

PHOTOFACT[®] with

CIRCUITRACE[®]

For Supplier Address See PHOTOFACT Index

NOTE

Repair or adjustment of transmitter circuits must be under supervision of a person with first-or second-class radiotelephone license.

(Refer to FCC Rules and Regulations Part 95, Subpart C & D.)

The frequency of the transmitter should be checked periodically with a secondary frequency standard to insure proper and legal operation.

Best results will be obtained when adjusting the final RF output circuit if the antenna normally used is connected and the chassis is as nearly in the cabinet as possible.

Connect either 50-ohm dummy load or the normally used antenna system.



MODEL 2376B

ALIGNMENT INSTRUCTIONS

Suggested Alignment Tools:

ALL Transformers GC ELECTRONICS #5000, 8290

ALL Coils #9440

PAGE MODEL 2376B

RECEIVER

Connect an AC VTVM or AF Wattmeter across speaker voice coil.

Adjustments made with 14-volt DC input.

Adjust volume control to obtain suitable reading.

SIGNAL GENERATOR	GEN FREQ	CHANNEL	ADJUST	REMARKS
High side thru .01uF to base of Q3, low side to ground.	455kHz, 1000Hz, @ 30% modulation.	Any	T2,T3,T4, T5,T6,T7, T8	Set generator output low enough to prevent AGC limiting. Adjust for maximum.
High side thru .01uF to antenna jack, low side to ground.	27.115MHz, 1000Hz @ 30% modulation.	13	L1,L2,L4, T1	Set generator output low enough to prevent AGC limiting. Adjust for maximum.

RECEIVER ADJUSTMENTS

Connect an AC VTVM or AF Wattmeter across speaker voice coil.

These adjustments made with 14-volt DC input.

Adjust volume control to obtain a suitable reading.

SIGNAL GENERATOR	GEN FREQ	CHANNEL	ADJUST	REMARKS
S METER High side thru .01uF to antenna jack, low side to ground.	27.115MHz, 1000Hz, @ 30% modulation, output 100uV.	13	R32	Adjust for S 9 reading on panel meter.

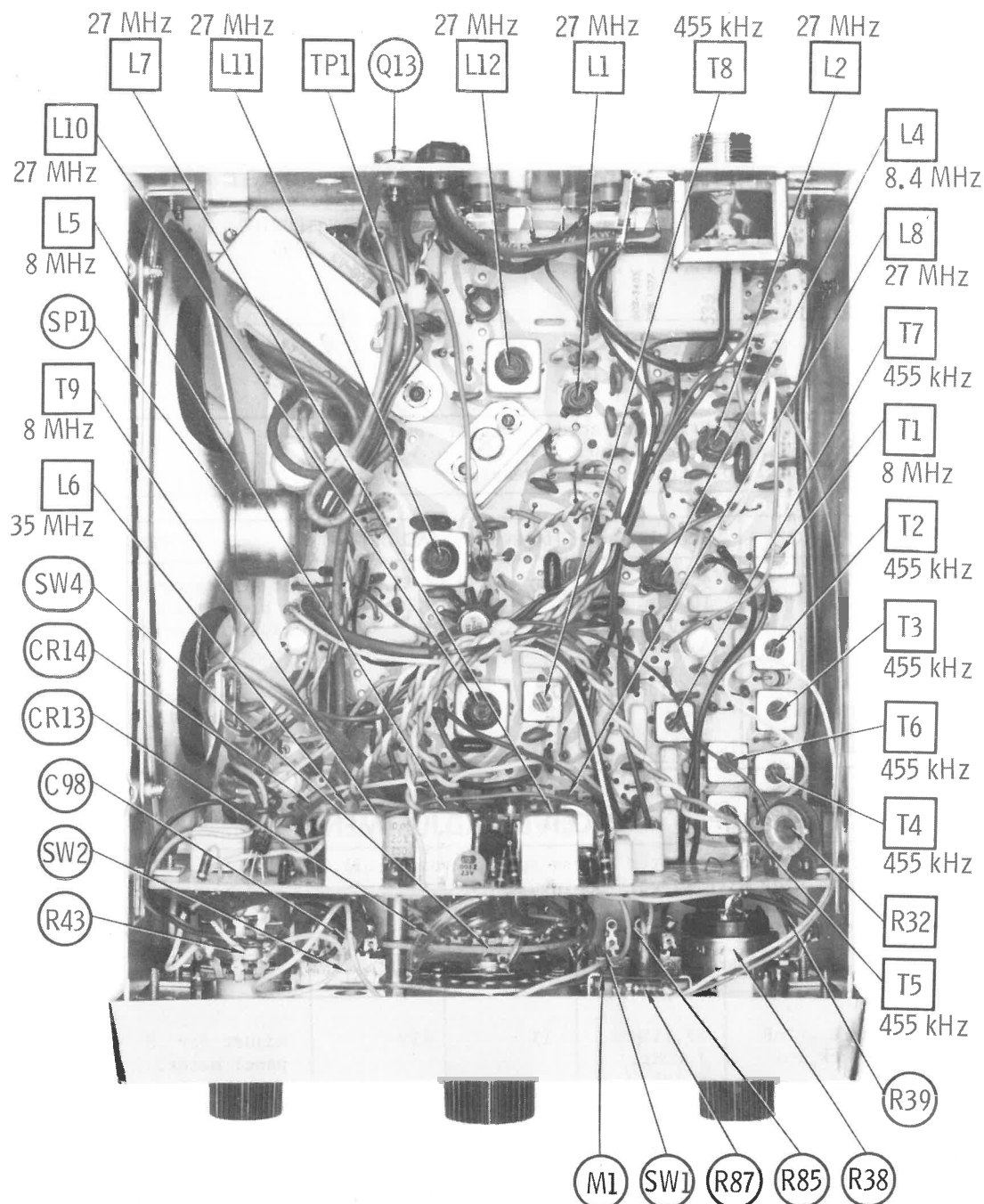
HOWARD W. SAMS & CO., INC. Indianapolis, Indiana 46206

