

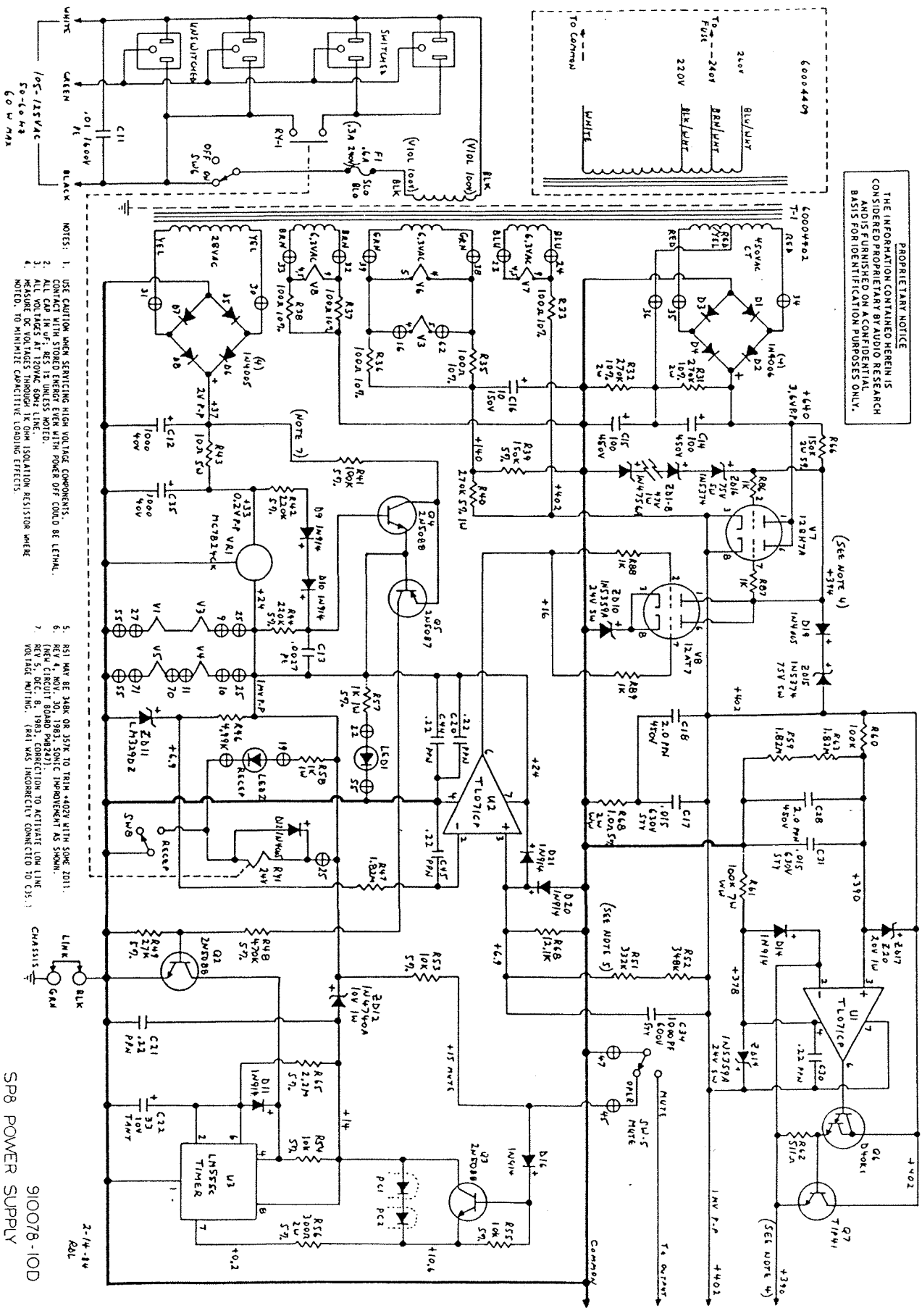
SP-8 PREAMPLIFIER

SCHEMATIC

Rev. D
2-14-84

audio research corporation

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MINNEAPOLIS, MINNESOTA 55430



