

SP-8 PREAMPLIFIER

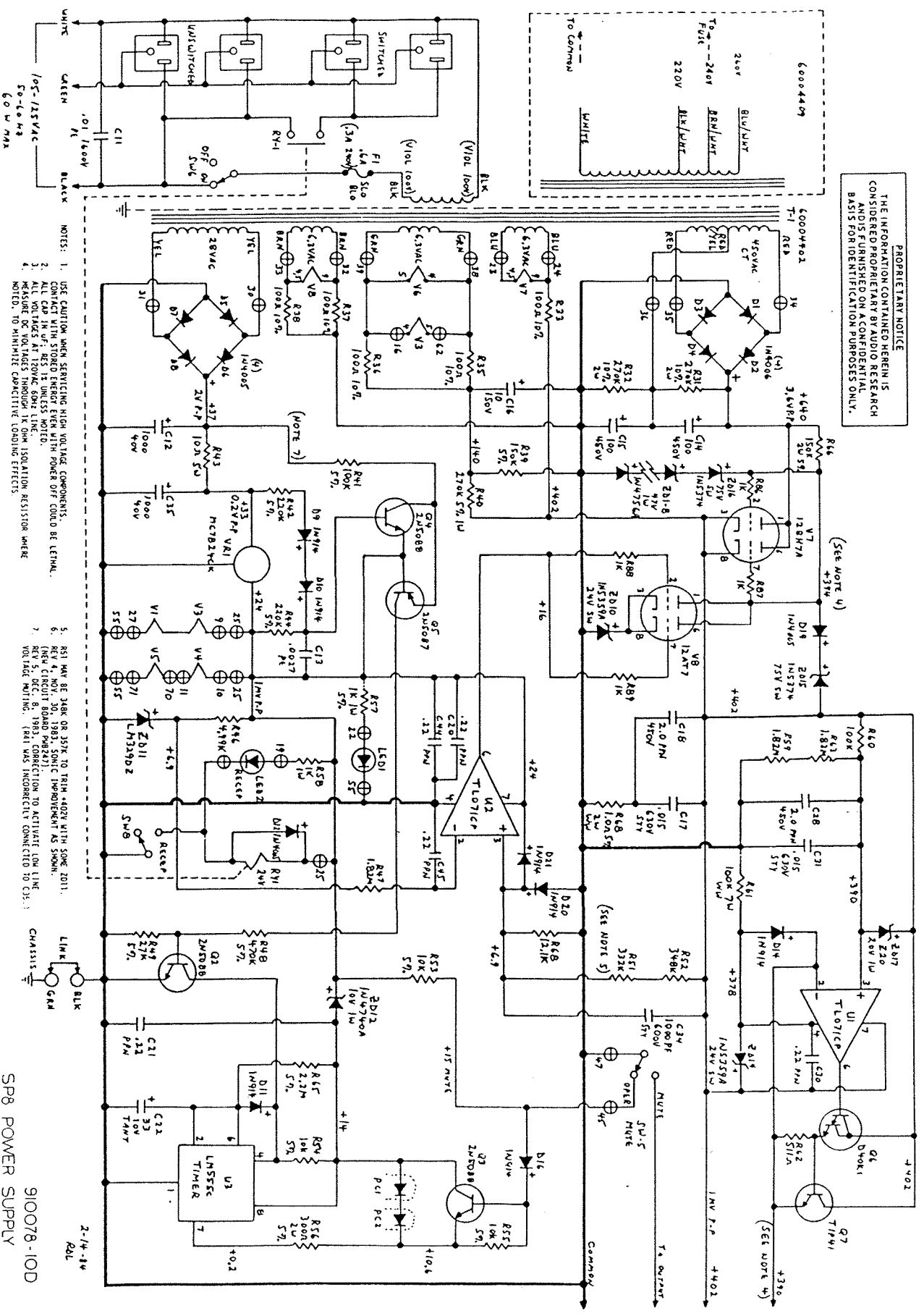
SCHEMATIC

Rev. D  
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