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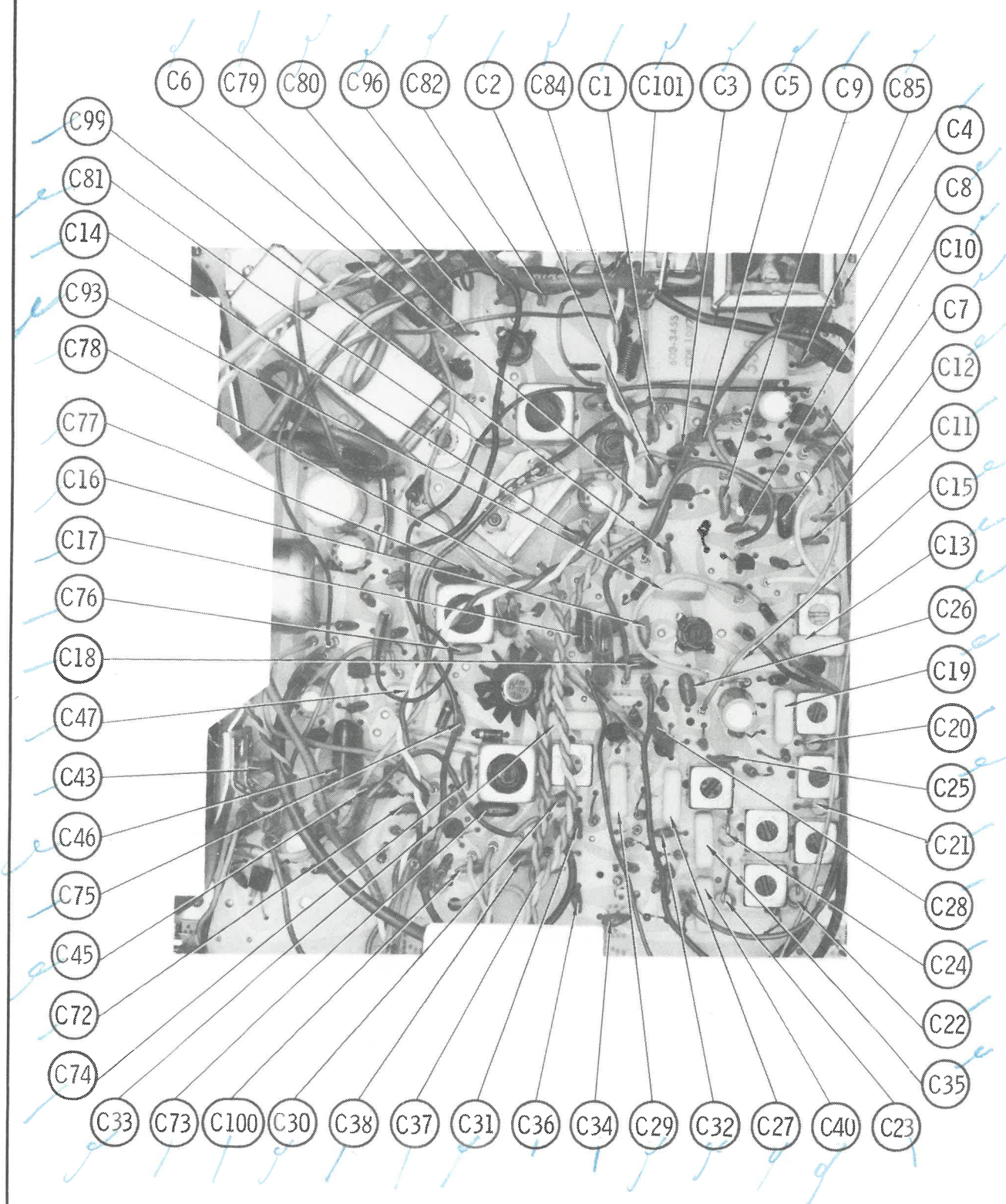
TRANSMITTER

Connect an RF Wattmeter or 50-ohm, 25-watt dummy load to antenna connector.
Adjustments made with 14-volt DC input.

