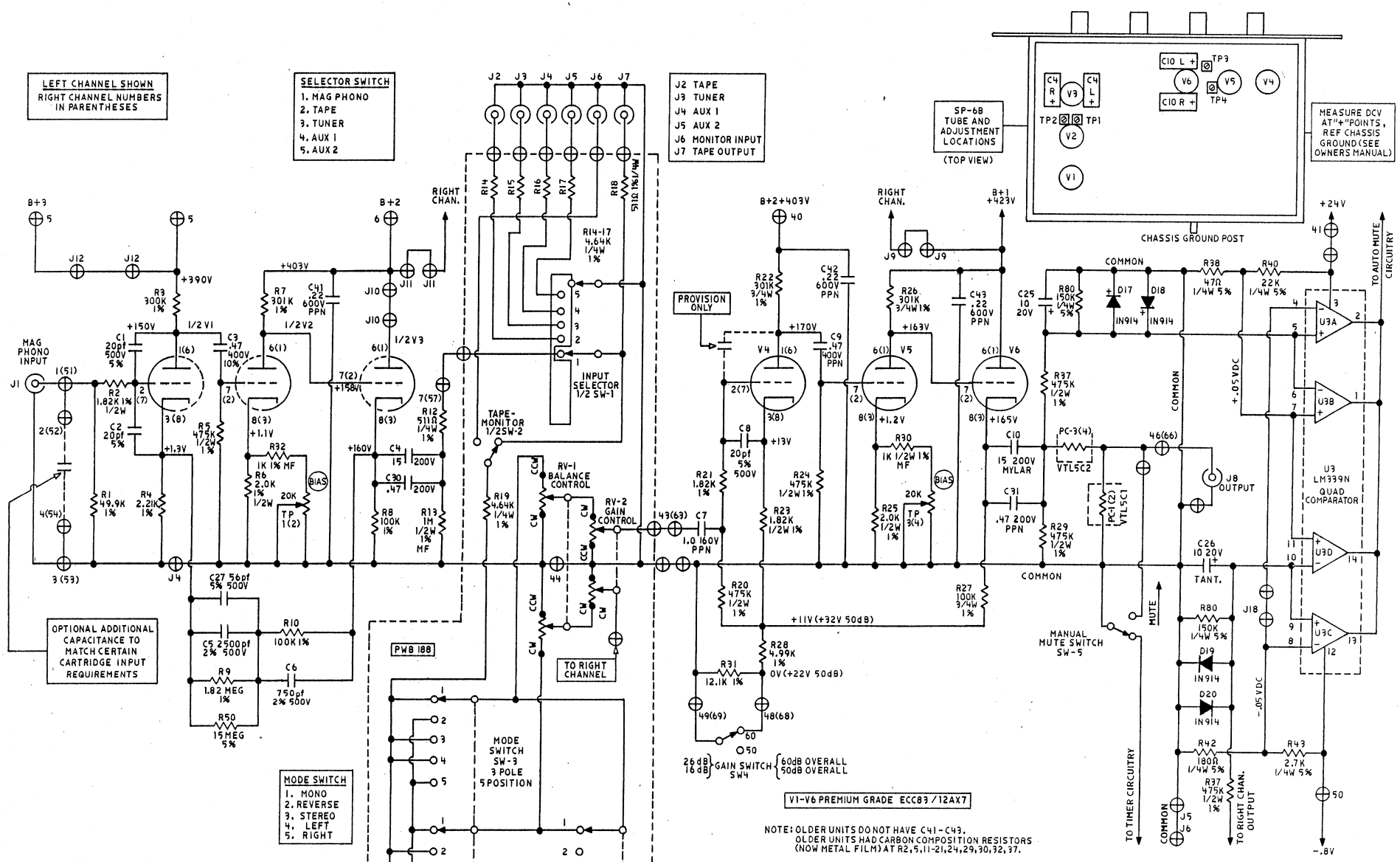