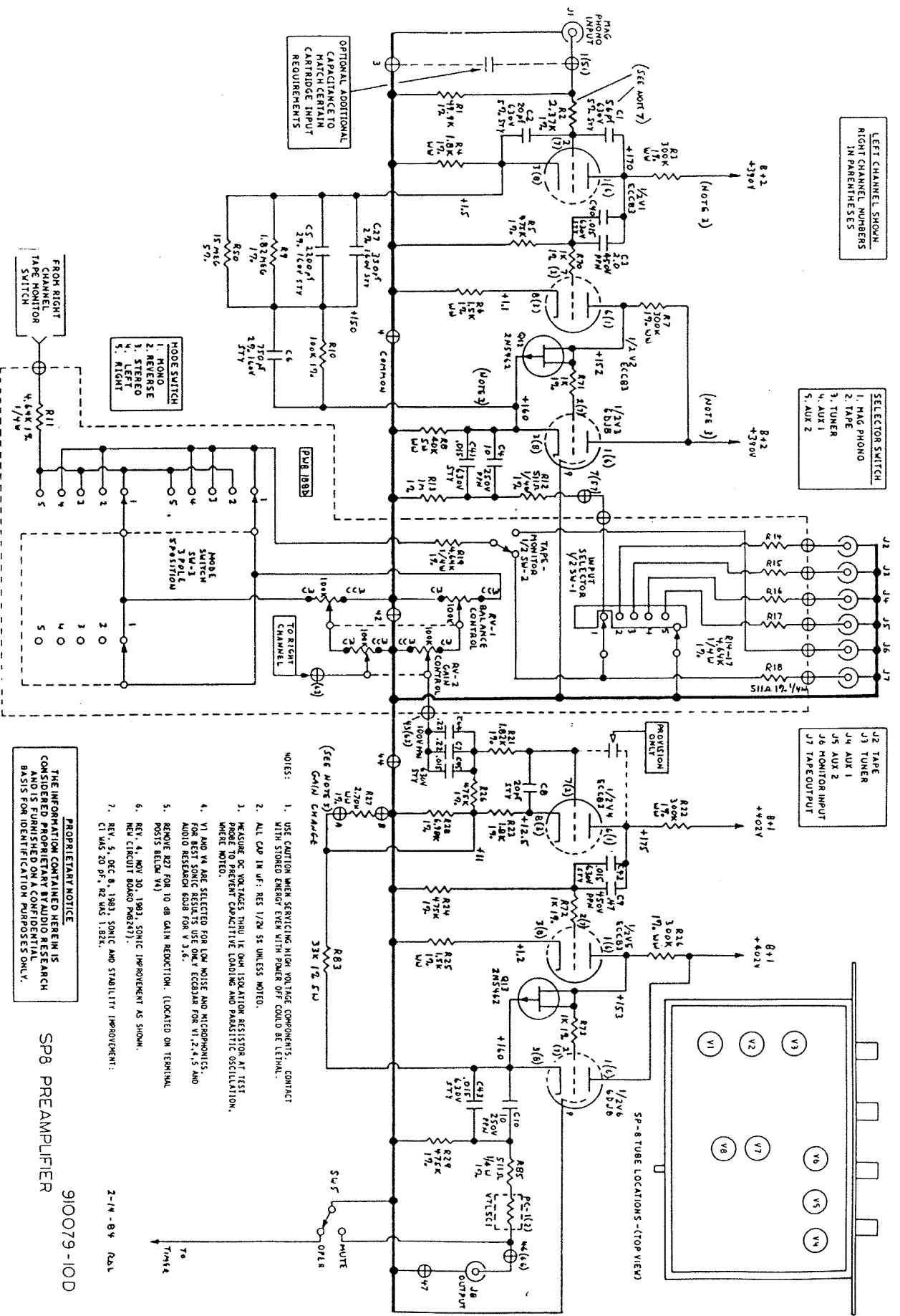
**audio research corporation**

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MINNEAPOLIS, MINNESOTA 55430