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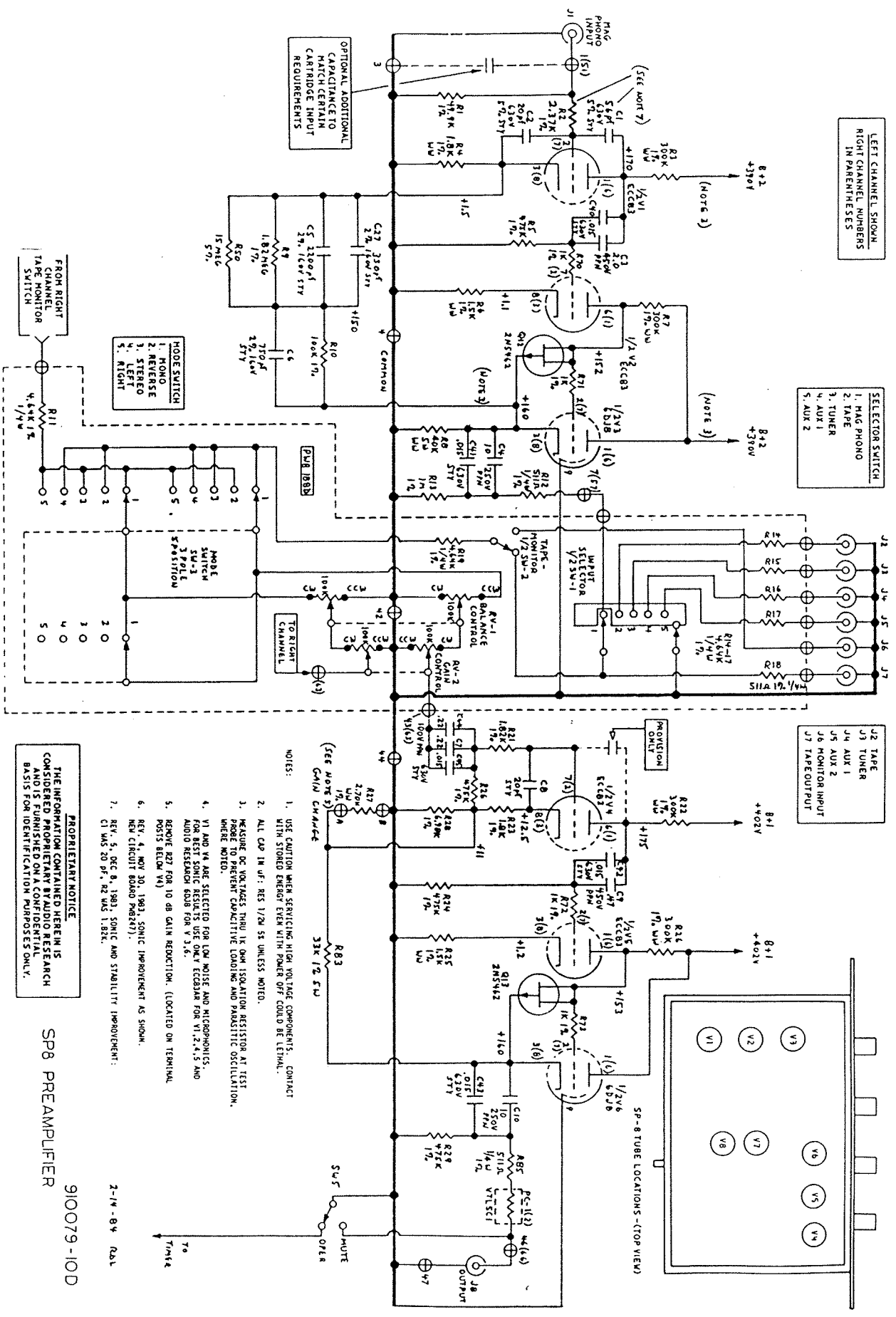
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NOTES: 1. USE CAUTION WHEN SERVICING HIGH VOLTAGE COMPONENTS.
2. CONTACT WITH STORED ENERGY EVEN WITH POWER OFF COULD BE LETHAL.
3. ALL CAP IN U.F. RES IS ONELESS NOTED.
4. ALL VOLTAGES AT 120VAC 60Hz LINE.
5. MEASURE DC VOLTAGES THROUGH 1K OHM ISOLATION RESISTOR WHERE NOTED, TO MINIMIZE CAPACITIVE LOADING EFFECTS.