INDICATOR	ADJUST	REMARKS
OSCILLATOR, MIXER, BUFFER, DRIVER, FINAL RF Wattmeter	T9,L5,L6, L7,L8,L10, L11,L12	Channel selector to Ch. 13. Key transmitter. Adjust for maximum.
FINAL INPUT POWER Remove jumper and connect 0-500DC milliammeter at TP1.	L12	Adjust for 5 watts (Max.).

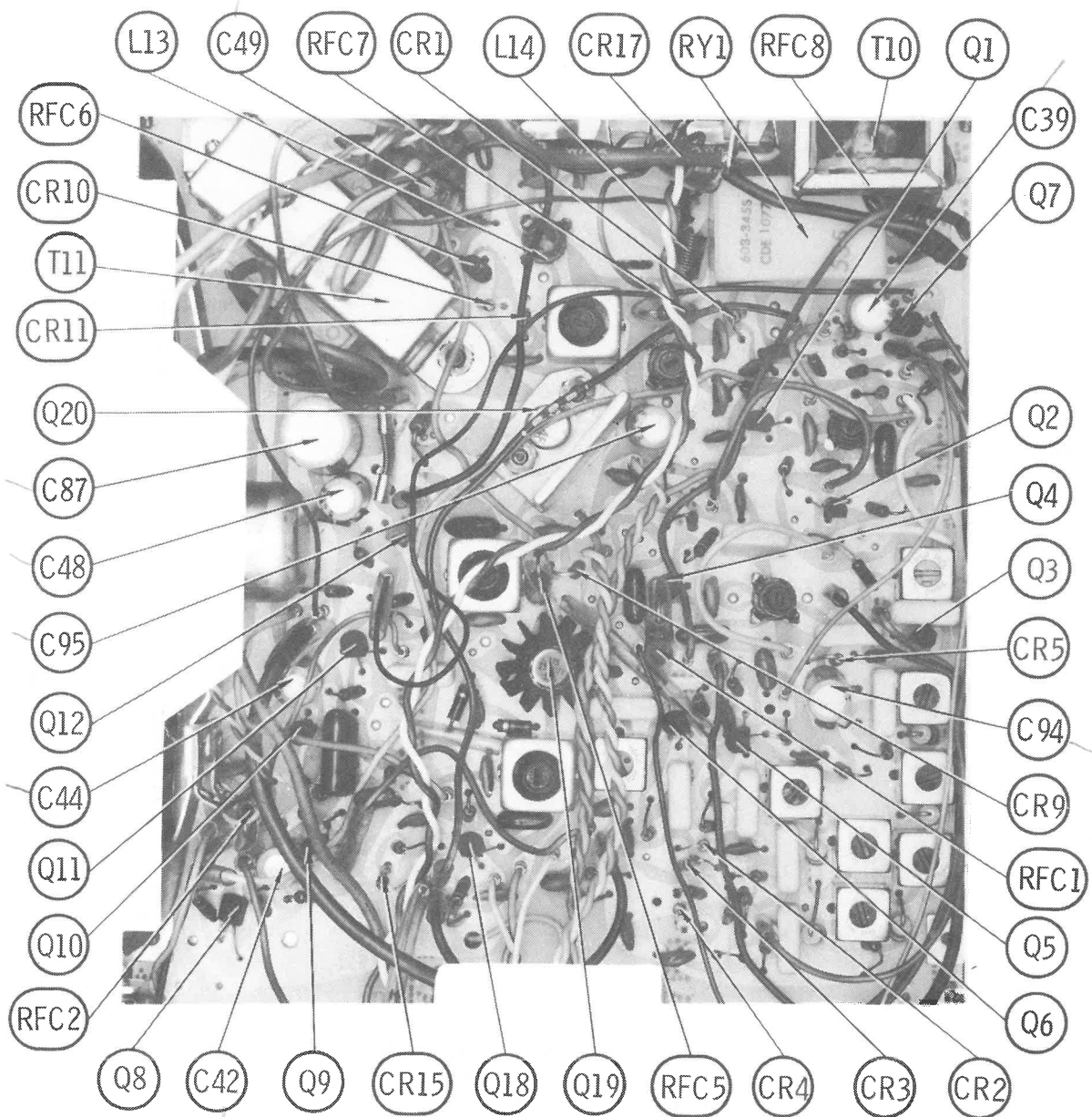


CHASSIS-TOP

