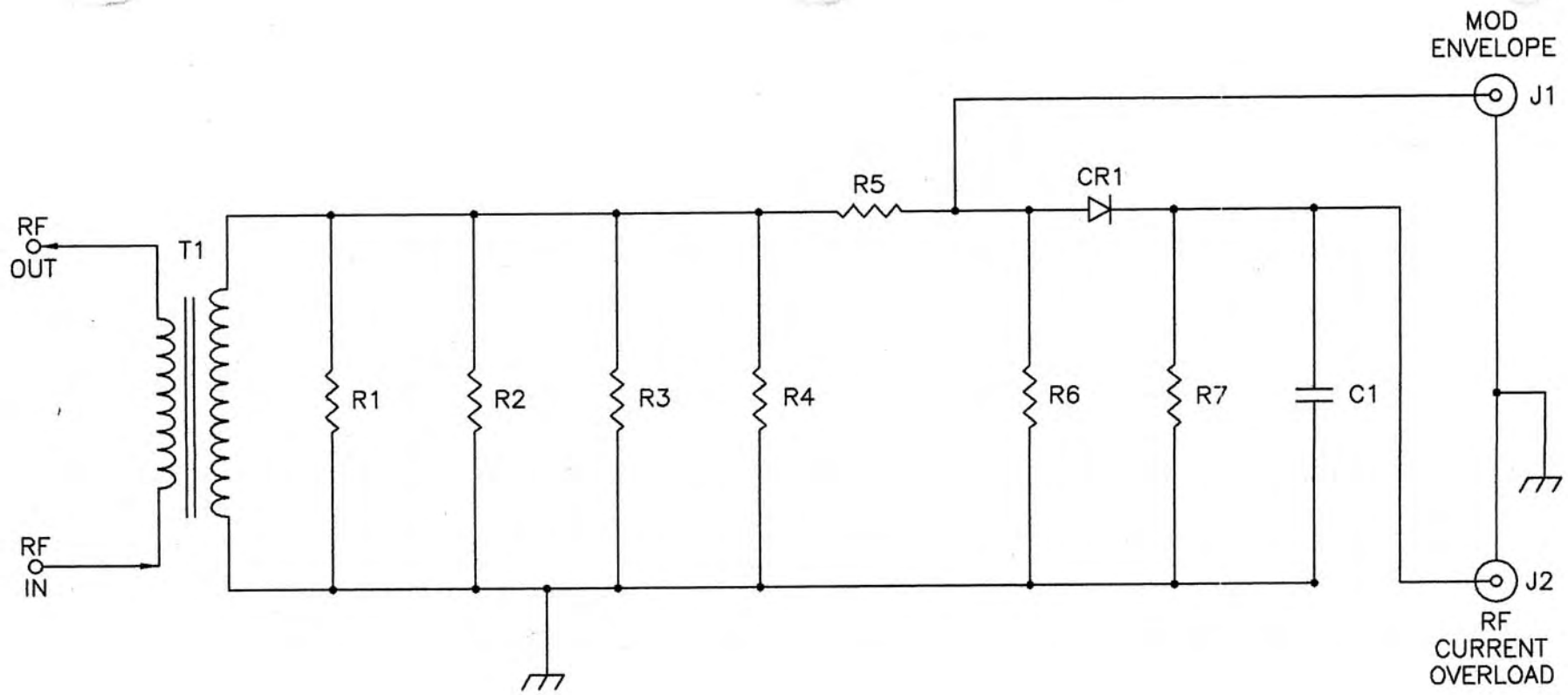
TITLE: MULTIMETER BD, PC-515 COMPONENT LAYOUT

DESIGNED BY: NDT	DATE: 9/22/99	DWG. BY: CKB	DWG. No. AM-2001C
MODIFIED: 3/5/07 by John McCool	CAD No. AM-2001C		

PC- 515 MULTIMETER BOARD

PARTS LIST

C1	.01/1KV DISC CERAMIC	
J1	8-PIN MOLEX HEADER	
R1-R3	100K VARIABLE, MULTI-TURN	
R4	500K VARIABLE, MULTI-TURN	
R5,R6	2.7K, 1/4W	
S1	SWITCHCRAFT 4-POSITION	65041K-206



PARTS LIST

C1	.27uf/100V STACK METAL FILM
CR1	1N4938
J1	BNC JACK, LOCATED ON PC-523 (COVER BOARD)
J2	RCA JACK, LOCATED ON PC-523 (COVER BOARD)
R1-R5	47ohm, 2W
R6	100K, 1/2W
T1	10 TURNS WOUND ON 5943003801 FERRITE TORROID
R7	10K 1/2W

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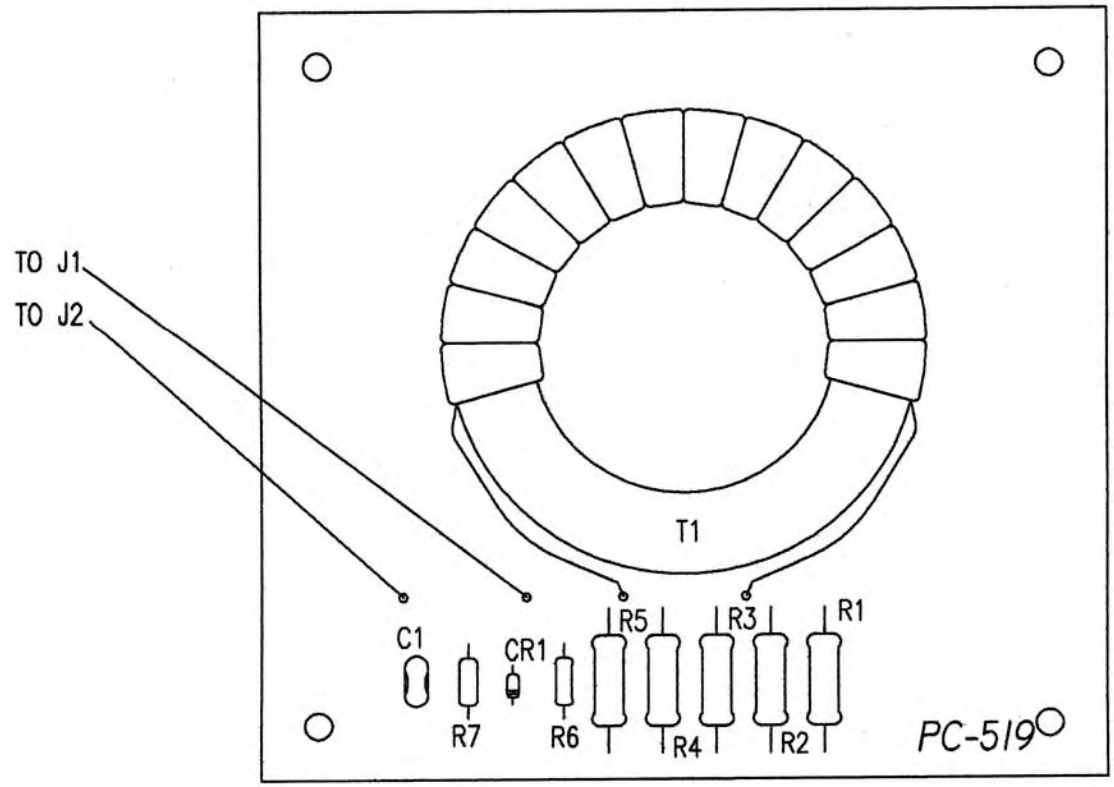
BROADCAST EQUIPMENT CO., INC.
1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184

REVISIONS:

TITLE: RF CURRENT SAMPLE BD (PC-519)

DESIGNED BY: NDT/	DATE: 07/15/99	DWG. BY: CKB	DWG. No. AM-1901S
CHK'ED:	CAD No. AM-1901S		



PULSAR

Energy–Onix
BROADCAST EQUIPMENT CO., INC.
1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184

REVISIONS:

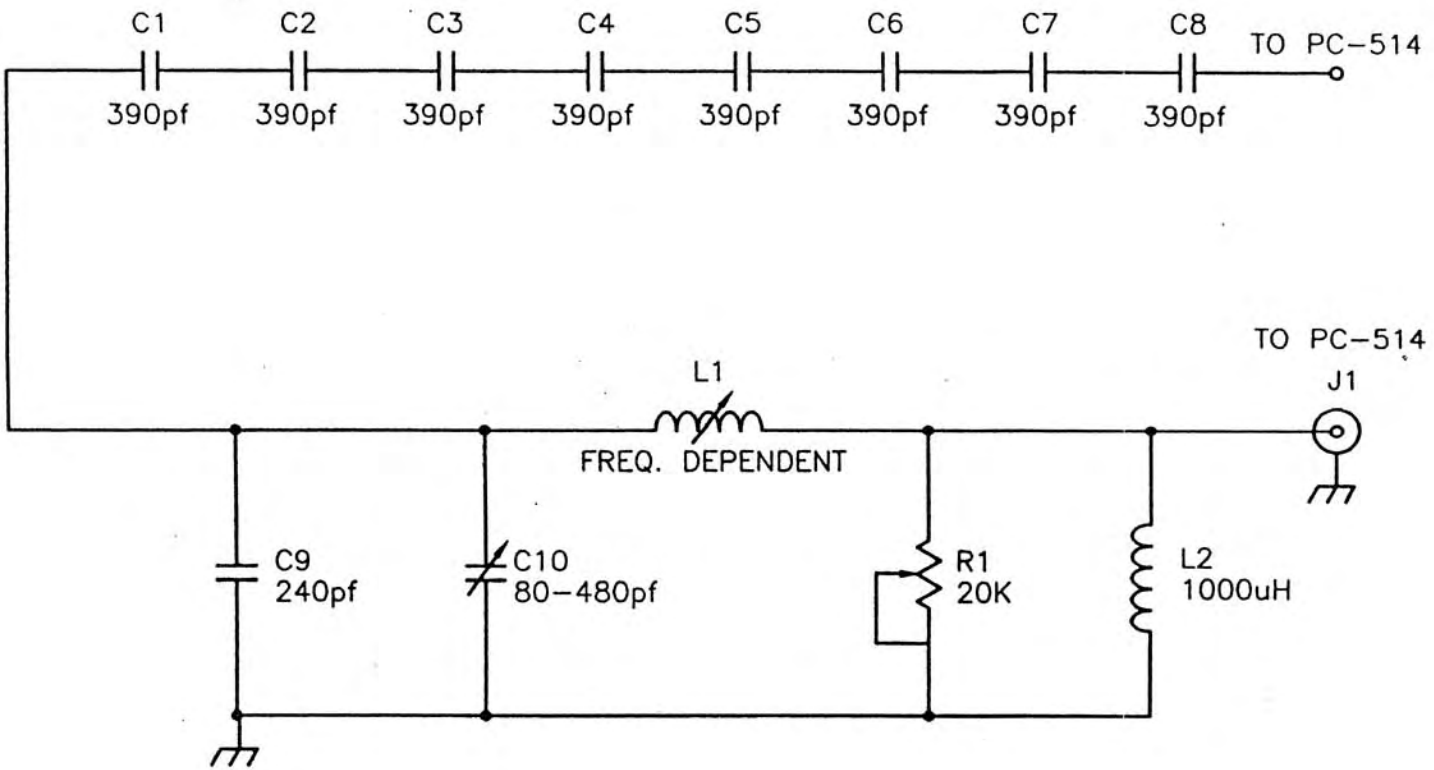
TITLE: RF CURRENT SAMPLE BD COMPONENT LAYOUT (PC–519)

