

audio research

HIGH DEFINITION®

5740 GREEN CIRCLE DRIVE / MINNETONKA, MINNESOTA 55343-4424 / PHONE 612/939-0600 FAX 612/939-0604

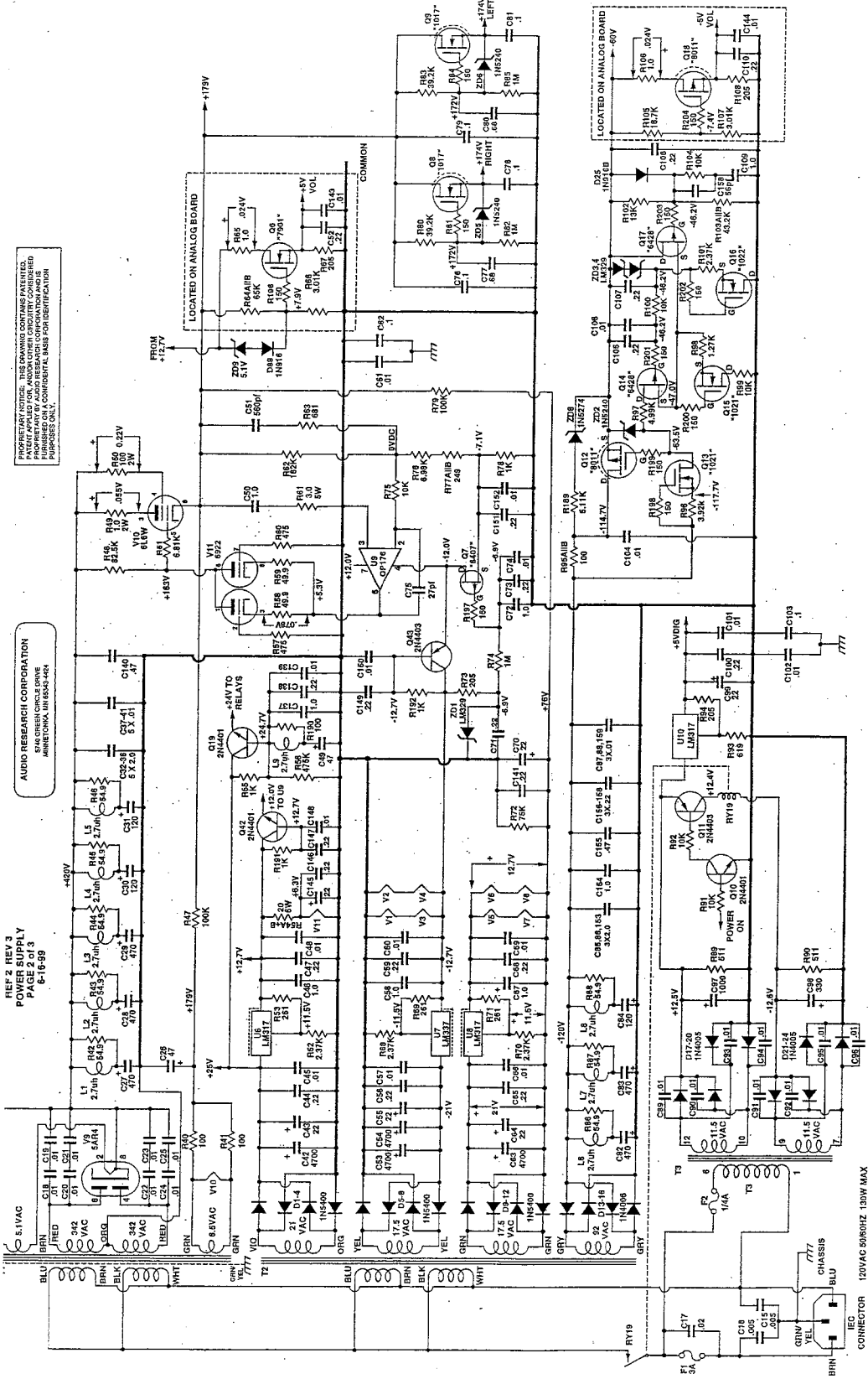
REF2 SCHEMATIC

AND PARTS LIST

REF. 2 REV. 3 POWER SUPPLY PARTS LIST 6-15-58

AUDIO RESEARCH CORPORATION
5140 GREEN CIRCLE DRIVE
MINNETONKA, MN 55345-4404

PROPRIETARY NOTICE: THIS DRAWING CONTAINS PATENTED
INFORMATION. IT IS THE PROPERTY OF AUDIO RESEARCH CORPORATION AND IS
NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS
ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY
ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT PERMISSION IN
WRITING FROM AUDIO RESEARCH CORPORATION.