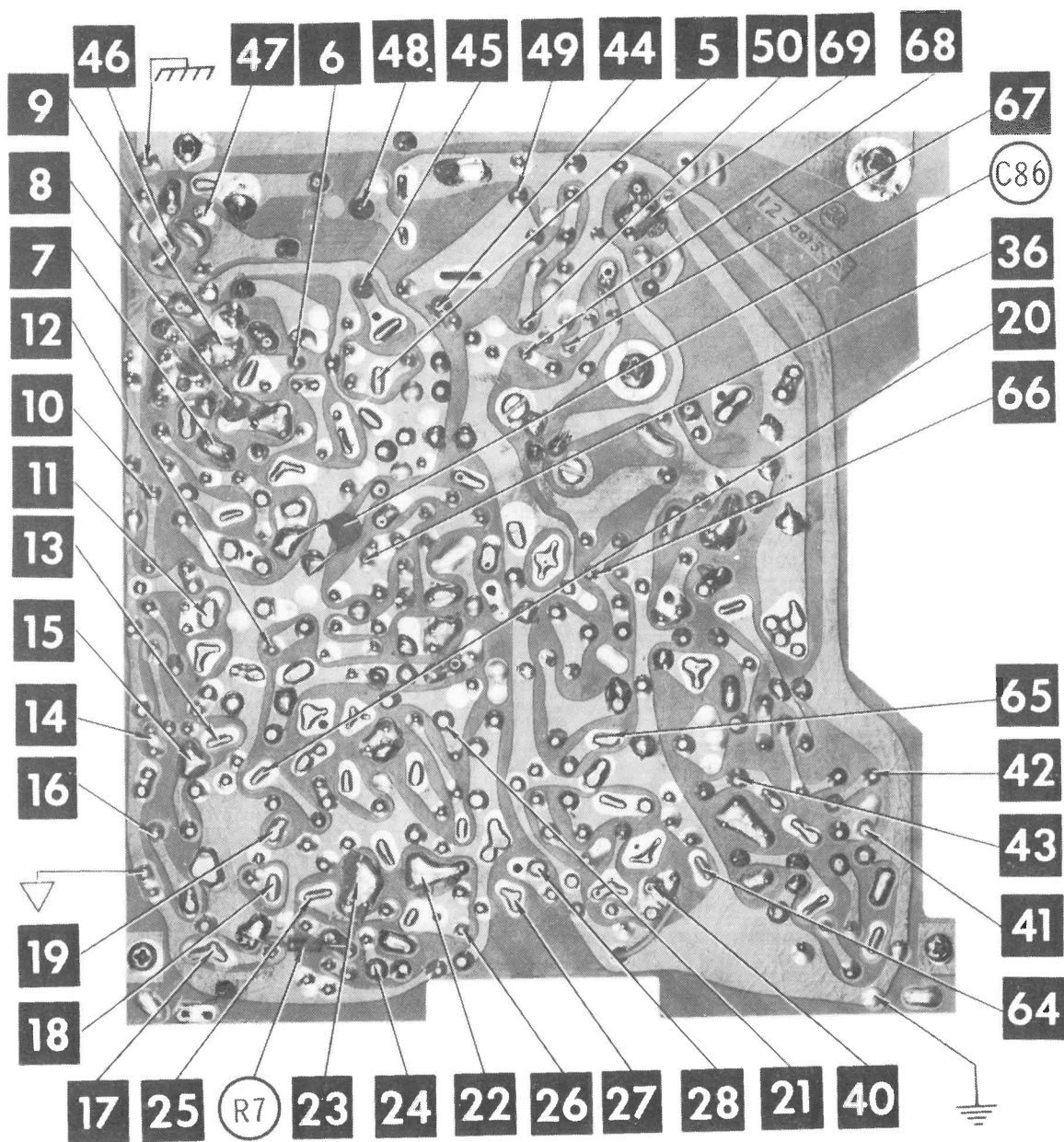


MAIN BOARD

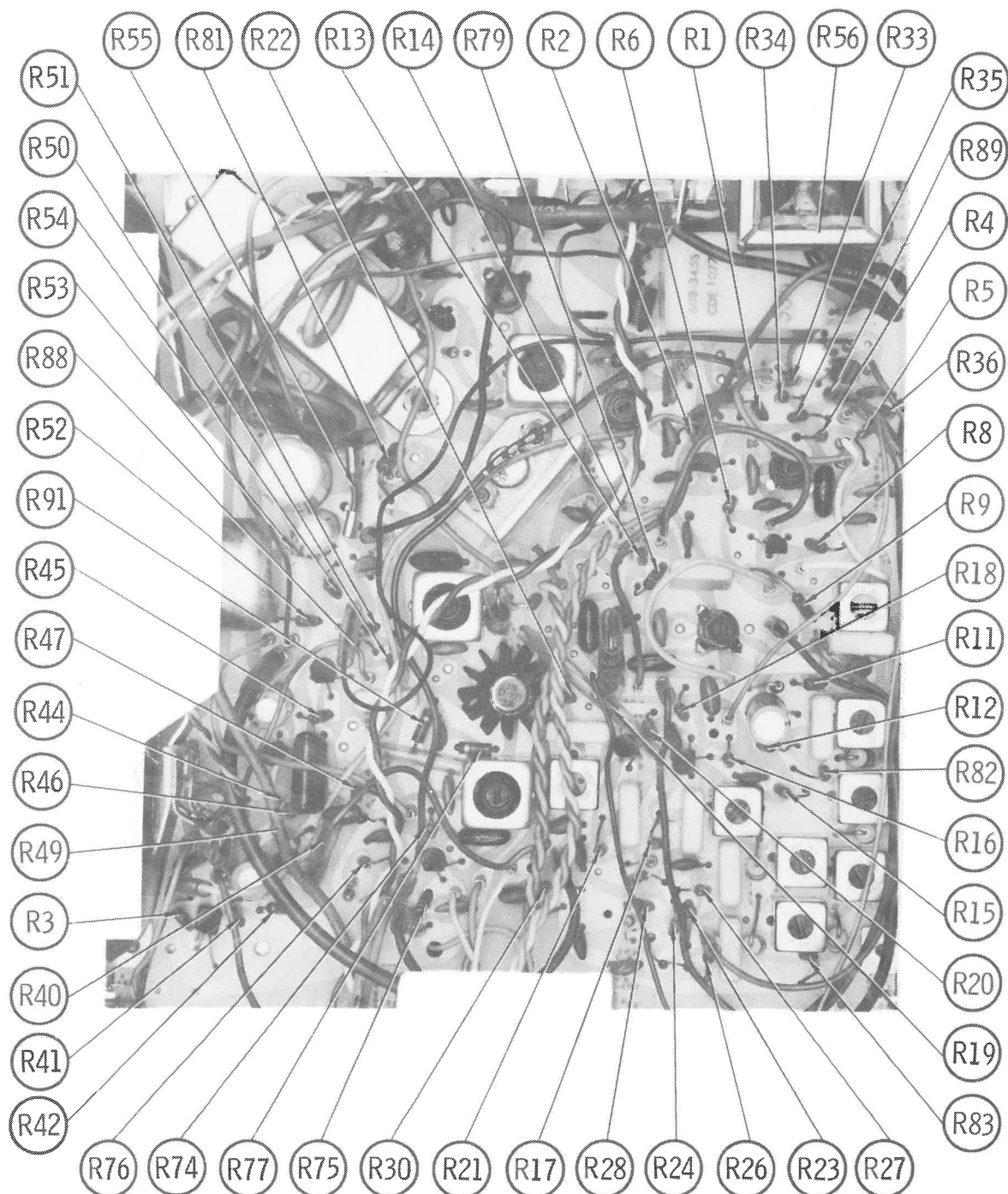




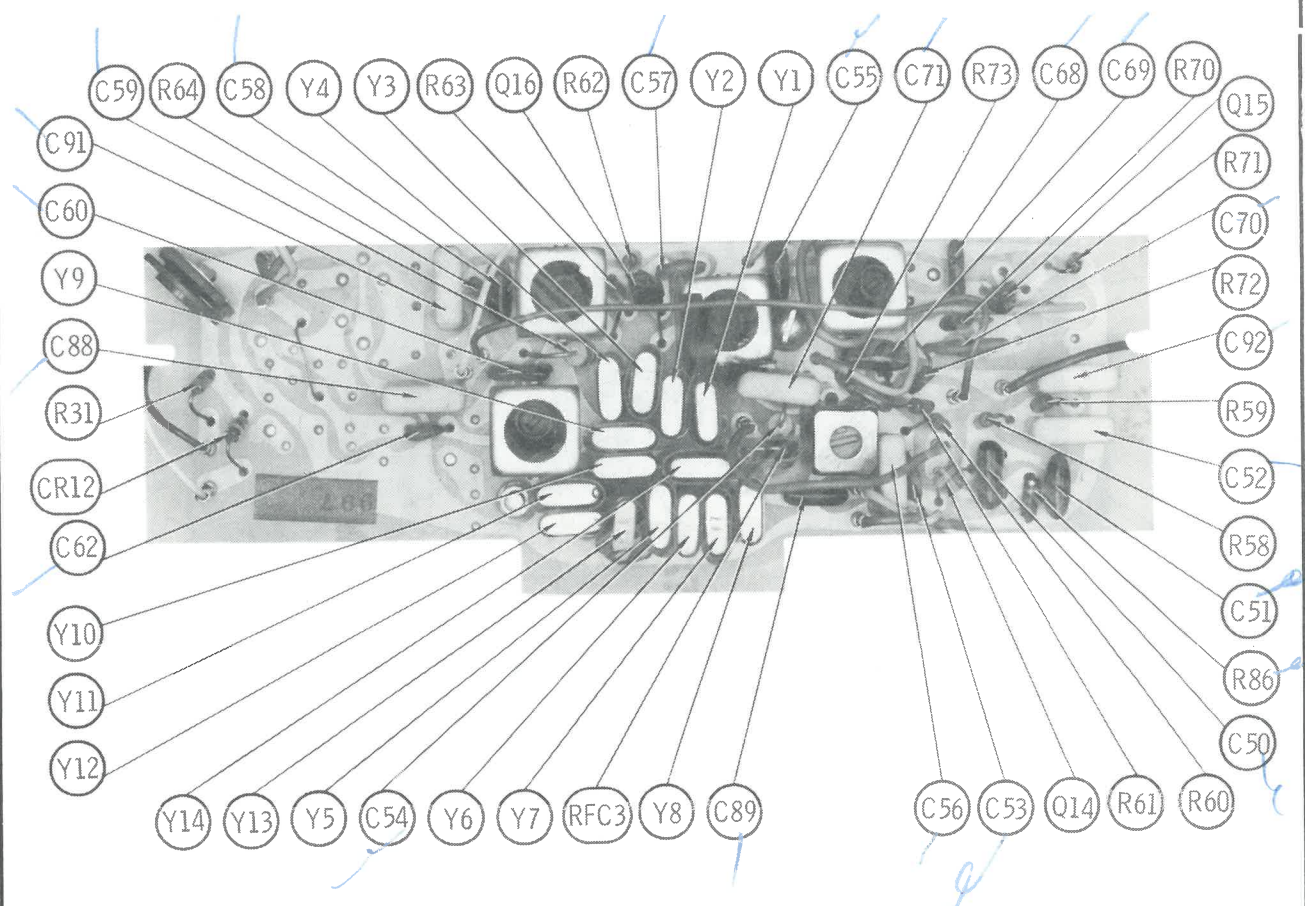
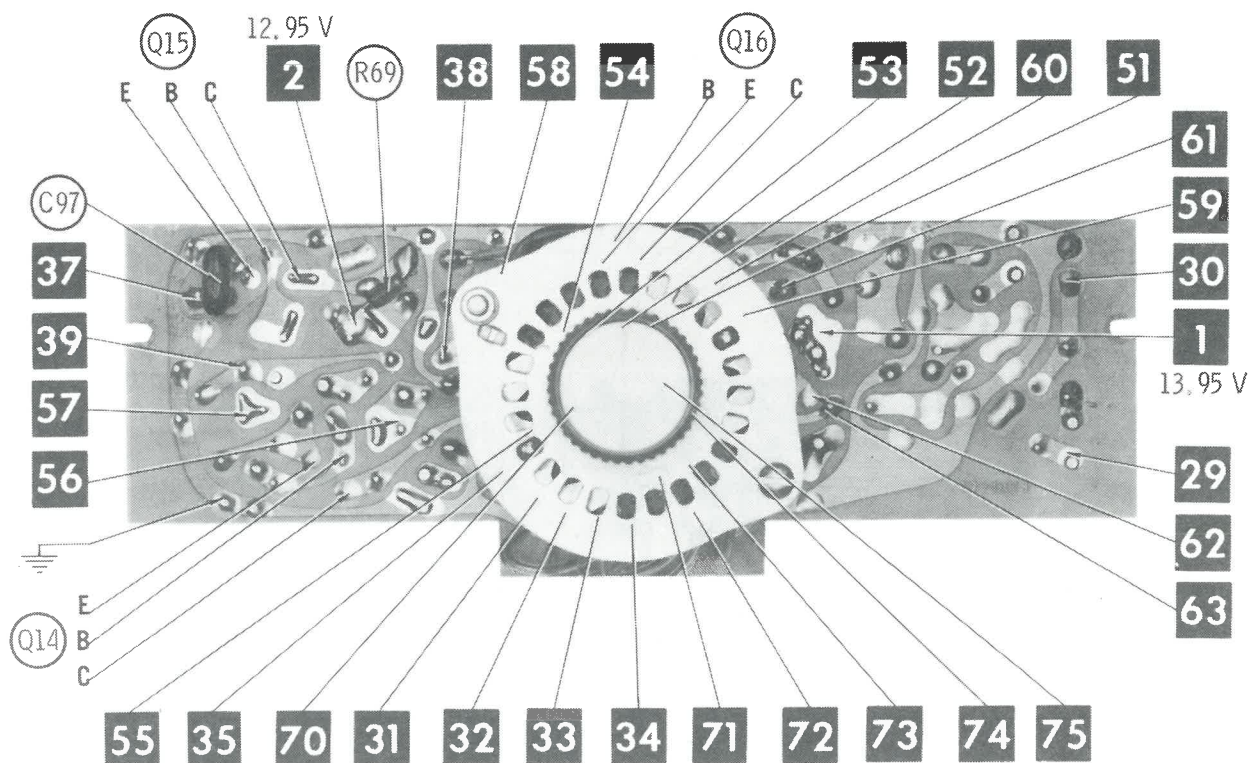
MAIN BOARD



MAIN BOARD



MAIN BOARD



SYNTHESIZER-SELECTOR BOARD

PARTS LIST AND DESCRIPTION

(When ordering parts, state Model, Part Number, and Description.)