DESIGNED BY:	DATE: 7/9/99	DWG. BY:	DWG. No.
CHK'ED:	CAD: AM–1901C	ERB	AM–1901C

PC- 519 RF CURRENT SAMPLE

PARTS LIST

C1	.01uf/100V STACK METAL FILM	
CR1	1N4938	
J1	BNC JACK, LOCATED ON PC-523 (COVER BOARD)	
J2	RCA JACK, LOCATED ON PC-523 (COVER BOARD)	
R1-R5	47ohm, 2W	
R6, R7	100K, 1/2W	
T1	10 TURNS WOUND ON FERRITE TORROID	5943003801



PARTS LIST

C1–C8	390pf DIP MICA
C9	240pf, DIP MICA
C10	80–480pf TRIMMER, EL–MENCO 466
J1	RCA JACK
L1	530–627kHz, 28–30uH, MILLER 9054 628–887kHz, 14–28uH, MILLER 9053 888–1255kHz, 7–14uH, MILLER 9052 1256–1710kHz, 3–7uH, MILLER 9051
L2	1000uH, DN41105ND
R1	20K VARIABLE, SINGLE TURN

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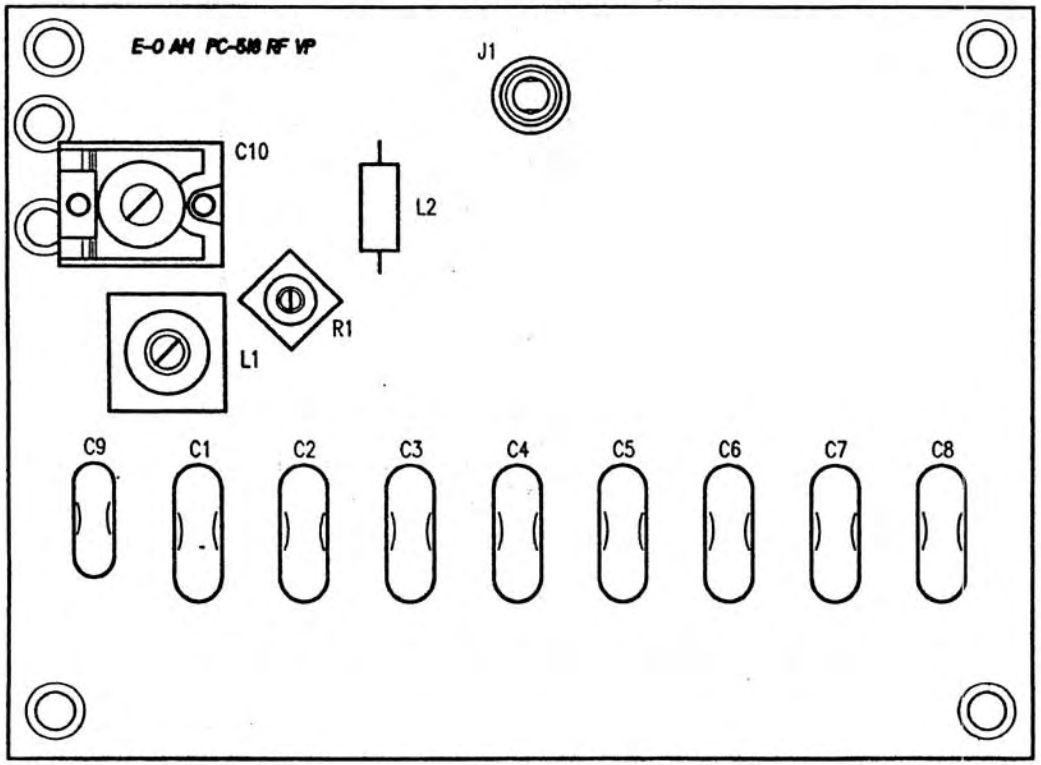
1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184

REVISION DESCRIPTION:	REVISION:
ADDED R1, REMOVED C11, 8/12/99	A

TITLE: RF VOLTAGE PROBE (PC–518)

DESIGNED BY: NDT/	DATE: 07/15/99	DWG. BY:	DWG. No.
CHK'ED:	CAD No. AM–1903S	CKB	AM–1903S



N.T.S.

PULSAR

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1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184

REVISIONS:

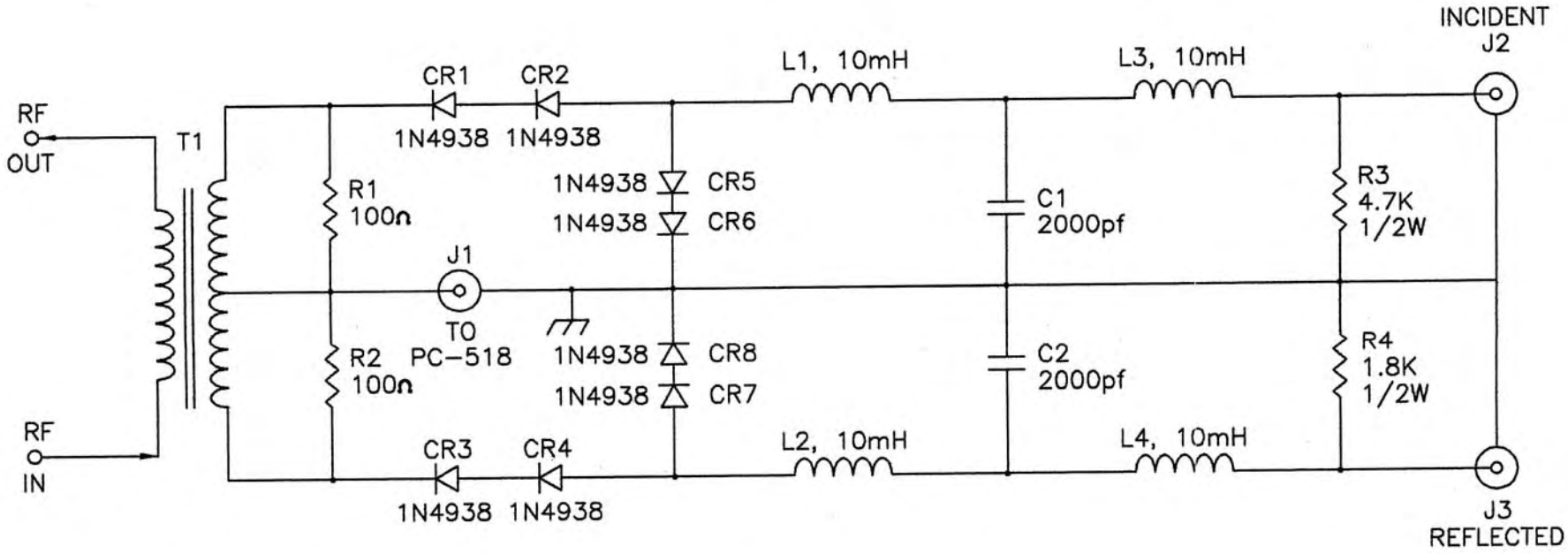
TITLE: RF VOLTAGE PROBE BOARD COMPONENT LAYOUT (PC–518)

DESIGNED BY: NDT	DATE: 10/30/98	DWG. BY:	DWG. No.
CHK'ED:	CAD: AM–1903C	CRB	AM–1903C

PC- 518 RF VOLTAGE PROBE

PARTS LIST

C1-C8	390pf DIP MICA	
C9	240pf DIP MICA	
C10	80-480pf TRIMMER	EL-MENCO 466
J1	RCA JACK	
L1	530-627kHz, 28-30uH	MILLER 9054
	628-887kHz, 14-28uH	MILLER 9053
	888-1255kHz, 7-14uH	MILLER 9052
	1256-1710kHz, 3-7uH	MILLER 9051
L2	1000uH, DN41105ND	
R1	20K VARIABLE, SINGLE TURN	



PARTS LIST

C1,C2	2000pf/500V DIP MICA
CR1–CR8	1N4938
J1–J3	RCA JACK, LOCATED ON PC–523 (COVER BOARD)
L1–L4	10mH RF CHOKE, M9263–ND
R1,R2	80ohm, CADDOCK
R3	4.7K, 1/2W
R4	1.8K, 1/2W
T1	20 TURNS, CENTER TAPPED, WOUND ON 5943003801 FERRITE TORROID

PULSAR

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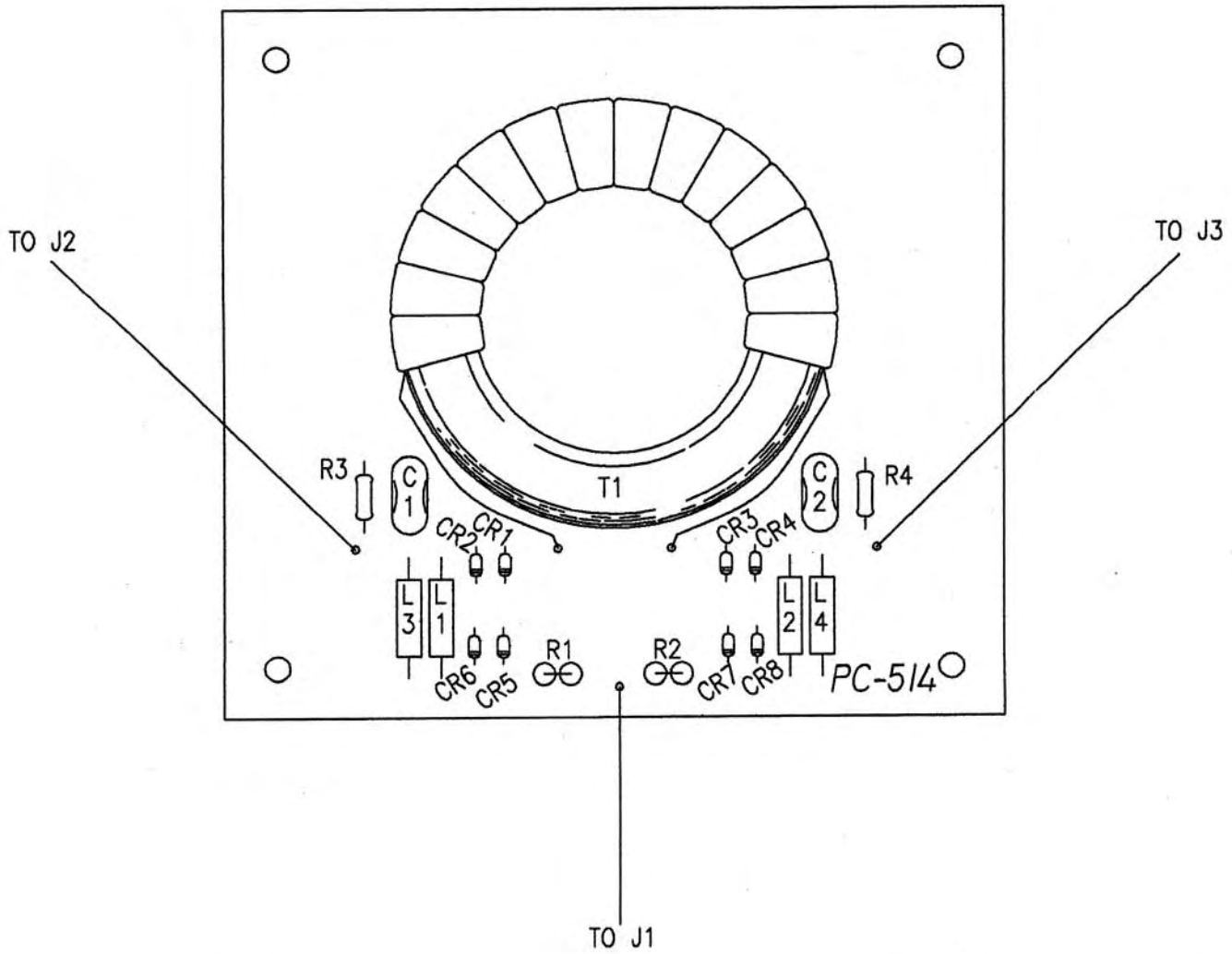
BROADCAST EQUIPMENT CO., INC.
1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184