PARTS LIST

AS of DEC 29 99

PRODUCT: REF2

Schematic Symbol	Quantity	ARC Part #	Description
C CAPACITORS			
C1,2,3,14	8	52220200	CAP., 220pf 200V ±10%
C4,6,7,61,89-96,102,111,117,123,126	25	52100400	CAP., .01µf 200V ±10%
C 128,130,132,134,136,151			
C5,62,103	4	52100500	CAP., 0.1µf 100V ±20%
C8,9	4	53100415	CAP., .01µF 630V (M) INFINI
C10,11	4	53680507	CAP., .68µF 425V (M2A) INFINI
C12,13	4	53400604	CAP., 4.0µF 20% 425V Mag
C15,16	2	53470305	CAP., 4700pF ±20% 250V or 275V
C17	1	52200400	CAP., .02µF 300VAC/2000VDC 20%
C18,25	8	53100407	CAP., .01µf ±20% 250V
C26	1	50470703	CAP., 47µF 250V
C27,28,29	3	50470807	CAP., 470µF 450V "LYTIC"
C30,31,84	3	50120801	CAP., 120µF 450V "LYTIC"
C32-36	5	53200602	CAP., 2µF ±10% 450V
C37-41,87,88,104	9	53100412	CAP., .01µF ±10% 600V RTX
C42,53,54,63	4	50470901	CAP., 4700µF 35V
C43,55,64,99,145	4	50220702	CAP., 22µF 50V "LYTIC"
C44,47,52,56,59,65,68,71,73,100,105	17	53220507	CAP., .22µf ±10% 160V
C 107,108,110,119,138,141			
C45,48,57,60,66,69,74,101,106,139,143	15	53100410	CAP., .01uf ±10% 400V
C 144,148,149			
C46,47,72,109,137,154	6	53100606	CAP., 1.0µf ±10% 250V
C49	1	50470704	CAP., 47µF "MUSE"
C50	1	53100610	CAP., 1.0µF ±10% 400V PPMF
C51	1	53560201	CAP., 560pF ±2.5% 630V
C67,112,118,124,125,127,129,131,133	10	50100601	CAP., 1µF 50V "LYTIC"
C 135			
C70	1	50220701	CAP., 22µF 100V
C75	1	53270101	CAP., 27pf ±1pf 630V PNP
C76,78,79,81	4	53100508	CAP., .1µF 250V WIMA
C82,83	2	50470809	CAP., 470µF 250V
C85,86	3	53200603	CAP., 2µF ±10% 250V
C97	1	50100913	CAP., 1000µF 16V "LYTIC"
C98	1	50330801	CAP., 330µF 16V "LYTIC"
C113,114	2	52100200	CAP., 100pf 200V ±10%
C115,116	2	52100301	CAP., 1000pf 200V ±10% CER RAD
C120	1	51330702	CAP., 33µf 16V ±10%
C121,122	2	52100100	CAP., 10pf 200V ±10% CER. RAD.
C140	1	53470509	CAP., .47µf ±10% 450V
C142,146,147,149,157,158	6	53220507	CAP., .22µf ±10% 160V
D DIODES			
D1-12	12	30501500	1N5400
D13-16	4	30502200	1N4006
D17-24	8	30500400	1N4005
D25-88	64	30500910	1N916B
F FUSES			
F1	1	34500404	(B)FUSE, 3 AMP MDQ BUSSMAN
F2	1	34500102	(B)FUSE, 1/4 AMP 250V