WIRING DATA

General-use Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in 12 Colors 8524 (Stranded) Available in 12 Colors
Power Cord, 2-Wire	Use BELDEN No. 17106 (Plastic) or 17126 (Rubber) -6 feet 17109 (Plastic) or 17129 (Rubber) -9 feet
Shielded Antenna Lead	Use BELDEN No. 8214 Lowest-loss (RG-8/U Type) 8237 Low-loss (RG-8/U) 8240 (Solid) Miniature (RG-58/U) 8259 (Stranded) Miniature (RG-58A/U)
Coiled Microphone Cable	Use BELDEN No. 8497 3-Conductor (1 shielded for Press-to-Talk) Neoprene

SEMICONDUCTORS (Select replacement transistor for best results)

ITEM No.	TYPE No.	MFR. PART No.	REPLACEMENT DATA							
			GENERAL ELECTRIC PART No.	MALLORY PART No.	MOTOROLA PART No.	RAYTHEON PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.	WORKMAN PART No.
CR1	1N295X	13-0004	1N34AS	PTC207	HEPR9134	RE 47	SK3087	RT-200	ECG109	1N34A
CR2	1N295X	13-0004	1N34AS	PTC207	HEPR9134	RE 47	SK3087	RT-200	ECG109	1N34A
CR3	1N295X	13-0004	1N34AS	PTC207	HEPR9134	RE 47	SK3087	RT-200	ECG109	1N34A
CR4	1N3600	13-0003	GE-300	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177	D200
CR5	(10 Volt Zener)	13-0002	GEZD-10	PTC506	HEPZ0413	RE 115	SK3061	RT-241	ECG140	Z1210
CR9	1N4753 (36 Volt Zener)	13-0017		ZB36A	HEPZ0427				ECG5085	
CR10	1N3600	13-0003	GE-300	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177	D200
CR11	1N4760A (68 Volt 5% Zener)	13-0106		ZB68B					ECG5092	
CR12	1N295X	13-0004	1N34AS	PTC207	HEPR9134	RE 47	SK3087	RT-200	ECG109	1N34A
CR13	1N3600	13-0003	GE-300	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177	D200
CR14	1N3600	13-0003	GE-300	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177	D200
CR15	1N3600	13-0003	GE-300	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177	D200
CR17	1N4001	13-0050	GE-504A	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116	5A4D
Q1	MPS6511-S		GE-210	PTC121	HEPS0020	RE 10	SK3122	RT-113	ECG108	TR-24
Q2	MPS6507	13-0065(1)	GE-20	PTC115	HEPS0020	RE 10	SK3122	RT-108A	ECG108	TR-24
Q3	MPS3693	13-0062	GE-210	PTC121	HEPS0030	RE 13	SK3018	RT-172	ECG123A	TR-21
Q4	MPS3693	13-0062-1(1)	GE-210	PTC121	HEPS0030	RE 13	SK3018	RT-172	ECG123A	TR-21
Q5	MPS6534M	13-0062	GE-21	PTC103	HEPS0019	RE 26	SK3138	RT-115	ECG159	TR-20
Q6	MPS6134	13-0061(1)	GE-21	PTC103	HEPS0019	RE 26	SK3138	RT-115	ECG159	TR-20
Q7	MPS3693	13-0062	GE-210	PTC121	HEPS0030	RE 13	SK3018	RT-172	ECG123A	TR-21
Q8	MPS3693	13-0062-1(1)	GE-210	PTC121	HEPS0030	RE 13	SK3018	RT-172	ECG123A	TR-21
Q9	MPS6514	13-0022	GE-17	PTC101	HEPS0015	RE 13	SK3122	RT-172	ECG123A	TR-21
Q10	MPS6534M	13-0022	GE-21	PTC103	HEPS0019	RE 26	SK3138	RT-115	ECG159	TR-20
Q11	MPS6134	13-0061(1)	GE-21	PTC103	HEPS0019	RE 26	SK3138	RT-115	ECG159	TR-20
Q12	MPS3693	13-0062	GE-210	PTC121	HEPS0030	RE 13	SK3018	RT-172	ECG123A	TR-21
Q13	MPS6514	13-0022	GE-17	PTC101	HEPS0015	RE 13	SK3122	RT-172	ECG123A	TR-21
Q14	MPS3694	13-0063	GE-210	PTC121	HEPS0025	RE 13	SK3124	RT-172	ECG123A	TR-21
Q15	MPS6534M	13-0063	GE-21	PTC103	HEPS0019	RE 26	SK3138	RT-115	ECG159	TR-20
Q16	MPS6134	13-0061(1)	GE-21	PTC103	HEPS0019	RE 26	SK3138	RT-115	ECG159	TR-20
Q17	SJ2095	13-0014	GE-40	PTC112	HEPS5012	RE 34	SK3026	RT-190	ECG175	TR-57
Q18	MPS3693	13-0062	GE-210	PTC121	HEPS0030	RE 13	SK3018	RT-172	ECG123A	TR-21
Q19	MPS3693	13-0062	GE-210	PTC121	HEPS0030	RE 13	SK3018	RT-172	ECG123A	TR-21
Q20	MPS6511-S		GE-210	PTC121	HEPS0020	RE 10	SK3122	RT-113	ECG108	TR-24
Q21	MPS6507	13-0065(1)	GE-20	PTC115	HEPS0020	RE 10	SK3122	RT-108A	ECG108	TR-24
Q22	MPS3646	13-0064	GE-219	PTC179	HEPS3013	RE 79	SK3047	RT-182	ECG195A	TR-64
Q23		13-0079	GE-46	PTC158	HEPS3001	RE 79	SK3048	RT-182	ECG195A	TR-65
Q24		13-0079	GE-46	PTC158	HEPS3001	RE 79	SK3048	RT-182	ECG195A	TR-65