REVISION DESCRIPTION:
CORRECTED J CALLOUT, 8/9/99

REVISION: A

TITLE: DIRECTIONAL COUPLER PCB (PC–514)

DESIGNED BY: NDT/TT | DATE: 07/14/99 | DWG. BY: CKB | DWG. No. AM–1902S
MODIFIED: 3/5/07 by John McCool | CAD No. AM–1903S



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PULSAR

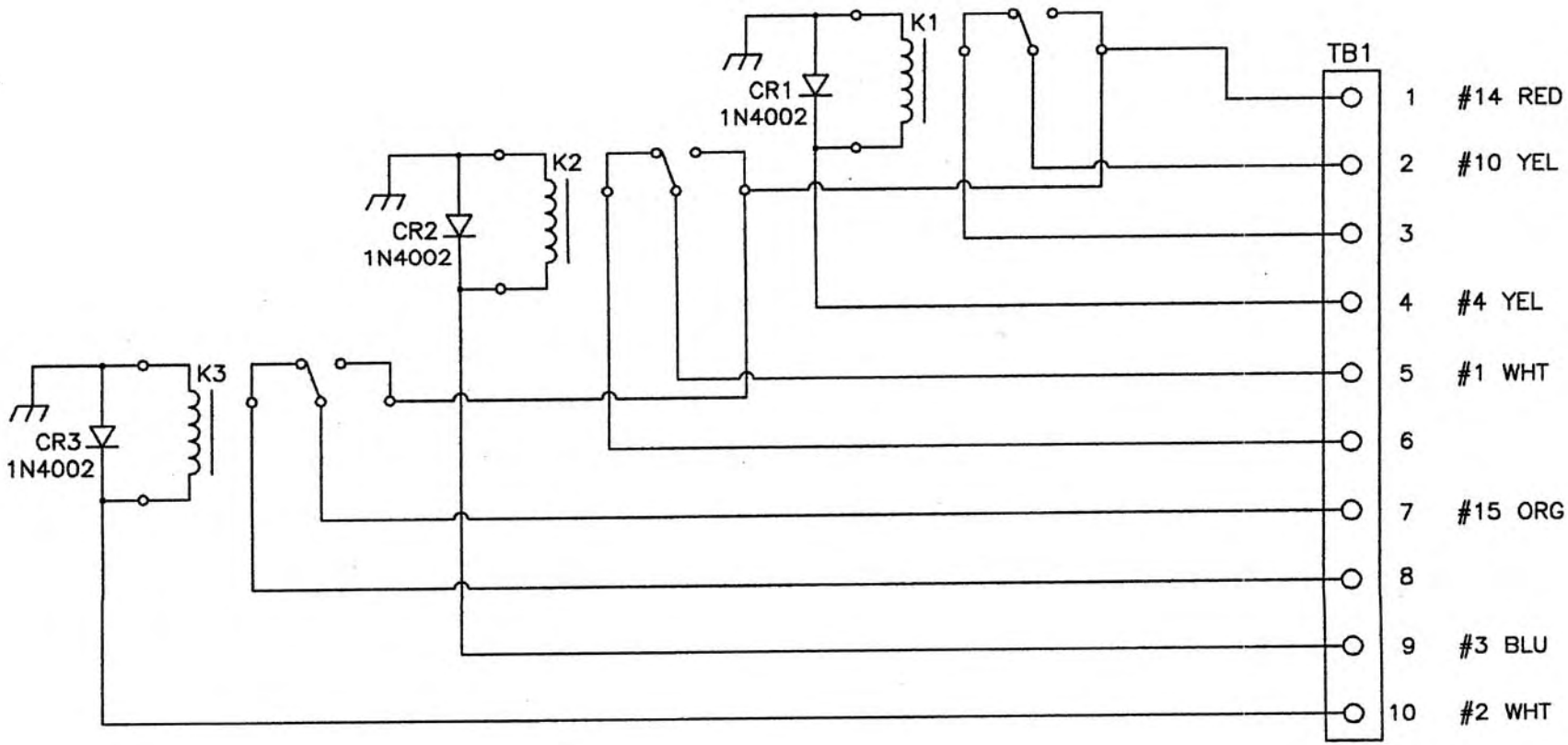
TITLE: DIRECTIONAL COUPLER BD COMPONENT LAYOUT (PC-514)

DESIGNED BY: NDT	DATE: 6/21/99	DWG. BY: CRB	DWG. No. AM-1902C
MODIFIED: 3/5/07 by John McCool	CAD: AM-1902C		

PC- 514 DIRECTIONAL COUPLER

PARTS LIST

C1, C2	2000PF/500V DIP MICA	
CR1-CR8	1N4938	
J1-J3	RCA JACK, LOCATED ON PC-523 (COVER BOARD)	
L1-L4	10mH rf CHOKE, M9263-ND	
R1, R2	80ohm, CADDOCK	
R3	4.7K, 1/2W	
R4	1.8K, 1/2W	
T1	20 TURNS, CENTER TAPPED, WOUND ON FERRITE TORROID	5943003801



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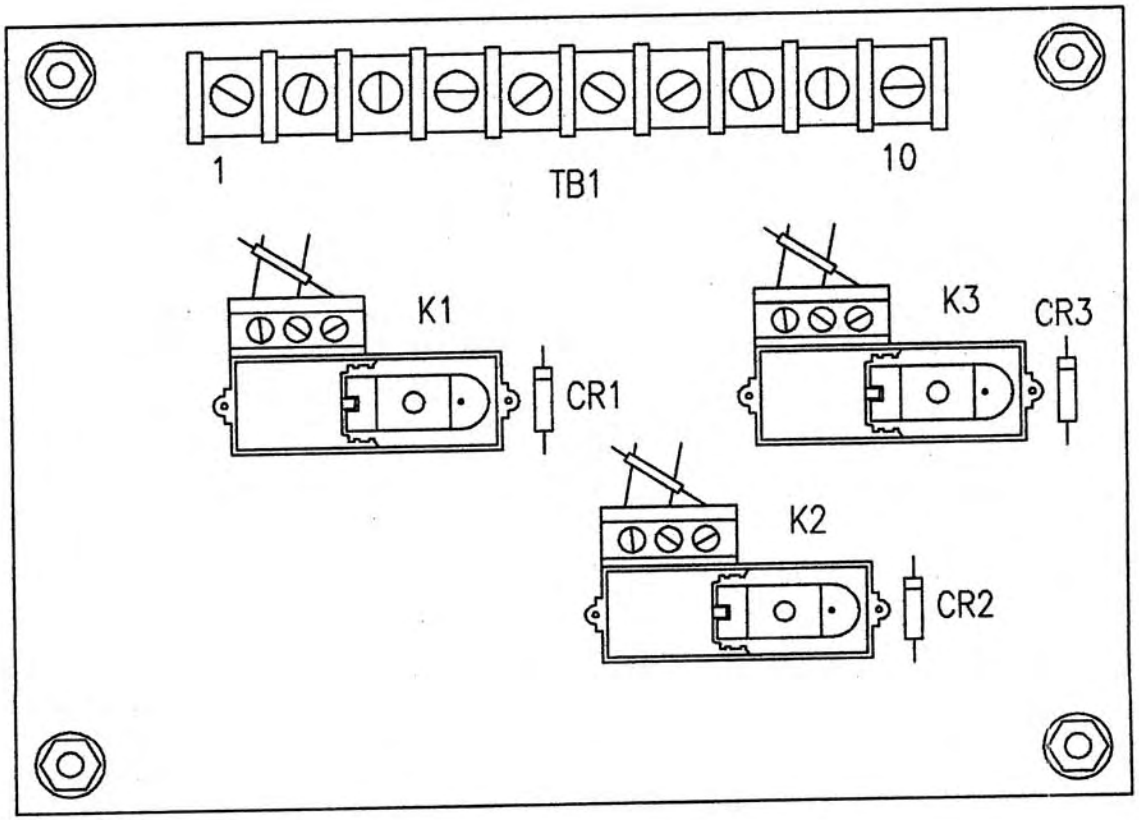
BROADCAST EQUIPMENT CO., INC.
1306 RIVER ST., P.O. BOX 601, VALATIE, NY. 12184

NOTES:
N.T.S.

TITLE: PC–516C (PULSAR AUX RELAY BD.) SCHEMATIC

DWG. BY: John McCool		MODIFIED:	DWG. No.
DATE: 1/20/09	REV: –	–	S–165



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1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184

NOTES:
N.T.S.

TITLE: PC–516C (PULSAR AUX RELAY BD.) COMPONENT LAYOUT

DWG. BY: John McCool		MODIFIED:	DWG. No.
DATE: 1/20/09	REV: –	–	CL–252

PC- 516A RF RELAY BOARD

PARTS LIST

CR1-CR3	1N4002	
K1- K3	HENGSTLER	H00-550-1569
TB1	10 POSITION, 20A, PC MOUNT	

PULSAR 1000

PARTS LIST: ACTIVE DEVICES AND FUSES

TRANSISTORS

PART DESC.	NUMBER PER TRANSMITTER	PC BOARD/DESIGNATION
2N2222A	(6)	501 - Q1,Q3,Q6,Q7 506 - Q2 509 - Q4
2N2914	(1)	501 - Q2
2N2219A	(2)	501 - Q4 506 - Q3
2N2905	(1)	501 - Q5
2N2907A	(5)	501 - Q8 509 - Q3 511 - Q1 (1 X 3 MODULES)
IRF540	(32)	502 - Q1,Q2 510 - Q1-Q8 (8 X 3 MODULES) 512 - Q1,Q2 (2 X 3 MODULES)
2N3497	(3)	511 - Q4 (1 X 3 MODULES)
2N5116	(1)	506 - Q1
2N4124	(11)	508 - Q1,Q2,Q3,Q4,Q5 509 - Q1 517 - Q1,Q2,Q4,Q5,Q6
2N930	(1)	509 - Q2
IRFU9014	(2)	509 - Q5,Q6 TRANSISTORS
MCR264-8	(3)	510 - Q9 (SCR) (1 X 3 MODULES)
2N5415	(3)	511 - Q2 (1 X 3 MODULES)
2N2323	(3)	511 - Q3 (THYRISTOR) (1 X 3 MODULES)
2N2369	(3)	511 - Q5 (1 X 3 MODULES)
2N5306	(1)	517 - Q3
S0802DH	(4)	521 - SCR1,SCR2

INTEGRATED CIRCUITS

PARTS LIST

PART DESC.	NUMBER PER TRANSMITTER	PC BOARD/DESIGNATION
MC14106BCP	(2)	501 - U1,U4
MC14013BCP	(2)	501 - U2 506 - U5
MC14526BCP	(1)	501 - U3
ICL7667CPA	(3)	511 - U1 (1 X 3 MODULES)
TL084IN	(1)	506 - U1
LM3302N	(2)	506 - U2,U3
TL082MJG	(4)	506 - U4,U6,U7,U8
LM319N	(1)	506 - U9
RC4200AN	(1)	506 - U10
339 OP AMP	(3)	507 - U1 508 - U1,U2
2502-4	(1)	507 - U2
2502-1	(1)	507 - U3
MC14049	(1)	509 - U1
CD4081BE	(1)	517 - U1
CD4001BE	(2)	517 - U2,U5
MC14538BE	(1)	517 - U3
CD40174BCN	(1)	517 - U4
LF347N	(1)	520 - U1

FUSES

PARTS LIST

PART DESC.	NUMBER PER TRANSMITTER	PC BOARD/DESIGNATION
3 AMP	(1)	CONTROLLER +15V
1 AMP	(7)	CONTROLLER -15V POWER SUPPLY (FANS): PA1, PA2, PA3, EXC, COMB, CAB

TROUBLESHOOTING POWER AMPLIFIER

Power amplifier modules with defective mosfets usually have a fault (red LED lit up on front panel of the module). With the transmitter power OFF, pull out the defective module by:

1. Disconnect the RF output cable, RF input cable, Mod input cable, and the DB-25 connector from the back panel of the module to be pulled out.