PARTS LIST

As of DEC 29 99

PRODUCT: REF2

Schematic Symbol	Quantity	ARC Part #	Description
IR IR RECEIVERS			
IR1	1	34100100	MODULE, IR RECEIVER
J CONNECTORS			
J1,3,5,7,9,11,13,15	16	23201960	CONNECTOR, XLR FEM. #NC3FD-V-B
J2,4,6,8,10,12,14,16,18,20,22	11	23201509	JACK, CHASSIS RED
J2,4,6,8,10,12,14,16,18,20,22	11	23201510	JACK, CHASSIS WHITE
J17,19,21	6	23201965	CONNECTOR, XLR MALE #NC3MD-V-B
L INDUCTORS			
L1-9	9	61000160	CHOKE, 2.7 μ H \pm 10%
LE PANEL INDICATOR			
LE1-62	62	34300300	L.E.D., GREEN SPOT LTL-1234A
Q TRANSISTORS			
Q1,2	4	30011019	FET, GREEN WHITE WHITE
Q3,4,5	8	30011017	FET, GREEN/WHITE/VIOLET
Q6	1	30006761	FET, ORANGE YELLOW BROWN
Q7	1	30006407	FET, BLUE VIOLET
Q10,19,21,22,25-42	22	30002800	TRANSISTOR, 2N4401
Q11,20,23,24,43	5	30002900	TRANSISTOR, 2N4403
Q12,18	2	30008011	FET, GREEN GREEN
Q13,15	2	30011021	FET, GREEN GREEN BROWN
Q14,17	2	30006428	FET, GRAY GRAY
Q16	1	30011022	FET, GREEN GREEN RED
R RESISTORS			
R1,2	4	42475402	RES., 47.5K Ω MK-2 1% 50 PPM
R3,4	4	49332413	RES., 33.2K Caddock
R5A,5B,6A,6B	8	49249413	RES., 24.9K Caddock
R7,8,25,26,32,33,78	13	42100314	RES., 1K Ω MK-5 1% 50PPM
R9,10,27,28,34,35	12	42200414	RES., 20K Ω MK-5 1% 50PPM
R11,12,16,17,121,132,141-148,151-153	37	42332202	RES., 332 Ω MK-2 1% 50PPM
R 156-163,165-172			
R13,18	4	42619314	RES., 6.19K Ω MK-5 1% 50PPM
R14,15	4	42750202	RES., 750 Ω MK-2
R19,20	5	42100503	RES., 100K Ω MK-3 1% 50PPM
R21,22,31	6	42432302	RES., 4.32K MK-2
R23A	2	42357203	RES., 357 Ω MK-3 1% 50PPM
R23B	2	42182303	RES., 1.82K Ω MK-3 1% 50PPM
R24	2	42221302	RES., 2.21K Ω MK-2 1% 50 PPM
R29,30	4	49301303	RES., 3.01K 1% HOLCO H4
R36A,37A	4	42392202	RES., 392 Ω MK-2 1% 50PPM
R36B,37B,105	5	42187402	RES., 18.7K Ω MK2 1% 50PPM
R38,39,95A,95B	6	42200205	RES., 200 Ω MK8 1% 50PPM
R40,41,190	3	42100203	RES., 100 Ω MK-3 1% 50PPM
R42,46,86-88	8	42549103	RES., 54.9 Ω MK-3 1% 50PPM
R47,79	2	42100505	RES., 100K Ω MK-8 1% 50PPM
R48	1	42825405	RES., 82.5K Ω MK-8 1% 50PPM
R49,65,106	3	43100006	RES., 1.0 Ω 3W PRC
R51	1	42681303	RES., 6.81K Ω MK-3 1% 50PPM
R52,68,70	3	42237303	RES., 2.37K Ω MK-3 1% 50PPM