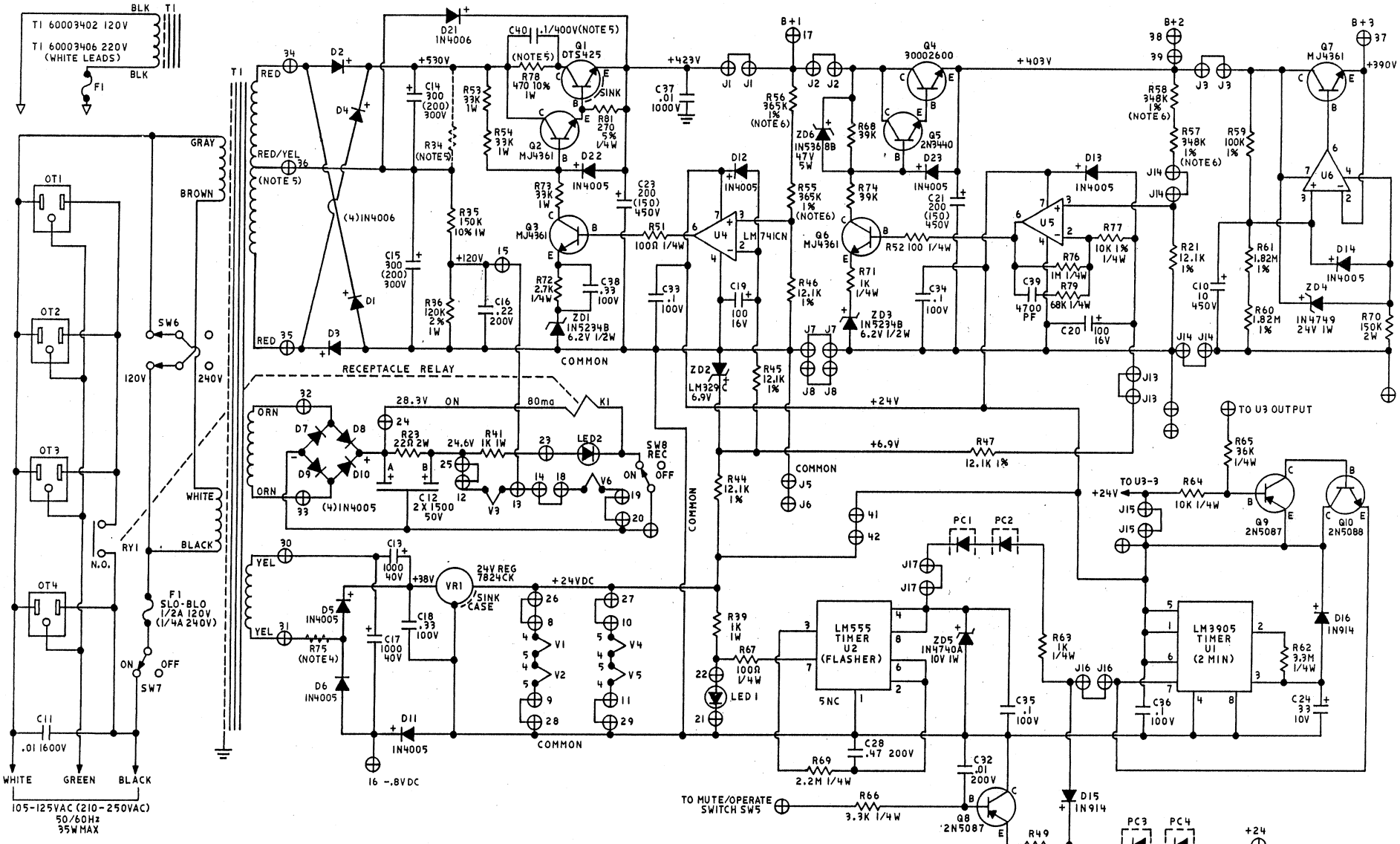
MODEL SP-6B PREAMPLIFIER