R51 MAY BE 348K OR 357K TO TRIM +402V WITH SOME 2011.
REV 4, NOV. 30, 1983, 50N1C IMPROVEMENT AS SHOWN.
(NEW CIRCUIT BOARD PWB2427).
REV 5, DEC. 8, 1983, CORRECTION TO ACTIVATE LOW LINE
VOLTAGE M/LING. (R41 WAS INCORRECTLY CONNECTED TO C)

910078-10D
SP8 POWER SUPPLY



LEFT CHANNEL SHOWN
RIGHT CHANNEL NUMBERS
IN PARENTHESES

SELECTOR SWITCH

1. MAG PHONO
2. TAPE
3. TUNER
4. AUX 1
5. AUX 2

J2 TAPE
J3 TUNER
J4 AUX 1
J5 AUX 2
J6 MONITOR INPUT
J7 TAPE OUTPUT

NOTES:

1. USE CAUTION WHEN SERVICING HIGH VOLTAGE COMPONENTS. CONTACT WITH STORED ENERGY EVEN WITH POWER OFF COULD BE LETHAL

1. MEASURE DC VOLTAGES THRU 10 OHM ISOLATION RESISTOR AT TEST POINTS BETWEEN CAPACITORS TO DETERMINE LOADING AND PARASITIC COUPLING, WHERE NOTED.
2. ALL CAP IN USE: RES 1/2W 5% UNLESS NOTED.
3. REMOVE R27 FOR 10 DB GAIN REDUCTION. (LOCATED ON TERMINAL POSTS BELOW V4)
4. V1 AND V4 ARE SELECTED FOR LOW NOISE AND MICROPHONICS.
5. FOR BEST TONIC RESULTS USE ONCE EACH DAY FOR V1,2,4,5 AND AUDIO HEADPHONE BOSS FOR V3,6.
6. REV. 4, NOV 20, 1983, TONIC IMPROVEMENT AS SHOWN.
7. NEW CIRCUIT BOARDS (Pkg247).
8. REV. 5, DEC 8, 1983, TONIC AND STABILITY IMPROVEMENT: C1 WAS 20 PF, R2 WAS 1.32K.
9. 2-1/4 - 8% ROL

2-14-84 ROL

PROPRIETARY NOTICE

910079-10D
SP8 PREAMPLIFIER

SP-8 PARTS LIST

COMPONENT	QUAN.	DESCRIPTION	VALUE	RATING	TOL.	PART NO.
V1,2,4,5	4	EC683AR				32001300
V3,6	2	6DJB				32001100
V7	1	12BH7A				32001200
V8	1	12AT7				32000900
D1,4	4	1N4006	1A	800V		30502200
D5-8,12,19	6	1N4005	1A	600V		30500400
D9,10,11,14,16	7	1N914	100V			30500900
20,21						
ZD1-8	8	1N4755A Zener	47V	1W		30503200
ZD10,14	2	1N5359A Zener	24V	5W		30503300
ZD11	1	1N3290Z Zener Ref.	6.9V			31000700
ZD12	1	1N4740A Zener	10V	1W		30500300
ZD15,16	2	1N5374A Zener	75V	5W		30502900
ZD17	2	Z20 Zener	20V	1W		30503700
LED1,2	1	LED Green				34300100
Q2,3,4	3	2N5088 Trans	NPN			30003100
Q5	1	2N5087 Trans	PNP			30003000
Q6	1	D40K1 Trans	Dar-1 NPN			30005200
Q7	1	T1P41 Trans				30005900
Q12,13	4	2N5462 FET	P-Chan			45100525
RV1	1	Balance Control	100K	1/2W		45100528
RV2	1	Gain Control	100K	1/4W		31001200
VR1	1	MC7824CK	24V	LogTaper	10%	31001900
U1,2	2	TL071CP Op Amp				31000800
U3	1	HL555CN Timer				34400100
PC1,2	2	VTL5C1 Photocoupler				42999403
R1	2	Metal Film	49.9K	1/2W	1%	42237302
R2	2	Metal Film	2.37K	1/4W	1%	42182303
R3,7,22,26	8	Metal Film	1.82K	1/2W	1%	43300501
R4,23	4	Wirewound	300K	0.2W	1%	43182300
R5,20,24,29	8	Wirewound	1.8K	1W	1%	42475503
R6,25	4	Metal Film	475K	1/2	1%	43150302
R8	2	Wirewound	1.5K	2W	1%	43400400
R9,47,59,63	5	Metal Film	40K	5W	3%	42182603
R10,60	3	Metal Film	1.82Meg	1/2W	1%	42100503
R11,14-17,19	10	Metal Film	100K	1/2W	1%	42464302
R12,18,62,85	7	Metal Film	4.64K	1/4W	1%	42511202
R13	2	Metal Film	511	1/4W	1%	42100603
R21	2	Metal Film	1Meg	1/2W	1%	43270301
R27	2	Metal Film	1.82K	1/2W	1%	42698303
R28	2	Wirewound	2.70K	2W	1%	40270505
R31,32	2	Metal Film	6.98K	1/2W	1%	40100203
R33,35-38	5	Carbon	270K	2W	10%	41150503
R39	1	Carbon	100	1/2W	5%	41270504
R40	1	Carbon	150K	1/2W	5%	41100502
R41	1	Carbon	270K	1W	5%	43100104
R42,44	2	Carbon	100K	1/4W	5%	42499303
R43	1	Wirewound	220K	1/4W	5%	41470502
R46	1	Metal Film	10	5W	5%	41270402
R48	1	Metal Film	4.99K	1/2W	1%	41150703
R49	1	Carbon	470K	1/4W	5%	42348503
R50	2	Carbon	27K	1/4W	5%	41100402
R51	1	Metal Film	15Meg	1/2W	1%	
R52	1	Metal Film	332K	1/2W	1%	
R53-55	3	Carbon	348K	1/2W	1%	
			10K	1/4W	5%	