2. Loosen the top and bottom screws at the front of the module.

3. Slide the module out to the front, and put it on the bench.

4. Take out the right hand side cover by taking out the 6-32 flat head screws.

5. Physically examine first the components inside. Focus particularly on the eight RF and two modulator mosfets, and look for obvious damage.

6. Make resistance measurements in the following table.

TROUBLESHOOTING TABLE

POSITIVE LEAD	NEGATIVE LEAD	NORMAL	ABNORMAL
6a. Ground	TB 3-1& TB 3-2 or TB 3-3 & TB 3-4	Open	Short
6b. TB 3-1& TB 3-2 or TB 3-3 & TB 3-4	Ground	Greater than 3K ohms	Less than 3K ohms
6c. Ground	Terminal Post	50K ohms or higher	Low Resistance/Short
6d. Terminal Post	Ground	50K ohms or higher	Low Resistance/Short

7. If the reading in line 6a./6b. is a short or lower than 1000 ohms respectively, disconnect the output transformer from TB3 and make the following test to isolate which side of the board has the defective mosfets (left side or the right side).

POSITIVE LEAD	NEGATIVE LEAD	NORMAL	ABNORMAL
7a. Ground	TB 3-1 & TB 3-2 (output 1)	Open	Shorted
7b. TB 3-1 & TB 3-2 (output 1)	Ground	3.0K or above	Shorted
7c. Ground	TB 3-3 & TB 3-4 (output 2)	Open	Shorted
7d. TB 3-3 & TB 3-4 (output 2)	Ground	3.0K or above	Shorted

8. In condition 7a./7b., if it is shorted (left of the PC Board), it is either or both, Q2 and Q4 that is defective (shorted Drain to source).

9. For abnormal condition in 7a./7b. (right side of the PC Board), it is either or both, Q6 and Q8 that is defective (shorted Drain to source).

10. From condition 8, take out the mounting screw from Q2, and lift the mosfet a little bit such that the Drain (body of mosfet) is not touching the heatsink, or just simply insert an insulator underneath the mosfet.

11. Make the same measurement as in 7a./7b. If the short still exists, Q4 is defective. If there is no more short, Q 2 is defective.

12. Measure resistance between TB3-1/2 and Q2 Drain (mosfet body). If the reading is a short then, Q2 is defective.

13. Repeat procedures 8 to 10 for abnormal condition in 7c./7d. (right side of PC Board) to test Q4 and Q6.

13a. With the output transformer disconnected as in step 7 and 8, measure the resistance between TB 3-1 and TB 3-2 and terminal post. Normally it should be open. If there is a short, or very low resistance, either Q1 or Q3 or both are defective.

13b. Measure the resistance between TB 3-3 and TB 3-4 and terminal post. Normally it is open. If there is a short or very low resistance, Q5 or Q7 or both are defective.

NOTE: If readings on procedures 7 to 13 are normal, it doesn't guarantee yet that the mosfets are good. All mosfets input side should be tested.

14. Unsolder the input transformer wires that go into each gate of the eight RF mosfets, Q1 - Q8.

15. Measure the gate to source resistance of each of the eight mosfets. Normally, resistance reading is open or infinite. If there is a low resistance reading or short, that particular mosfet is defective and should be replaced.

16. Replace the defective RF mosfets, and also replace the transorbs (P6KE10CA) that is mounted across the defective mosfet removed in step 14.

17. From the abnormal readings made on 6c./6d. (a short or a low resistance to ground), proceed as follows:

17a.) Disconnect the two output wires from the modulator, to isolate the trouble.

17b.) Measure resistance again between the terminal post to ground (as in table 6c./6d.). If the short still exists, the crowbar Q9 (MCR25D or MCR264-8)) is shorted. Verify, and replace Q9. If there are no more short between the terminal post and ground when the modulator wires are disconnected, it is the modulator mosfet, or mosfets, that is causing the short.

17c.) Measure the resistance between the modulator output (Q1 & Q2 Drain) and ground with positive lead to ground and negative lead on the drain This should be open. (Initially, the reading might be around 20K and goes higher as capacitor discharges down.)

17d.) If there is a short as shown on the ohmmeter, there might be a punctured insulating pad.

17e.) Jumper or short out with jumper wire across the gate and source of each of the modulator mosfets (momentarily) to discharge any voltage across the gate and source (the presence of a voltage or charge turns on the mosfet or shorts the source and drain).

17f.) Measure the resistance between the gate and the source of Q1 and Q2. Normally it is open in both directions. Abnormal - it is shorted. If it is shorted, replace mosfet. If it is open, continue.

17g.) Measure resistance between source and drain of Q1 and Q2. Normally - it should be open in both directions.

18. Replace the defective modulator mosfet.

NOTE: Even if only one modulator mosfet is defective, replace both Q1 and Q2. Occasionally, when Q1 and Q2 go, U1 of PC511 (ICL7667) also goes, and sometimes Q9 (MCR25D or MCR264-8) goes. Replace U1 and Q9. In very rare occasions when modulator mosfets go, Q4 and Q5 also go (see component layout PC511).

19. In replacing modulator mosfets, refer to page 115.

20. After the defective mosfets or other defective parts have been replaced, clean up in between the mosfet leads, because there might be small amount of solder of metal across the leads of the mosfets.

21. Make sure that the output transformer, input wires to the RF, and everything else has been restored. Perform a quick check as outlined from 6.

22. Re-install the hardwares to the box and install it to the transmitter.

23. .When testing the repaired amplifier, you should set to variable output and it should be at minimum. Slowly raise the power as you continue on.

REPLACING RF MOSFETS ON PC 512

1. In taking out the defective mosfets in the RF PC 512, unsolder first the transformer input wires at the gate and source of the mosfets to be replaced. Take out the transorbs (P6KE10CA), then take out the defective mosfets.

2. Clean up the mounting pads on the PC Board with solder wick, and also clean up the part of the heatsink where the defective mosfet has been previously mounted.

3. Make sure that there is adequate thermal grease between the device body and the heatsink for RF Q2, Q4, Q6 or Q8.

Align properly the insulating pad hole and the heatsink mounting hole.

4. For Q2, Q4, Q6 or Q8, they are mounted directly to heatsink without insulating pad, but for Q1, Q3, Q5 or Q7, it has an insulating pad .

NOTE: If a mosfet is replaced, replace also the transorb (P6KE10CA) associated with that mosfet.

REPLACING MODULATOR MOSFET

1. Remove the defective modulator mosfets by removing the mounting screws on Q1, Q2. Unsolder the Q1 and Q2.

2. Clean up old solder on the board surface, remove the old insulating pad, then wipe clean the heatsink.

3. Install the new mosfets with new insulating pads. Align it with the PC Board.

4. Solder the leads in place.

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BY:JW	USEON:PULSAR 1000
DATE:09-24-02	SHEET 1 OF 3

BASE (POWER SUPPLY) WIRE RUN SHEET

RE #	AWG	COLOR	FROM	REMARKS	TO
1	10	GREEN	TB1-1		MOV'S
2	10	GREEN	TB1-1		RAIL GROUND
3	10	GREEN	BLEEDER RESISTOR		RAIL GROUND
4	10	GREEN	JUNCTION OF 2-.05Ω RES.		RAIL GROUND
5	10		N/U		N/U
6	10	RED	TB1-2	A PHASE	TB2-1
7	10	RED	TB1-2	A PHASE	TB4-14
8	10	RED	TB1-2	A PHASE	MOV
9	10	BLACK	TB1-3	B PHASE	TB2-2
10	10	BLACK	TB1-3	B PHASE	TB4-13
11	10	BLACK	TB1-3	B PHASE	MOV
12	10	RED	TB2-3		K4 CONTACTOR LINE SIDE IN
13	10	BLACK	TB2-4		K4 CONTACTOR LINE SIDE IN
14	10	RED	K4 CONTACTOR LOAD SIDE OUT		POWER SUPPLY #1
15	10	BLACK	K4 CONTACTOR LOAD SIDE OUT		POWER SUPPLY #2
	10				
	10	WHITE	NEG.OUTPUT OF POWER SUPPL		C1-NEGATIVE
18	10		N/U		
19	10	RED	POS. OUTPUT OF POWER SU PP		JUNCTION OF 2-.05Ω RES.
20-21			N/U		
22	10	WHITE	NEG. OUTPUT OF CAPACITOR		TB2-5&6
23	10	BLUE	NEG.OUTPUT OF CAPACITOR		TB2-7&8
24-28			N/U		
29	10	WHITE	NEG. OUTPUT OF CAPACITOR		BLEEDER RESISTOR

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BY:JW	USEON:PULSAR 1000
DATE:09-24-02	SHEET 2 OF 3