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- NOTES:
1. USE CAUTION WHEN SERVICING HIGH VOLTAGE COMPONENTS. CONTACT WITH STORED ENERGY EVEN WITH POWER OFF COULD BE LETHAL.
  2. ALL CAP IN  $\mu\text{F}$ ; RES IN  $\Omega$ ; RES IN UNLESS NOTED.
  3. MEASURE DC VOLTAGES THROUGH 1K OHM ISOLATION RESISTOR WHERE NOTED. TO MINIMIZE CAPACITIVE LOADING EFFECTS.
  4. R1 MAY BE MARK OR 35K TO TRIM-ADJUST WITH SCHEM. (REV 4, NOV. 20, 1983, SONIC IMPROVEMENT AS SHOWN.)
  5. (REV 5, DEC. 8, 1983, SONIC IMPROVEMENT AS SHOWN.)
  6. REV 4, NOV. 20, 1983, SONIC IMPROVEMENT AS SHOWN.
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  100. (REV 98, NOV. 20, 1983, SONIC IMPROVEMENT AS SHOWN.)



- NOTES:
1. USE CAUTION WHEN SERVICING HIGH VOLTAGE COMPONENTS. CONTACT WITH STORED ENERGY EVEN WITH POWER OFF COULD BE LETHAL.
  2. ALL CAP IN  $\mu\text{F}$ ; RES 1/2W 5% UNLESS NOTED.
  3. MEASURE DC VOLTAGES THRU 1K OHM ISOLATION RESISTOR AT TEST POINTS TO PREVENT CAPACITIVE LOADING AND PARASITIC OSCILLATION. WHERE NOTED.
  4. V1 AND V2 ARE SELECTED FOR LOW NOISE AND MICROPHONICS. FOR BEST SONIC RESULTS USE ONLY ECC83A FOR V1, 2, 4, 5 AND AUDIO RESISTOR 800 $\Omega$  FOR V3, 6.
  5. REMOVE R27 FOR 10 DB GAIN REDUCTION. (LOCATED ON TERMINAL POSTS BELOW V4)
  6. REV 4, NOV 20, 1983, SONIC IMPROVEMENT AS SHOWN. (REV CIRCUIT BOARD Pkg2277)
  7. REV 5, DEC 8, 1983, SONIC AND STABILITY IMPROVEMENT: CI W5 20 P.F., R2 W3 1.82K.

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910079-10D  
SP8 PREAMPLIFIER