SP-8 PARTS LIST

COMPONENT	QUAN.	DESCRIPTION	VALUE	RATING	TOL.	PART NO.
R56	1	Wirewound (Fil. Film)	300	2W	5%	43300200
R57,58	2	Carbon	1K	1W	5%	41100304
R61	1	Wirewound	100K	7W	5%	43100500
R65	1	Carbon	2.2Meg	1/4W	5%	41220602
R66	1	Metal Film	150K	2W	2%	46150500
R67	1	Wirewound	1.0	2W	5%	43100002
R68	1	Metal Film	12-1K	1/2W	1%	42121403
R70,71,86,87	6	Metal Film	1K	1/4W	1%	42100302
R72,73,88,89	6	Metal Film	1K	1/2W	1%	42100303
R83	2	Wirewound	33K	5W	1%	43303400
C1	2	Polystyrene	56pF	20PF	2.5%	53560102
C2,8	4	Polystyrene	20PF	630V	5%	53200101
C3,18,28	4	Polystyrene	20PF	630V	5%	53200101
C4,19	4	Polystyrene	2uF	450V	10%	53200602
C5	2	Polystyrene	10uF	250V	10%	53100700
C6	2	Polystyrene	2200pF	160V	2.5%	53220302
C7,20,21,23	9	Polystyrene	750pF	160V	2.5%	53150200
C9	2	Polystyrene	.22uF	100V	10%	53220506
C11	1	Polystyrene	.47uF	450V	10%	53370509
C12,35	2	Electrolytic	.01uF	1600V	10%	53100403
C13	1	Polystyrene	1000uF	40V		50100904
C14,15	2	Electrolytic	.0027uF	200V	10%	53270301
C16	1	Electrolytic	100uF	450V		50100802
C17,31,40-43,45	12	Electrolytic	.015uF	150V	5%	53150404
C22	1	Tantalum	10uF	150V	10%	51130700
C27	2	Polystyrene	33uF	10V	2.5%	53330200
C34	1	Polystyrene	330pF	160V	5%	53100301
F1	1	Fuse, Slo-Blo	1000pF	250V		34500220
T1	1	Transformer	0.6A	250V		34500120
OT1-4	4	Transformer	0.3A	120V		60000402
SW1	1	Input Selector Sw.		100V		60000403
SW2	1	Mode Monitor Sw.		240V		23201300
SW3	1	Mode Switch	2Pole			24000400
SW5	1	Mute-Operate Sw.	3Pole			24100400
SW6	1	On-Off Switch	DPDT			24000700
SW8	1	Receptacle Sw.	DPDT			24100700
RV1	1	Relay 24V	SPST			24100700
U1-U16	16	Phono Jack				64100600
						23201000

NOTE: Resistor values are in "ohms" except "K" = x 1,000; "Meg" = x 1,000,000