CABINET AC & DC WIRE RUN SHEET

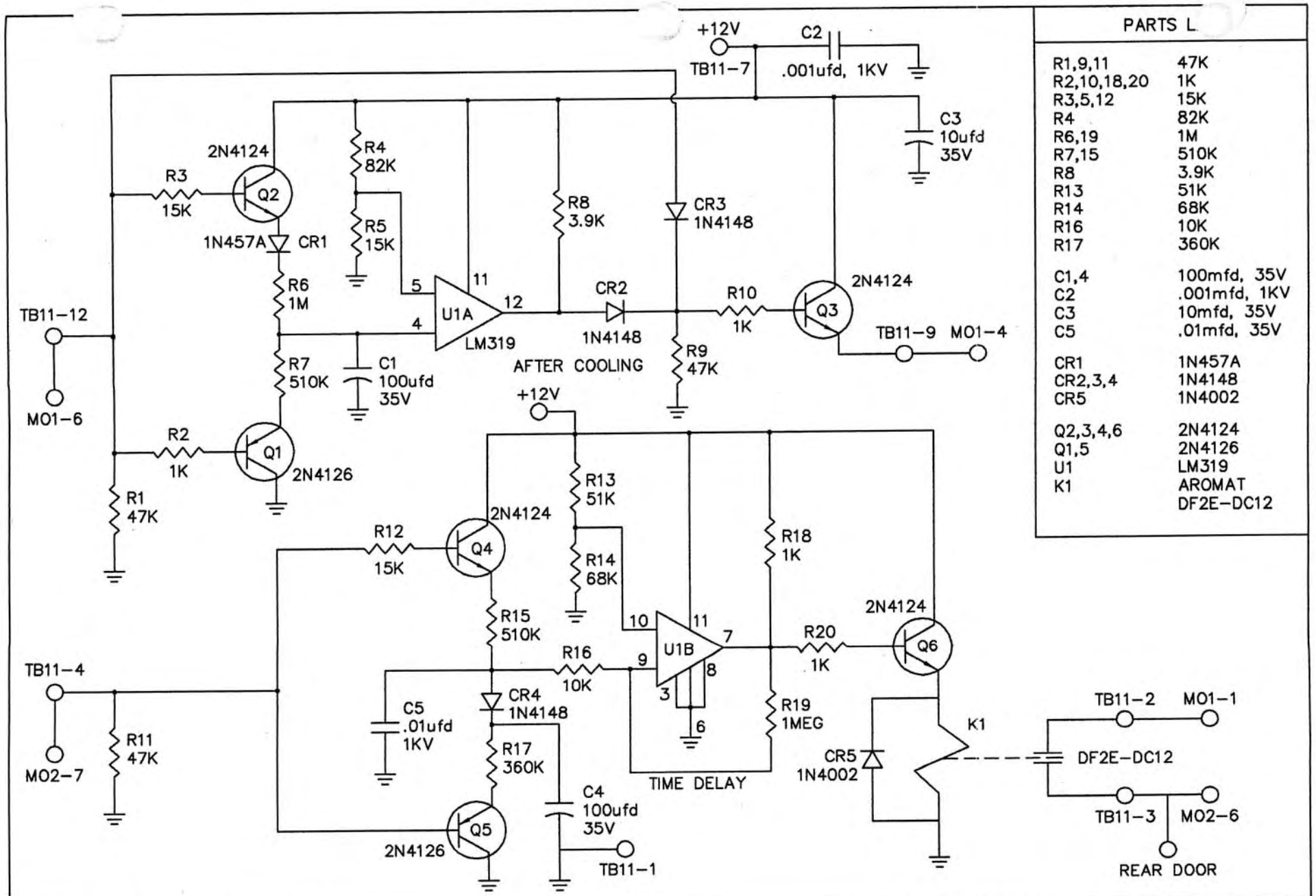
RE #	AWG	COLOR	FROM	REMARKS	TO
30	16	BROWN	TB3-1	PA1 FAN	TB7-1
31	16	RED	TB3-2	PA2 FAN	TB7-3
32	16	ORANGE	TB3-3	PA3 FAN	TB7-5
33	16	WHITE	TB3-4	EXC/CONTRL	TB12-1
34	16	GRAY	TB3-5	COMBINER	TB13-1
35	16	BLUE	TB3-6	RECTIFIER	TB4-11
36	16	BLUE	TB3-6	BACK DOOR	MOLEX BACK DOOR
37	16	YELLOW	TB3-7	FAN ON	TB4-10
38	16	ORANGE	TB3-8	CONTRL ON	TB4-12
39	16	BLACK	TB1-3	B PHASE	TB7-2
40	16	BLACK	TB1-3	B PHASE	TB7-4,6
41	16	BLACK	TB7-4	B PHASE	MOLEX BACK DOOR
42	16	BLACK	TB7-2	COMBINER	TB13-3
43	16	BLACK	TB7-2	CONTL FAN	TB12-3
	16	RED	TB8-1 (JUMPER 1,2,3)	+15 VOLTS	D-SUB CONTROLLER PIN 13
	20	PURPLE	TB8-4	PA VOLTS	CONTROL D-SUB PIN 8
46	10	WHITE	TB2-9	IPA VOLT	TB11-4
47	10	WHITE	TB2-10	PA1 VOLT	TB9-1,2
48	10	GREEN	TB9-3,4		GROUND RAIL
49	10	RED	TB2-11	PA2 VOLTS	TB9-5,6
50	10	GREEN	TB9-7,8		GROUND RAIL
51	10	BLUE	TB2-12	PA3 VOLTS	TB9-9,10
52	10	GREEN	TB9-11,12		GROUND RAIL
53	16	RED	TB4-2	+15V IN	TB11-1
54	16	BLUE	TB4-3	-15V IN	TB11-2
55	20	BLUE	TB4-4	PLATE ON	D-SUB CONTROLLER PIN 4
56	20	YELLOW	TB4-5	FAN ON	D-SUB CONTROLLER PIN 3
57	20	WHT/PUR	TB4-6	THERMO	D-SUB CONTROLLER PIN 1
58	20	WHT/GRY	TB4-7		C.B.PANEL INTERLOCK
59	20	WHT/YEL	TB4-8	CURRENT	D-SUB CONTROLLER PIN 6
60	14	GREEN	TB4-9		GROUND RAIL
	20	GRAY	C.B.PANEL INTERLOCK		REAR DOOR INTERLOCK
	20	WHT/ORN	REAR DOOR INTERLOCK		D-SUB CONTROLLER PIN 2

Energy-Onix

BY:JW	USEON:PULSAR 1000
DATE:09-24-02	SHEET 3 OF 3

CABINET AC & DC WIRE RUN SHEET

IE #	AWG	COLOR	FROM	REMARKS	TO
63	20	BROWN	COMBINER	RF CURRENT	D-SUB CONTROLLER #5
64					
65	20	RED	CONTROLLER DB-25 #23	VOLTAGE	COMBINER DB 25 #13
66	20	YELLOW	CONTROLLER DB 25 #7	CURRENT	COMBINER DB 25 #11
67	20	RED	CONTROLLER DB 25 #12	INC	COMBINER DB 25 #7
68	20	YELLOW	CONTROLLER DB 25 #11	REFLECTED	COMBINER DB25 #8
69	20	GREEN	CONTROLLER DB 25 #14	GROUND	TO CABINET RAIL
70	20	GREEN	CONTROLLER DB 25 #15	GROUND	TO CABINET RAIL
71	20	WHITE	COMBINER DB 25-1	K1 BYPASS	SHELF TB8-7
72	20	RED	COMBINER DB 25-3	K2 BY PASS	SHELF TB8-8
73	20	BLUE	COMBINER DB25- 25	K3 BY PASS	SHELF TB8-9
74	20	WHT/ORG	COMBINER DB 25- 14	LEVEL 1	CONTROLLER DB 15
75	20	WHT/VIO	COMBINER DB 25-15	LEVEL 2	CONTROLLER DB 16
76	20	WHT/BLK	COMBINER DB 25-16	LEVEL 3	CONTROLLER DB 17
77	20	WHT/YEL	COMBINER DB 25-17	LEVEL 4	CONTROLLER DB 18
	20	BLACK	COMBINER DB 25-19	-15 VOLTS	CONTROLLER DB 14
	20	RED	COMBINER DB 25-21	+15 VOLTS	SHELF TB 8 #2
80-83			N/U		
84	16	WHITE	-72 VOLTS C1 NEG	METER -72	TB 12-3
85	20	RED	PS ±15 V #2 V1	+15V -#2	CONTROL D SUB # 19
86	20	BLACK	PS ±15V # 2 G2	-15V #2	CONTROL D SUB #20
87	20	GREEN	PS ±15 # 2 GI	GROUND	CONTROLLER D SUB #21
88	20	GREEN	PS ± 15V #2 VZ	GROUND	PS ±15V GROUND
89	20	BLUE	PS ±15 #2 N	BØ	PS ± 15V #1 N
90	20	ORANGE	PS±15V #2 L	AØ	PS ±15V #1 L
91	16	GREEN	PS± 15V #1 V2	GROUND	RAIL
92	20	GREEN	PS±15V #1 G1	GROUND	PS ± 15V#1 GROUND
93	20	RED	CROWBAR #2 TB1	+15V	PS ±15 V #2 V1
94	20	GREEN	CROWBAR #2 TB 2	GROUND	PS ±15V#2 G1/V2
95	20	BLACK	CROWBAR #2 TB 3	-15V	PA ±15V #2 G2
96			N/U		N/U
97	14	GREEN	TB11-3		RAIL GROUND



PARTS L	
R1,9,11	47K
R2,10,18,20	1K
R3,5,12	15K
R4	82K
R6,19	1M
R7,15	510K
R8	3.9K
R13	51K
R14	68K
R16	10K
R17	360K
C1,4	100mfd, 35V
C2	.001mfd, 1KV
C3	10mfd, 35V
C5	.01mfd, 35V
CR1	1N457A
CR2,3,4	1N4148
CR5	1N4002
Q2,3,4,6	2N4124
Q1,5	2N4126
U1	LM319
K1	AROMAT DF2E-DC12

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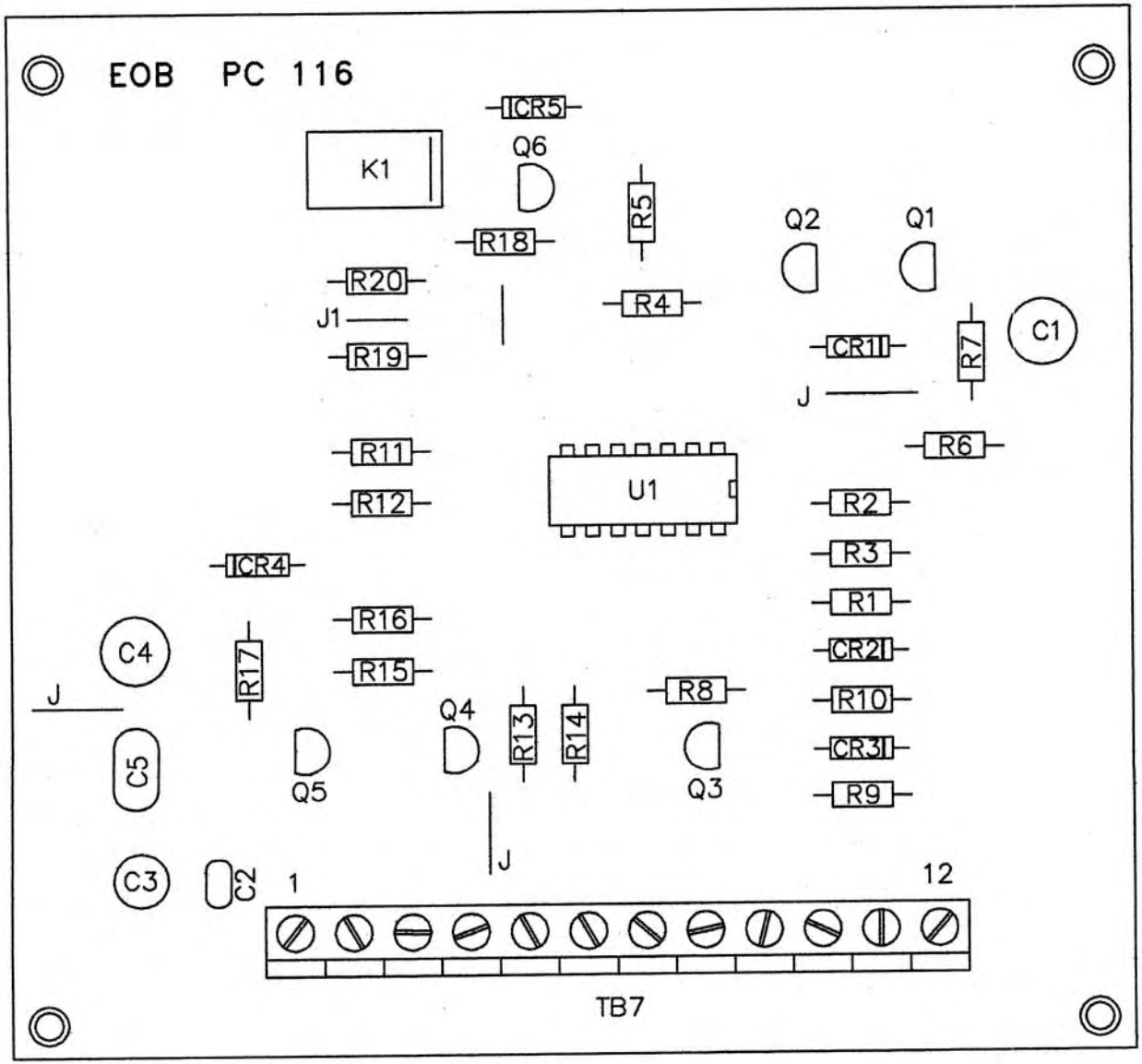
BROADCAST EQUIPMENT CO., INC.
1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184