SCHEMATIC & PARTS LIST

Rev. D
1/8/81

audio research
HIGH DEFINITION®
3900 ANNAPOLIS LANE NORTH / PLYMOUTH, MINNESOTA 55447-5447
PHONE: 763-577-9700 FAX 763-577 0323


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
SP-6B TUBE AND ADJUSTMENT LOCATIONS
(TOP VIEW)
MEASURE DCV AT "+" POINTS, REF CHASSIS GROUND (SEE OWNERS MANUAL)
CHASSIS GROUND POST
MAG PHONO INPUT
INPUT SELECTOR 1/2 SW-1
TAPE-MONITOR 1/2SW-2
RV-1 BALANCE CONTROL
RV-2 GAIN CONTROL
PROVISION ONLY
OPTIONAL ADDITIONAL CAPACITANCE TO MATCH CERTAIN CARTRIDGE INPUT REQUIREMENTS
PWB 188
TO RIGHT CHANNEL
MODE SWITCH SW-3 3 POLE 5 POSITION
MODE SWITCH
1. MONO
2. REVERSE
3. STEREO
4. LEFT
5. RIGHT
FROM RIGHT CHANNEL TAPE MONITOR SWITCH
26dB 16dB GAIN SWITCH SW4 60dB OVERALL 50dB OVERALL
MANUAL MUTE SWITCH SW-5
MUTE
TO AUTO MUTE CIRCUITRY
TO TIMER CIRCUITRY
TO RIGHT CHAN. OUTPUT
U3 LM339N QUAD COMPARATOR
U8 OUTPUT
COMMON
+.05VDC
-.05VDC
V1-V6 PREMIUM GRADE ECC83/12AX7
NOTE: OLDER UNITS DO NOT HAVE C41-C43.
OLDER UNITS HAD CARBON COMPOSITION RESISTORS (NOW METAL FILM) AT R2,5,11-21,24,29,30,32,37.
PROPRIETARY NOTICE
THE INFORMATION CONTAINED HEREIN IS CONSIDERED PROPRIETARY BY AUDIO RESEARCH AND IS FURNISHED ON A CONFIDENTIAL BASIS FOR IDENTIFICATION PURPOSES ONLY.
AUDIO RESEARCH CORPORATION
MINNEAPOLIS, MINNESOTA
SCHEMATIC
SP-6B PREAMPLIFIER & SENSORS
1-31-80
910064-10 D



NOTES:

1- ALL CAP. IN μF; RES. 1/2W AND 5% TOLERANCE UNLESS NOTED.

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

3- ALL VOLTAGES AT 120VAC 60Hz LINE.

4- R75 5Ω 5-7W WITH 60003400 TRANSFORMER, 0Ω WITH 60003402 OR 60003406.

5- R34 WAS 270K 2W WITHOUT C-TAP ON T1; R78 WAS 100Ω. C40 ONLY WITH 470Ω FOR R78.

6- R55, R56 MAY BE 348K; R57, R58 MAY BE 332K FOR PROPER B+ WITH SOME ZD2.

PROPRIETARY NOTICE

THE INFORMATION CONTAINED HEREIN IS CONSIDERED PROPRIETARY BY AUDIO RESEARCH AND IS FURNISHED ON A CONFIDENTIAL BASIS FOR IDENTIFICATION PURPOSES ONLY.