OPTIONAL ADDITIONAL  
CAPACITANCE TO  
SATISFY  
CARTRIIDGE INPUT  
REQUIREMENTS

MODE SWITCH  
1. MONO  
2. STEREO  
3. LEFT  
4. RIGHT

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

TAPE-  
INPUT  
SELECTOR  
1. MONO  
2. STEREO  
3. LEFT  
4. RIGHT

FRONT RIGHT  
CHANNEL  
TAPE MONITOR  
SWITCH

TO RIGHT  
CHANNEL

TO LEFT  
CHANNEL

TO COMMON

TO COMMON

TO COMMON

TO COMMON

SP-8 PARTS LIST

COMPONENT	QUAN.	DESCRIPTION	VALUE	RATING	TOL.	PART NO.	ARC
V1-2,4,5	4	EC683MR				32001300	
V3,6	2	6D8J8				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	
09,10,11,14,16	7	1N914		100V		30500900	
20,21							
ZD1-8	8	1N4756A Zener	47V	1W		30503200	
ZD10,14	2	1N5359A Zener	24V	5W		30503500	
ZD11	1	1N5390Z Zener Ref.	6.9V	5W		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	
05	1	2N5087 Trans	PNP			30003000	
06	1	D40K1 Trans	Dar-1 NPN			30005200	
07	1	T1P41 Trans	Dar-1 NPN			30005000	
Q12, 13	4	2N5462 FET	P-Chan			30005900	
RV1	1	Balance Control	100K	1/2W		45100525	
RV2	1	Gain Control	100K	1/4W		45100528	
VR1	1	MC7824C	24V	LogTaper	10%	31001200	
U1,2	2	TL071CP Op Amp		1A		31001900	
U3	2	LH555CN Timer				31000800	
PC1,2	1	VTL5C1 Photocoupler				34400100	
R2	2	Metal Film	49.9K	1/2W	1%	42499940	
R3,7,22,26	8	Metal Film	2.37K	1/4W	1%	42237302	
R4,23	4	Metal Film	1.82K	1/2W	1%	42182303	
R5,20,24,29	8	Wirewound	300K	0.2W	1%	43300501	
R6,25	4	Metal Film	1.8K	1W	1%	43182200	
R8	2	Wirewound	475K	1/2	1%	42475503	
R9,47,59,63	5	Wirewound	1.5K	2W	1%	43150302	
R10,60	3	Metal Film	40K	5W	3%	43400400	
R11,14-17,19	10	Metal Film	1.82Meg	1/2W	1%	42182603	
R12,18,62,85	7	Metal Film	100K	1/2W	1%	424664302	
R13	2	Metal Film	4.64K	1/4W	1%	42511202	
R21	2	Metal Film	511	1/4W	1%	42511202	
R27	2	Wirewound	1Meg	1/2W	1%	42100603	
R28	2	Metal Film	1.82K	1/2W	1%	42182303	
R31,32	2	Metal Film	2.70K	2W	1%	43270301	
R33,35-38	5	Carbon	6.98K	1/2W	1%	42698303	
R39	1	Carbon	270K	2W	10%	40270505	
R40	1	Carbon	100	1/2W	10%	40100203	
R41	1	Carbon	150K	1/2W	5%	41150503	
R42,44	2	Carbon	270K	1W	5%	41270504	
R43	1	Carbon	100K	1/4W	5%	41100502	
R46	1	Wirewound	220K	1/4W	5%	41220502	
R48	1	Metal Film	10	5W	5%	43100104	
R49	1	Carbon	4.99K	1/2W	1%	424999303	
R50	1	Carbon	470K	1/4W	5%	41470502	
R51	1	Carbon	27K	1/4W	5%	41270402	
R52	1	Metal Film	15Meg	1/2W	5%	41150703	
R53-55	3	Metal Film	332K	1/2W	1%	42332503	
		Carbon	348K	1/2W	1%	42348503	
		Carbon	10K	1/4W	5%	41100402	

SP-8 PARTS LIST

COMPONENT	QUAN.	DESCRIPTION	VALUE	RATING	TOL.	PART NO.	ARC
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	1.0K	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%	42100302	
R83	2	Wirewound	33K	5W	1%	42100303	
C1	2	Polystyrene	56pF	630V	1%	53360102	
C2,8	4	Polystyrene	20pF	630V	2.5%	53360102	
C3,18,28	4	Polystyrene	20pF	630V	5%	53200101	
C4,19	4	Polystyrene	2uF	450V	10%	53200101	
C5	2	Polystyrene	10uF	250V	10%	53200602	
C6	2	Polystyrene	2200pF	160V	2.5%	53220302	
C7,20,21,23	9	Polystyrene	750pF	160V	2.5%	53220302	
C9	2	Polystyrene	.22uF	100V	10%	53220506	
C10	2	Polystyrene	.47uF	450V	10%	53370509	
C11	1	Polystyrene	.01uF	1600V	10%	53100403	
C12,35	2	Electrolytic	1000uF	40V	10%	50100904	
C13	2	Polystyrene	.0027uF	200V	10%	53270301	
C14,15	2	Electrolytic	100uF	450V	10%	50100802	
C16	1	Electrolytic	10uF	150V	5%	50100703	
C17,31,40-43,45	12	Polystyrene	.015uF	150V	5%	51150404	
C22	1	Tantalum	33uF	10V	10%	51130700	
C27	2	Polystyrene	330pF	160V	2.5%	53330200	
C34	1	Polystyrene	1000pF	630V	5%	53100301	
F1	1	Fuse, Sto-Bio	0.6A	250V		34500220	
T1	1	Transformer	0.3A	250V		34500120	
OT1-4	4	Transformer		120V		60000402	
SW1	1	Transformer		100V		60000403	
SW2	1	AC Receptacle		240V		60000409	
SW3	1	Input Selector Sw.				23201300	
SW4	1	Tape Monitor Sw.				24001000	
SW5	1	Mode Switch	DPDT	Gold		24100400	
SW6	1	Mute-Operate Sw.	3Pole DPDT	Sposition		24100400	
SW8	1	On-Off Switch	DPDT	Gold		24100900	
RV1	1	Receptacle Sw.	DPDT	Silver		24100700	
J1-J16	16	Phono Jack	SPST	N.O.		24100700	

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