REVISIONS: 9/26/97
THIS DRAWING REPLACES S-303A AS OF 12-2-01

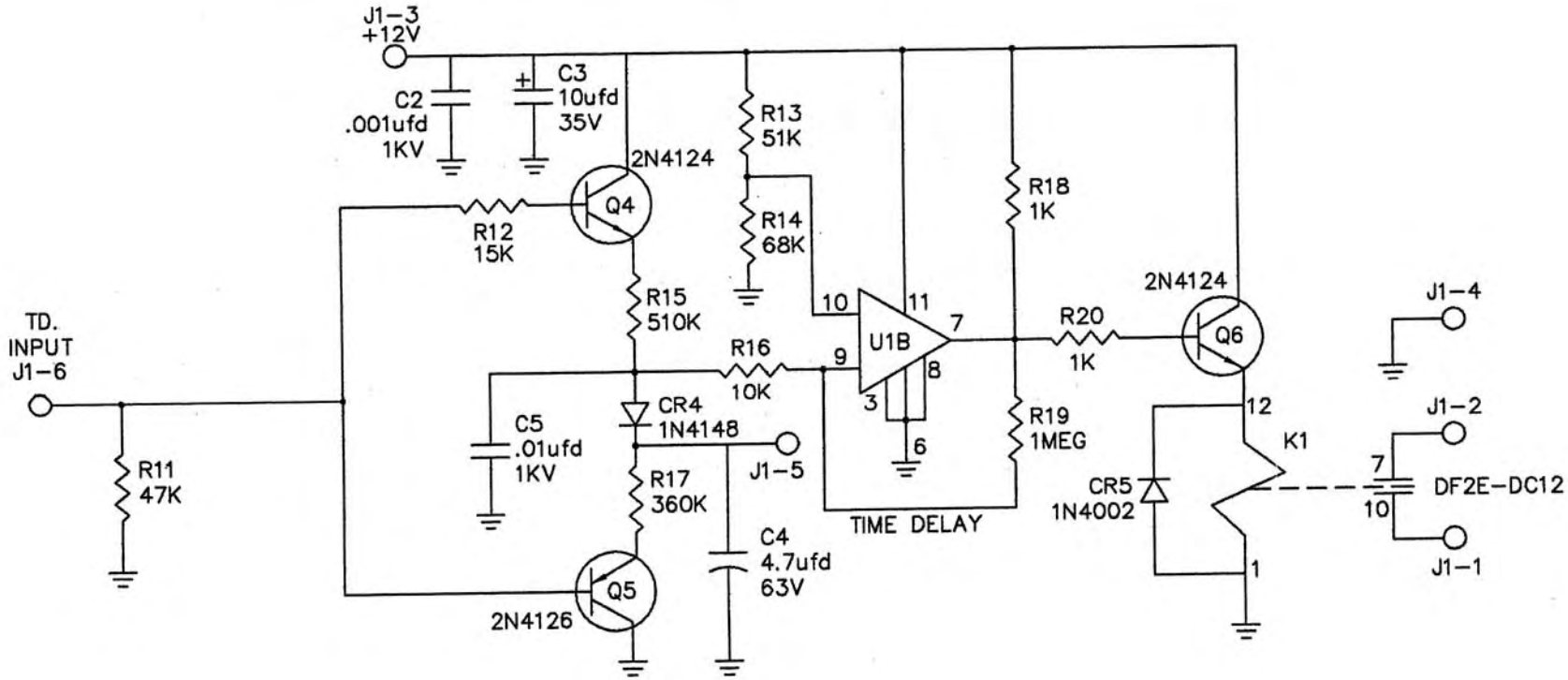
TITLE: DUAL TIME DELAY BD SCHEMATIC (PC-116)

DESIGNED BY: JW	DATE: 12-2-01	DWG. BY: DH	DWG. No. S-303B
CHK'ED:	CAD No. S-303B		



NTS

Energy–Onix BROADCAST EQUIPMENT CO., INC. 1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184	REVISION DESCRIPTION: ADD J1, R5, CHG R15 TO R18, 08/23/00	REVISION: A	TITLE: 'ECO' DUAL TIME DELAY BD. COMPONENT LAYOUT (PC–116) DESIGNED BY: CRB · DATE: 9/14/97 · DWG. BY: CRB · DWG. No. CL–65 CHK'ED: · CAD: CL–65



PARTS LIST

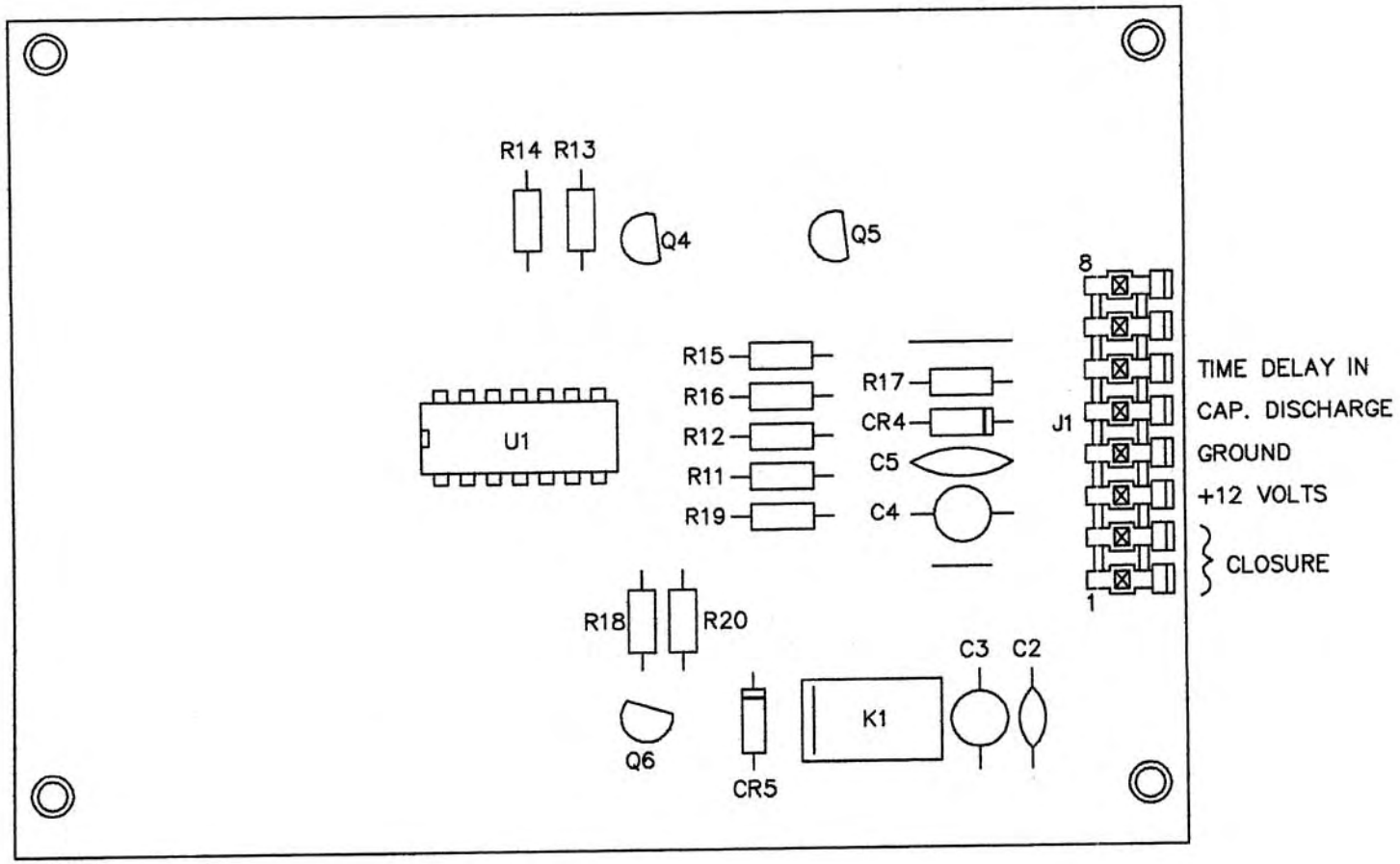
R11.....47K	R18.....1K	CR4.....IN4148
R12.....15K	R19.....1M	CR5.....IN4002
R13.....51K	R20.....1K	Q4.....2N4124
R14.....68K	C2.....0.001MFD, 1KV	Q5.....2N4126
R15.....510K	C3.....10MFD, 35V	U1.....LM319
R16.....10K	C4.....4.7UFD, 63V	K1.....AROMAT DF2E-DC12
R17.....360K	C5.....0.01MFD, 35V	

Energy-Onix
BROADCAST EQUIPMENT CO., INC.
1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184