TOLERANCES (EXCEPT AS NOTED)	AUDIO RESEARCH CORPORATION MINNEAPOLIS, MINNESOTA
DECIMAL ±	SCALE
	DRAWN BY SC
	APPROVED BY RDL
FRACTIONAL ±	TITLE: SCHEMATIC SP-6B POWER SUPPLY & TIMERS
ANGULAR ±	DATE: 1-31-80
	DRAWING NUMBER: 910065-10 C

COMPONENT	QUAN.	DESCRIPTION	VALUE	RATING	TOL.	ARC PART NO.
V1,2,4,5	6	ECC83/12AX7A				32000700
D1-4,21	5	IN4006		800V		30502200
D5-14,22,23	12	IN4005		600V		30500400
D15-20	6	IN914		100V		30500900
ZD1,3	2	IN5234B Zener		6.2V	1/2W	30502100
ZD2	1	LM329CZ Ref.		6.9V		31000700
ZD4	1	IN4749 Zener		24V	1W	30502500
ZD5	1	IN4740A Zener		10V	1W	30500300
ZD6	1	IN5368B Zener		47V	5W	30500100
LED1,2	2	LED Green				34300100
Q1	1	DTS425 Transistor				30004501
Q2,7	2	MJ4361 Transistor				30004400
Q3,6	2	MJ4361 Transistor				30004401
Q4	1	NPN Transistor				30002600
Q5	1	2N3440 Transistor				30001100
Q8,9	2	2N5087 Transistor				30003000
Q10	1	2N5088 Transistor				30003100
RV1	1	Balance Control	100K	LinTaper	10%	45100525
RV2	1	Gain Control	100K	LogTaper	10%	45100523
VR1	1	MC7824CK Voltage Reg.	24V	1A		31001200
U1	1	LM3905N IC Timer				31000900
U2	1	LM555CN IC Timer				31008000
U3	1	LM339N IC QuadComparator				31001000
U4-6	3	LM741CN IC Op Amp				31000400
PC1,2	2	VTL5C1 Photo Coupler	—	100V		34400100
PC3,4	2	VTL5C2 Photo Coupler		200V		34400101
TP1-4	4	Trim Pot.	20K	LinTaper	10%	45200412
R1	2	Metal Film	49.9K	1/2W	1%	42499403
R2,21	4	Metal Film	1.82K	1/2W	1%	42182303
R3	2	Wirewound	300K	2/10W	1%	43300501
R4	2	Metal Film	2.21K	1/2W	1%	42221303
R5,20,24,29,37	10	Metal Film	475K	1/2W	1%	42475503
R6,25	4	Metal Film	2.0K	1/2W	1%	42200303
R7,22,26	6	Metal Film	301K	3/4W	1%	42301504
R8,27	4	Metal Film	100K	3/4W	1%	42100504
R9,60,61	4	Metal Film	1.82Meg	1/2W	1%	42182603
R10,59	3	Metal Film	100K	1/2W	1%	42100503
R11,14-17,19	10	Metal Film	4.64K	1/4W	1%	42464302
R12,18	4	Metal Film	511	1/4W	1%	42511202
R13	2	Metal Film	1.0Meg	1/2W	1%	42100603
R23	2	Metal Film	1.82K	1/2W	1%	42182303
R28	2	Metal Film	4.99K	1/2W	1%	42499303
R30,32	4	Metal Film	1K	1/2W	1%	42100303
R31,44-48	7	Metal Film	12.1K	1/2W	1%	42121403
R33	1	Carbon	22Ω	2W	5%	41220105
R34	1	Carbon	270K	2W	10%	40270505
R35	1	Carbon	150K	1W	10%	40150504
R36	1	Metal Film	120K	1W	2%	46120501
R38	1	Carbon	47Ω	1/4W	5%	41470402
R39,41,49	3	Carbon	1K	1W	5%	41100304
R40	1	Carbon	22K	1/4W	5%	41220402
R42	1	Carbon	180Ω	1/4W	5%	41180202
R43,72	2	Carbon	2.7K	1/4W	5%	41270302
R50	2	Carbon	15Meg	1/2W	5%	41150703
R51,52,67	3	Carbon	100Ω	1/4W	5%	41100202
R53,54,73	3	Carbon	33K	1W	5%	41330404
R55,56	2	Metal Film	365K	1/2W	1%	42365503