PARTS LIST

As of DEC 29 99

PRODUCT: REF2

Schematic Symbol	Quantity	ARC Part #	Description
R53,69,71	3	42261203	RES., 261Ω MK3 1% 50 PPM
R54A,54B	2	43100103	RES., 10Ω 3W 5%
R55,118,131	3	42100302	RES., 1KΩ MK-2 1% 50 PPM
R56	1	42475502	RES., 475KΩ MK-2 1% 50PPM
R57,60	2	42475203	RES., 475Ω MK-3 1% 50PPM
R58,59	2	42499102	RES., 49.9Ω MK-2 1% 50PPM
R61	1	43300001	RES., 3Ω 6.5W ±5% W.W.
R62	1	42182503	RES., 182KΩ MK-3 1% 50PPM
R63	1	42681203	RES., 681Ω MK-3 1% 50PPM
R64A,64B	2	42130503	RES., 130KΩ MK-3 1% 50PPM
R66,107	2	42301303	RES., 3.01KΩ MK-3 1% 50PPM
R67,73,94,108	4	42205203	RES., 205Ω MK-3 1% 50PPM
R72	1	42750405	RES., 75KΩ MK-8 1% 50PPM
R74,82,85	3	42100603	RES., 1 MEG MK-3 1% 50PPM
R75,91,92,99,100,104	6	42100403	RES., 10KΩ MK-3 1% 50PPM
R76	1	42698303	RES., 6.98KΩ MK-3 1% PPM
R77A	1	42332203	RES., 332Ω MK-3 1% 50PPM
R77B,191,192	3	42100303	RES., 1KΩ MK-3 1% 50PPM
R80,83	2	42392403	RES., 39.2KΩ MK-3 1% 50PPM
R89,90	2	42511203	RES., 511Ω MK-3 1% 50PPM
R93	1	42619203	RES., 619Ω MK-3 1% 50PPM
R96	1	42392302	RES., 3.92KΩ MK-2 1% 50 PPM
R97	1	42499303	RES., 4.99KΩ MK-3 1% 50PPM
R98	1	42127302	RES., 1.27KΩ MK-2 1% 50PPM
R101	1	42237302	RES., 2.37KΩ MK-2 1% 50PPM
R102	1	42130403	RES., 13KΩ MK-3 1% 50PPM
R103A	1	42619403	RES., 61.9KΩ MK-3 1% 50 PPM
R103B	1	42143503	RES., 143KΩ MK-3 1% 50PPM
R109-114,126-130,135-138,154,173-188	32	42100402	RES., 10KΩ MK-2 1% 50 PPM
R110,120,134,139,140,149,150,155,164	10	42100002	RES., 1Ω MK-2 1% 50 PPM
R119	1	42221402	RES., 22.1KΩ MK-2 1% 50 PPM
R123	1	42274403	RES., 27.4KΩ MK-3 1% 50PPM
R124	1	42768403	RES., 76.8KΩ MK-3 1% 50PPM
R125,133	2	42100602	RES., 1 MEG MK2 1% 50PPM
R189	1	42511303	RES., 5.11KΩ MK-3 1% 50PPM
R193-208	25	42150203	RES., 150Ω MK-3 1% 50PPM
RV CONTROLS			
RV1,2	4	45100302	POT., TRIM 1KΩ #POT2103P-1-102
RY RELAYS			
RY1-16	32	64101600	RELAY, 12VDC
RY17,18	4	64101000	RELAY, 12V REED S1P 1200Ω
RY19	1	64101200	RELAY, 24V POWER ON
SW SWITCHES			
SW1-4	4	24003300	SWITCH, UP-DOWN REF1-2
SW5-8	4	24102600	SWITCH, MOMENTARY REF1/2/LS25

PARTS LIST

As of DEC 29 99

PRODUCT: REF2

Schematic Symbol	Quantity	ARC Part #	Description
T TRANSFORMERS			
T1	1	60016314	XFR., HV POWER REFPHONO/2
T2	1	60009400	(B)XFR., 5 VOLT 120V.
U INTEGRATED CIRCUITS			
U1,3	4	31008101	POT., DIGITAL 100KΩ DS1666-100
U2,4	4	31008111	POT., DIGITAL 10KΩ DS1666-10
U5	2	31003820	DUAL ANALOG SWITCH DG409DJ
U6,8,10	3	31004000	REGULATOR, VOLTAGE ADJ POS.
U7	1	31004700	REGULATOR, VOLTAGE ADJ. NEG.
U9	1	31002210	OP-AMP, OP176GP
U11	1	31007400	TRIPLE 3-INPUT & GATE, 74HC11N
U12,13	2	31000800	TIMER, NE555N
U14	1	31006900	(Q)MICROCONTROLLER
U15-20	6	31006800	REGISTER, LATCH
V VACUUM TUBES			
V1-8,11	9	32001162	(B)TUBE, 6922 SILVER TESTED
V9	1	32001800	(B)TUBE, 5AR4-C
V10	1	32000420	(B)TUBE, SV6L6GC
X CRYSTALS			
X1	1	27000060	CRYSTAL, 8MHZ #CTX082ND
ZD ZENER DIODES			
ZD1,3,4	3	31000705	FET, GREEN
ZD2,5,6	3	30504400	IN5240B
ZD7	1	30505300	ZENER, 3.9V BZX79-C3V9RL
ZD8	1	30503800	DIODE, ZENER IN5274B
ZD9	1	30505200	(B)ZENER, 5.1V BZX79-C5V1RL