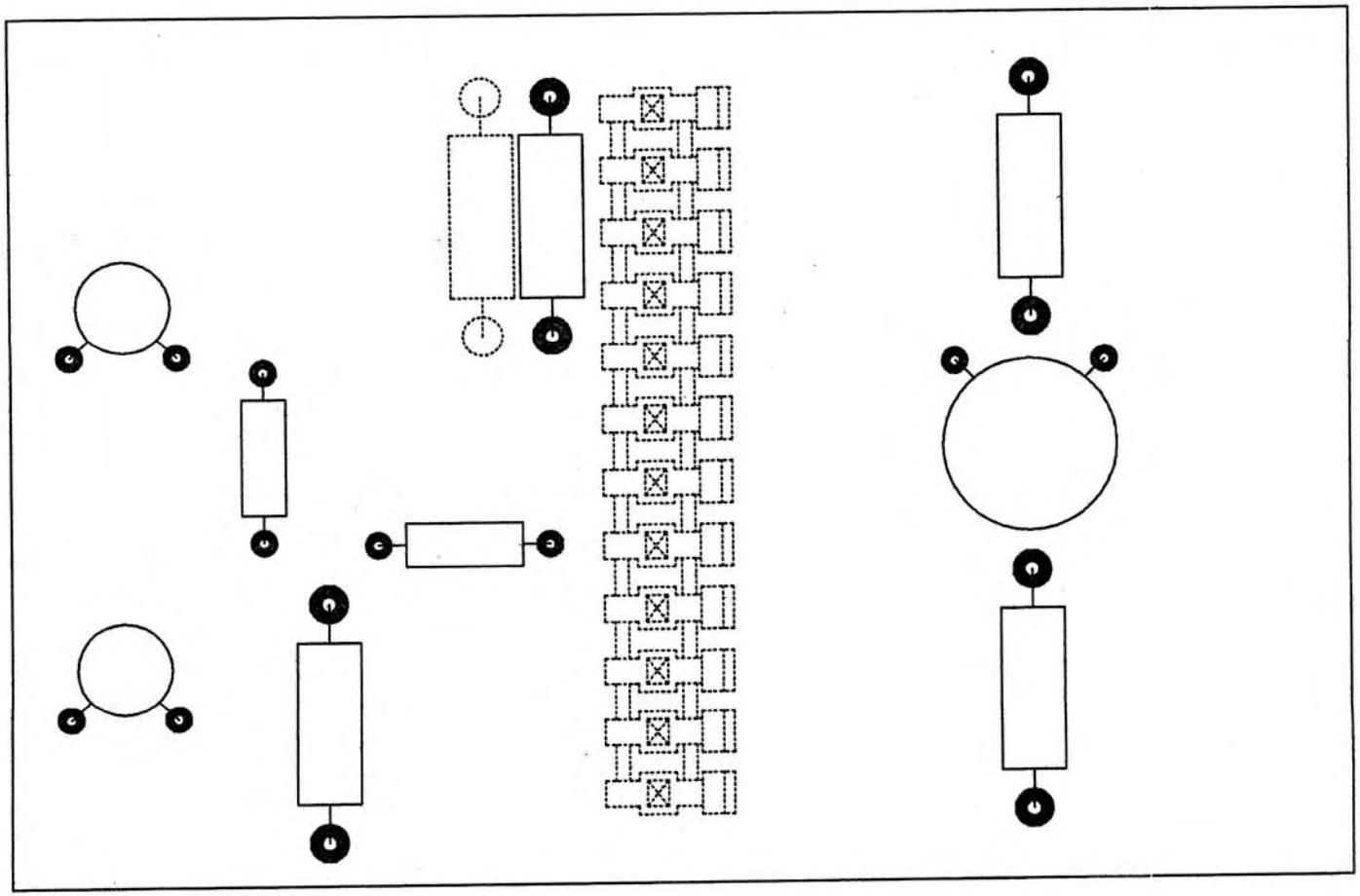
REVISIONS:

TITLE: TIME DELAY BD SCHEMATIC (PC-602)

DESIGNED BY: JW	DATE: 12/12/97	DWG. BY: CKB	DWG. No. S-817
MODIFIED: 3/5/07 by John McCool	CAD No. S-817		



Energy–Onix BROADCAST EQUIPMENT CO., INC. 1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184	REVISION DESCRIPTION:	REVISION:	TITLE: TIME DELAY BD. COMPONENT LAYOUT (PC–602) DESIGNED BY: NT · DATE: 11-21-02 · DWG. BY: DH · DWG. No. CL–759 MODIFIED: 3/5/07 by John McCool · CAD: CL–759



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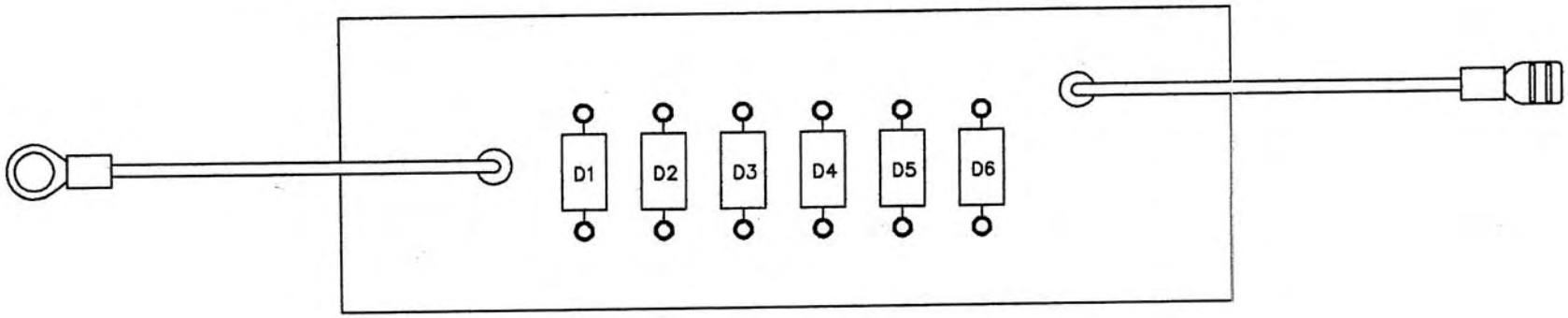
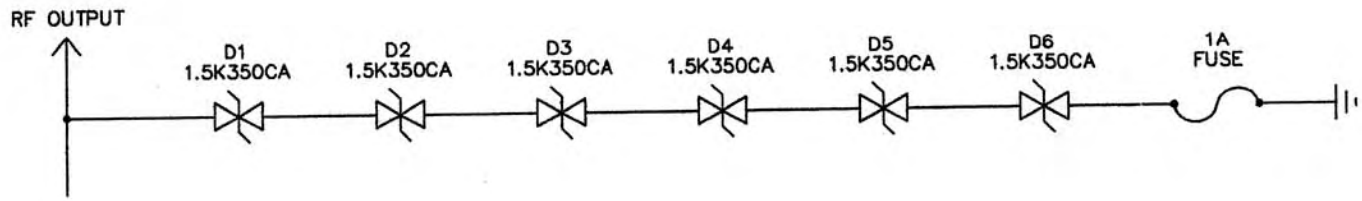
BROADCAST EQUIPMENT CO., INC.

1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184

TITLE: COMPONENT LAYOUT
PC–533

DESIGNED BY:	DATE: 3/7/07	DWG. BY: John McCool	DWG. No. PC–533
CHK'ED:	CAD No. PC–533		





N.T.S.

Energy–Onix
BROADCAST EQUIPMENT CO., INC.
1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184

PULSAR

TITLE: Component Layout PC–532A				
DESIGNED BY: PI	DATE: 3/12/07	DWG. BY: John McCool	DWG. No. PC–532A	
CHK'ED:	CAD: PC–532A			

PULSAR 1000 CABINET WIRE LIST

HIGH VOLTAGE

WIRE #	AWG	COLOR	FROM		TO
1	6	GREEN TAPE	TB1-1		GROUND RAIL
2	10	RED	TB1-2	A PHASE	TB2-1
3	10	BLACK	TB1-3	B PHASE	TB2-2
4	10	RED	TB2-3		H.V. CONTACTOR INPUT
5	10	BLACK	TB2-4		H.V. CONTACTOR INPUT
6	10	RED	H.V. CONTACTOR OUTPUT		PLATE TX. +10
7	10	BLACK	H.V. CONTACTOR OUTPUT		PLATE TX. 240
8	10	RED	TB1-2		MOV 131
9	10	BLACK	TB1-3		MOV 131
10	10	GREEN	131 MOVS		GROUND RAIL
11	10	BLUE	TX. SECONDARY		AC INPUT OF RECTIFIER
12	10	BLUE	TX. SECONDARY		AC INPUT OF RECTIFIER
13	10	WHITE	NEGITIVE OF RECTIFIER		CHOKE INPUT
14	10	RED	POSITIVE OF RECTIFIER		JUNCTION OF .05 OHM RES.
15	10	GREEN	JUNCTION OF .05 OHM RES.		RAIL GROUND
16	10	BLACK	OUTPUT OF CHOKE		500 OHM BLEEDER RES.
17	10	GREEN	500 OHM BLEEDER RES.		RAIL GROUND
18	10	BLACK	OUTPUT OF CHOKE		NEGITIVE OF CAPACITOR C1
19	10	GREEN	POSITIVE OF CAPACITOR C1		RAIL GROUND
20	10	BLACK	OUTPUT OF CHOKE		TB2-5
21	10	BLACK	OUTPUT OF CHOKE		TB2-7
22	10	BLACK	OUTPUT OF CHOKE		C2 RESONATING CAP
23	10	WHITE	INPUT OF CHOKE		C2 RESONATING CAP

PULSAR 1000 CABINET WIRE LIST

HIGH VOLTAGE

WIRE #	AWG	COLOR	FROM	TO
24	10	RED	H.V. CONTACTOR INPUT	L.V. CONTACTOR INPUT
25	10	BLACK	H.V. CONTACTOR INPUT	L.V. CONTACTOR INPUT
26	10	RED	H.V. CONTACTOR OUTPUT	5 OHM,100W RESISTOR
27	10	BLACK	H.V. CONTACTOR OUTPUT	5 OHM,100W RESISTOR
28	10	RED	5 OHM,100W RESISTOR	L.V. CONTACTOR OUTPUT
29	10	BLACK	5 OHM,100W RESISTOR	L.V. CONTACTOR OUTPUT

PULSAR 1000 CABINET WIRE LIST

LOW VOLTAGE

WIRE	AWG	COLOR	FROM	REMARKS	TO
30	16	BROWN	TB3-1	PA1 FAN	TB7-1
31	16	RED	TB3-2	PA2 FAN	TB7-3
32	16	ORANGE	TB3-3	PA3 FAN	TB7-5
33	16	WHITE	TB3-4	EXC/CONT	CONTR-TB3-1
34	16	GRAY	TB3-5	COMBINER	COMBINER D-SUB PIN 5
35	16	BLUE	TB3-6	RECT. FAN	TB4-11
36	16	BLUE	TB3-6	DOOR FAN	REAR DOOR MOLEX
37	16	YELLOW	TB3-7	ON FANS	TB4-10
38	16	ORANGE	TB3-8	CONTROLLER	TB4-12
39	16	BLACK	TB1-3	B PH	TB7-2
40	16	BLACK	TB1-3	B PH	TB7-4,6
41	16	BLACK	TB7-4	B PH	REAR DOOR MOLEX
42	16	BLACK	TB7-2	B PH	COMBINER D-SUB PIN23
43	16	BLACK	TB7-2	B PH	CONTR-TB3-2
44	16	RED	CONTROL D-SUB PIN 13		TB8-1,2,3
45	20	PURPLE	CONTROL D-SUB PIN 8	PA VOLTS	TB8-4,5,6
46	10	WHITE	TB2-9	IPA VOLT	CONTR-TB2-4
47	10	WHITE	TB2-10	PA1 VOLT	TB9-1,2
48	10	GREEN	TB9-3,4		RAIL GROUND
49	10	RED	TB2-11	PA2 VOLT	TB9-5,6
50	10	GREEN	TB9-7,8		RAIL GROUND
51	10	BLUE	TB2-12	PA3 VOLT	TB9-9,10
52	10	GREEN	TB9-11,12		RAIL GROUND