COMPONENT	QUANT.	DESCRIPTION	VALUE	RATING	TOL.	ARC PART NO.
R57,58	2	Metal Film	348K	1/2W	1%	42348503
R62	1	Carbon	3.3Meg	1/4W	5%	41330602
R63,71	2	Carbon	1K	1/4W	5%	41100302
R64	1	Carbon	10K	1/4W	5%	41100402
R65	1	Carbon	36K	1/4W	5%	41360402
R66	1	Carbon	3.3K	1/4W	5%	41330302
R68,74	2	Carbon	39K	1/2W	5%	41390403
R69	1	Carbon	2.2Meg	1/4W	5%	41220602
R70	1	Carbon	150K	2W	5%	41150505
R75	1	Wirewound	5Ω	7W	5%	43500002
R76	1	Metal Film	1.0Meg	1/4W	1%	42100602
R77	1	Metal Film	10K	1/4W	1%	42100402
R78	1	Carbon	100Ω	1W	10%	40100204
		Carbon	470Ω	1W	10%	40470204
R79	1	Carbon	68K	1/4W	5%	41680402
R80	2	Carbon	150K	1/4W	5%	41150502
R81	1	Carbon	270Ω	1/4W	5%	41270202
C1,2,8	6	Dipped Mica	20pF	500V	5%	57200100
C3,9	4	Polypropylene	.47μF	400V	20%	53470506
C4,10	4	Polyester	15μF	200V	20%	53150700
C5	2	Dipped Mica	2500pF	500V	2%	57250301
C6	2	Dipped Mica	750pF	500V	2%	57750201
C7	2	Polypropylene	1.0μF	160V	20%	53100606
C12	1	Electrolytic	2x1500μF	50V		50150900
C13,17	2	Electrolytic	1000μF	40V		50100904
C14,15	2	Electrolytic	300μF	300V		50300800
C16	1	Polyester	.22μF	200V	10%	53220501
C18,38	2	Ceramic Monolythic	.33μF	100V	20%	52330500
C19,20	2	Electrolytic	100μF	16V		50100801
C21,23	2	Electrolytic	200μF	450V		50200801
C24	1	Dipped Tantalum	33μF	10V	10%	51330700
C25,26	2	Dipped Tantalum	10μF	20V	10%	51100700
C27	2	Dipped Mica	56pF	500V	5%	57560100
C28	1	Polyester	.47μF	200V	10%	53470504
C29	1	Electrolytic	10μF	450V		50100702
C30,31	4	Polypropylene	.47μF	200V	20%	53470507
C32	1	Ceramic Monolythic	.01μF	200V	10%	52100400
C33-36	4	Ceramic Monolythic	.1μF	100V	10%	52100500
C37	1	Ceramic Disc	.01μF	1000V	GMV	52100401
C39	1	Ceramic Monolythic	4700pF	100V	10%	52470300
C40	1	Polyester	.1μF	400V	10%	53100502
C41-43	3	Polypropylene	.22μF	600V	10%	53220505
F1	1	Slo-Blo 120V	1/2A	250V		34500200
		240V	1/4A	250V		34500100
T1	1	Transformer	(See Schematic)	120/240V		60003400
		Transformer	(See Schematic)	120V		60003402
		Transformer	(See Schematic)	220V		60003406
OT1-4	4	AC Receptacle				23200500
SW1	1	Input Selector Switch		2Pole5Pos		24001000
SW2	1	Tape Monitor Switch		DPDT Gold		24100400
SW3	1	Mode Switch		3Pole5Pos		24000700 ~~24000700~~
SW4	1	Gain Switch		DPDT Slide		24100100
SW5	1	Mute-Operate Switch		DPDT Gold		24100400
SW6	1	120V-240V Switch		DPDT Slide		24100600
SW7,8	2	On-Off Switch		DPDT Silver		24100700 ~~24000700~~
K1	1	Relay 24V		SPST N.O.		64100300
J1-16	16	Phono Jack				23201000