8-Jan-08

PULSAR 1000 CABINET WIRE LIST

LOW VOLTAGE

WIRE #	AWG	COLOR	FROM	REMARKS	TO
53	16	RED	TB6-7	POS. 15V	CONTR-TB2-1
54	16	BLUE	TB6-4	NEG. 15V	CONTR-TB2-2
55	20	BLUE	CONTROL D-SUB PIN 4	PLATE ON	TB4-3
56	20	YELLOW	CONTROL D-SUB PIN 3	FAN ON	TB4-4
57	20	WHT/PUR	CONTROL D-SUB PIN 1		TB4-6
58	20	WHT/GRY	TB4-8		C.B. INTERLOCK
59	20	WHT/YEL	CONTROL D-SUB PIN 6	CURRENT	TB4-8
60	14	GREEN	TB4-9		RAIL GROUND
61	20	GRAY	C.B INTERLOCK	INTERLOCK	REAR DOOR
62	20	WHT/ORN	REAR DOOR INTERLOCK		CONTROL D-SUB PIN 2
63	20	BROWN	COMBINER D-SUB PIN	RF CURRENT	CONTROL D-SUB PIN 5
64					
65	20	RED	CONTROL D-SUB PIN 23	VOLTAGE	COMBINER D-SUB PIN 13
66	20	YELLOW	CONTROL D-SUB PIN 7	CURRENT	COMBINER D-SUB PIN 11
67	20	RED	CONTROL D-SUB PIN 12	INC	COMBINER D-SUB PIN 7
68	20	YELLOW	CONTROL D-SUB PIN 11	REFL	COMBINER D-SUB PIN 8
69	20	GREEN	CONTROL D-SUB PIN 14	GROUND	RAIL GROUND
70	20	GREEN	CONTROL D-SUB PIN 15	GROUND	RAIL GROUND
71	20	WHITE	COMBINER D-SUB PIN 1	K1 BY-PASS	TB8-7
72	20	RED	COMBINER D-SUB PIN 3	K2 BY-PASS	TB8-8
73	20	BLUE	COMBINER D-SUB PIN 25	K3 BY-PASS	TB8-9
74	20	WHT/ORG	COMBINER D-SUB PIN 14	LEVEL 1	CONTROL D-SUB PIN 15
75	20	WHT/PUR	COMBINER D-SUB PIN 15	LEVEL 2	CONTROL D-SUB PIN 16

PULSAR 1000 CABINET WIRE LIST

LOW VOLTAGE

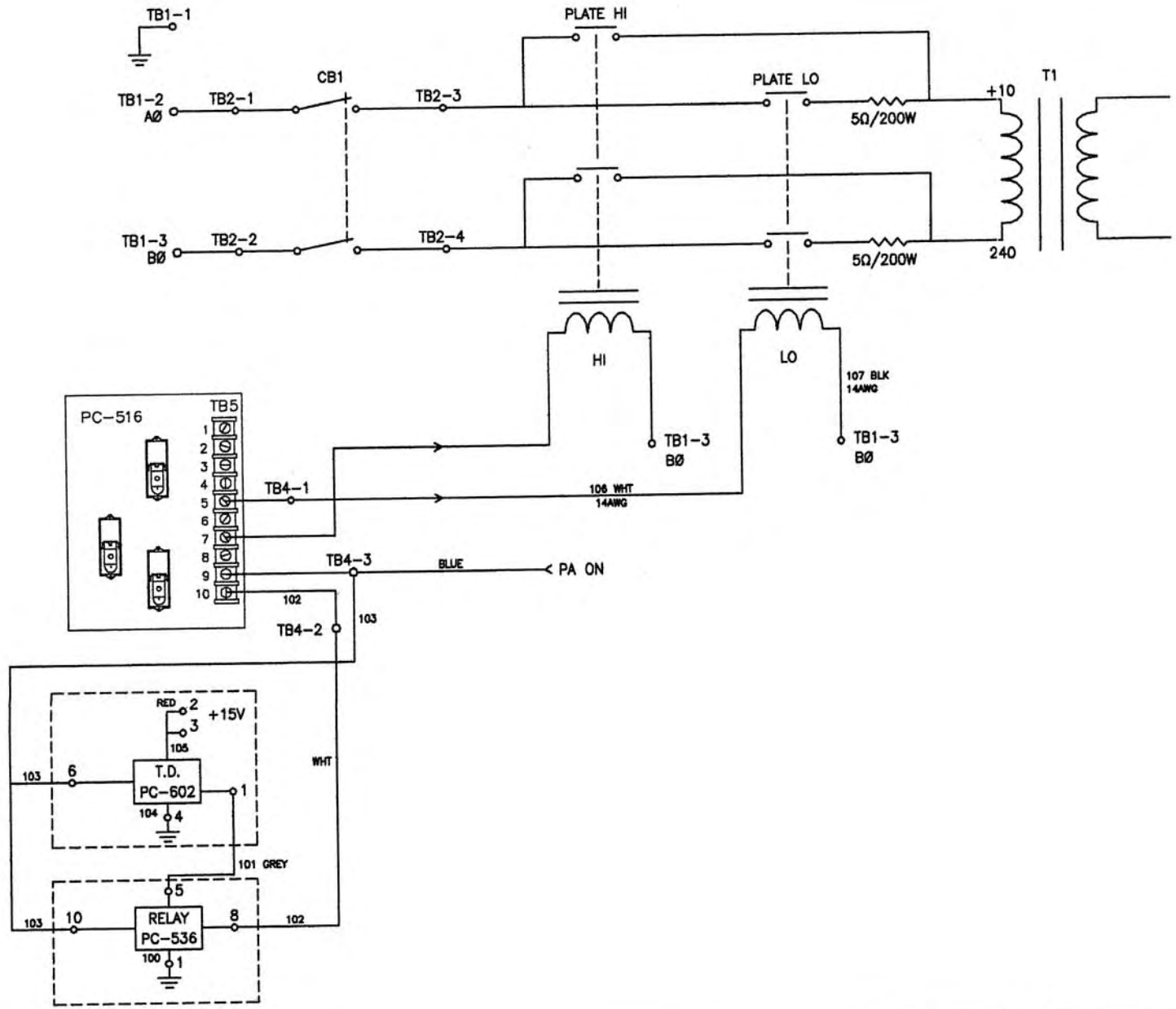
WIRE #	AWG	COLOR	FROM	REMARKS	TO
76	20	WHT/BLK	COMBINER D-SUB PIN 16	LEVEL 3	CONTROL D-SUB PIN 17
77	20	WHT/YEL	COMBINER D-SUB PIN 17	LEVEL 4	CONTROL D-SUB PIN 18
78	20	BLACK	COMBINER D-SUB PIN 19	NEG. 15V	CONTROL D-SUB PIN 14
79	20	RED	COMBINER D-SUB PIN 21	POS.15V	TB8-2
80-83		**N/U**		**N/U**	
84	16	WHITE	NEG. OF C1	180V METER	TB12-3
85	22	RED	P.S.#2 TB10-7	POS. 15V	CONTROL D-SUB PIN 19
86	22	BLACK	P.S.#2 TB10-4	NEG. 15V	CONTROL D-SUB PIN 20
87	22	GREEN	P.S.#2 TB10-6	GROUND	CONTROL D-SUB PIN 21
88	20	GREEN	P.S.#2 TB10-5		RAIL GROUND
89	20	BLUE	P.S.#1 TB6-2	AC	P.S.#2 TB10-2
90	20	ORANGE	P.S.#1 TB6-1	AC	P.S.#2 TB10-1
91	16	GREEN	P.S.#1 TB6-3		RAIL GROUND
92	20	GREEN	P.S.#1 TB6-3		P.S.#1 TB6-5,6
93	20	RED	P.S.#2 TB10-7	CROWBAR	PC-521TB11-1
94	20	GREEN	P.S.#2TB10-6	CROWBAR	PC-521TB11-2
94	20	BLACK	P.S.#2 TB10-4	CROWBAR	PC-521TB11-3
96		**N/U**			**N/U**
97	14	GREEN	CONTR-TB2-3		RAIL GROUND
98	12	RED	TB1-2	A PHASE	TB4-14
99	14	BLACK	TB1-3	B PHASE	TB4-13
100	20	GREEN	PC-536-MO1-1	RELAY BD.	RAIL GROUND
101	20	GRAY	PC-536-MO1-5	TIME DELAY	PC-602-MO1-1

8-Jan-08

PULSAR 1000 CABINET WIRE LIST

LOW VOLTAGE

WIRE #	AWG	COLOR	FROM	REMARKS	TO
102	20	WHITE	PC-536-MO1-8		TB4-2
103	20	BLUE	TB4-3		PC-602-MO1-6
103	20	BLUE	PC-602-MO1-6		PC-536-MO1-10
104	20	GREEN	PC-602-MO1-4		RAIL GROUND
105	20	RED	CONTR-TB2-1	POS. 15V	PC-602-MO1-2,3
106	14	WHITE	TB4-1		L.V. CONTACTOR COIL
107	14	BLACK	TB1-3	B PH	L.V. CONTACTOR COIL



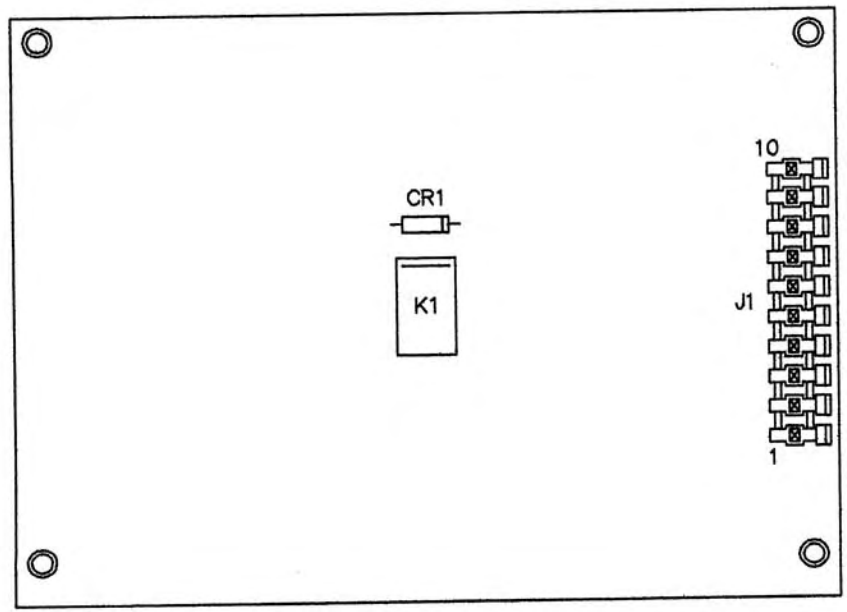
Energy-Onix

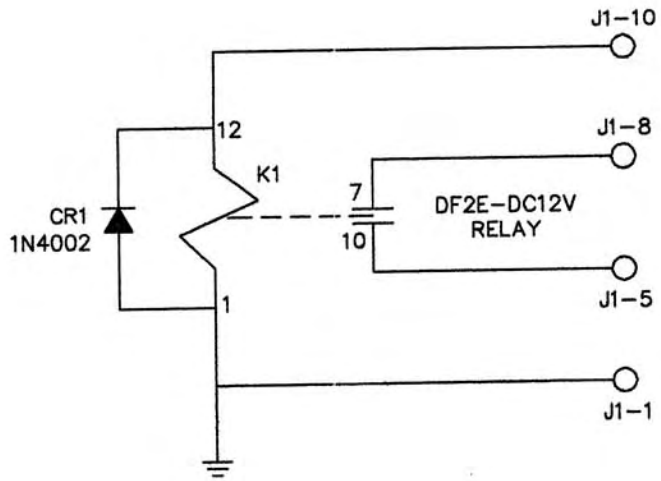
BROADCAST EQUIPMENT CO., INC.
1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184

NOTES:
N.T.S.

TITLE:
PULSAR 1000 STEP START SCHEMATIC

DWG. BY: John McCool		MODIFIED:	DWG. No.
DATE: 1/9/08	REV: -	-	S-330





Energy–Onix

BROADCAST EQUIPMENT CO., INC.
1306 RIVER ST., P.O. BOX 801, VALATIE, NY. 12184

NOTES:
N.T.S.

TITLE: PC–536
COMPONENT LAYOUT & SCHEMATIC

DWG. BY: John McCool		MODIFIED:	DWG. No.
DATE: 12/20/07	REV: –	1/7/08	CL–732