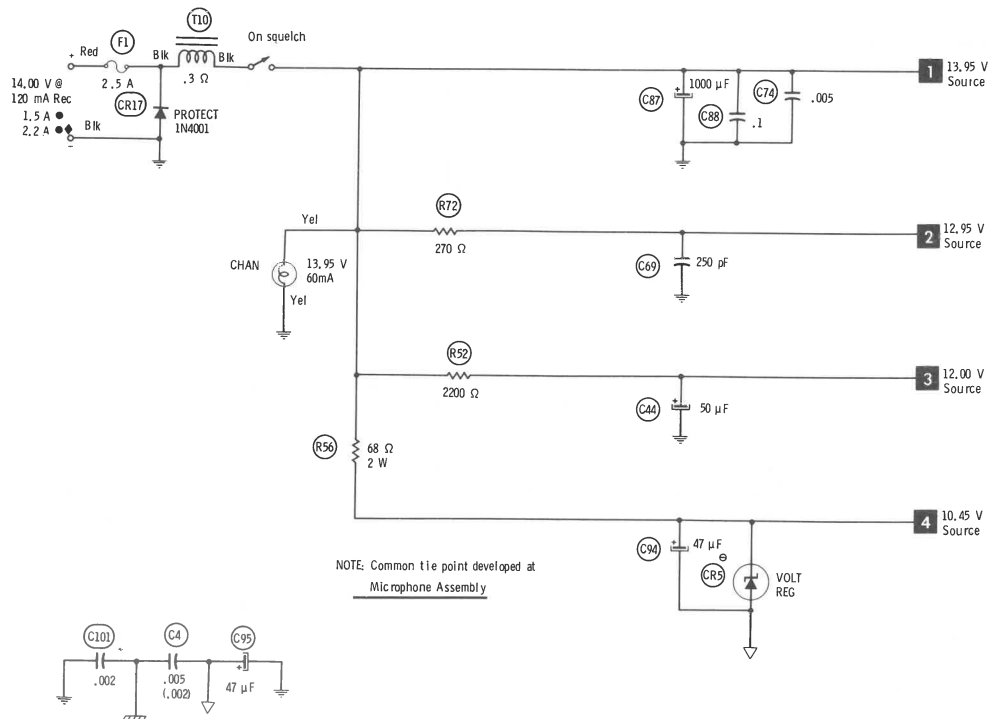
PAGE MODEL 2376B

(1) Used In Some Versions.

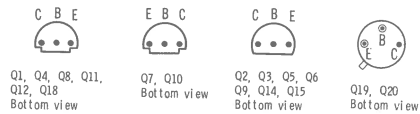
ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA			
		MFR. PART No.	CORNEILL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.
C39	50 15V	190129	PC50-16	VTT47	TVA-1150
C42	50 15V	190129	PC50-16	VTT47	TVA-1150
C44	50 15V	190129	PC50-16	VTT47	TVA-1150
C48	50 15V	190129	PC50-16	VTT47	TVA-1150
C49	2 25V	190049	PC2-100	VTT2R2A50	TVA-1201
C87	1000 15V	190052	PC1000-16	VTT1000L16	EV-1260
C94	50 15V	190129	PC50-16	VTT47	TVA-1150
C95	50 15V	190129	PC50-16	VTT47	TVA-1150
C98	50 15V	190129	PC50-16	VTT47	TVA-1150

(CONTINUED ON PAGE 38)



Transistor Terminal Guide



✗ Circuitry not used in some versions

--- Circuitry used in some versions

⊙ See parts list

* Nominal value

⊥ Ground

Chassis

▽ Common tie point

Measurements with switching as shown unless noted:

● Transmit ◆ 100% modulation

Supply voltage maintained as shown at input.

Voltages measured with digital meter, no signal.

Controls adjusted for normal operation.

Arrow at control indicates direction of advance.

Terminal identification may not be found on unit.

Resistors are 1/2W or less, 5% unless noted.

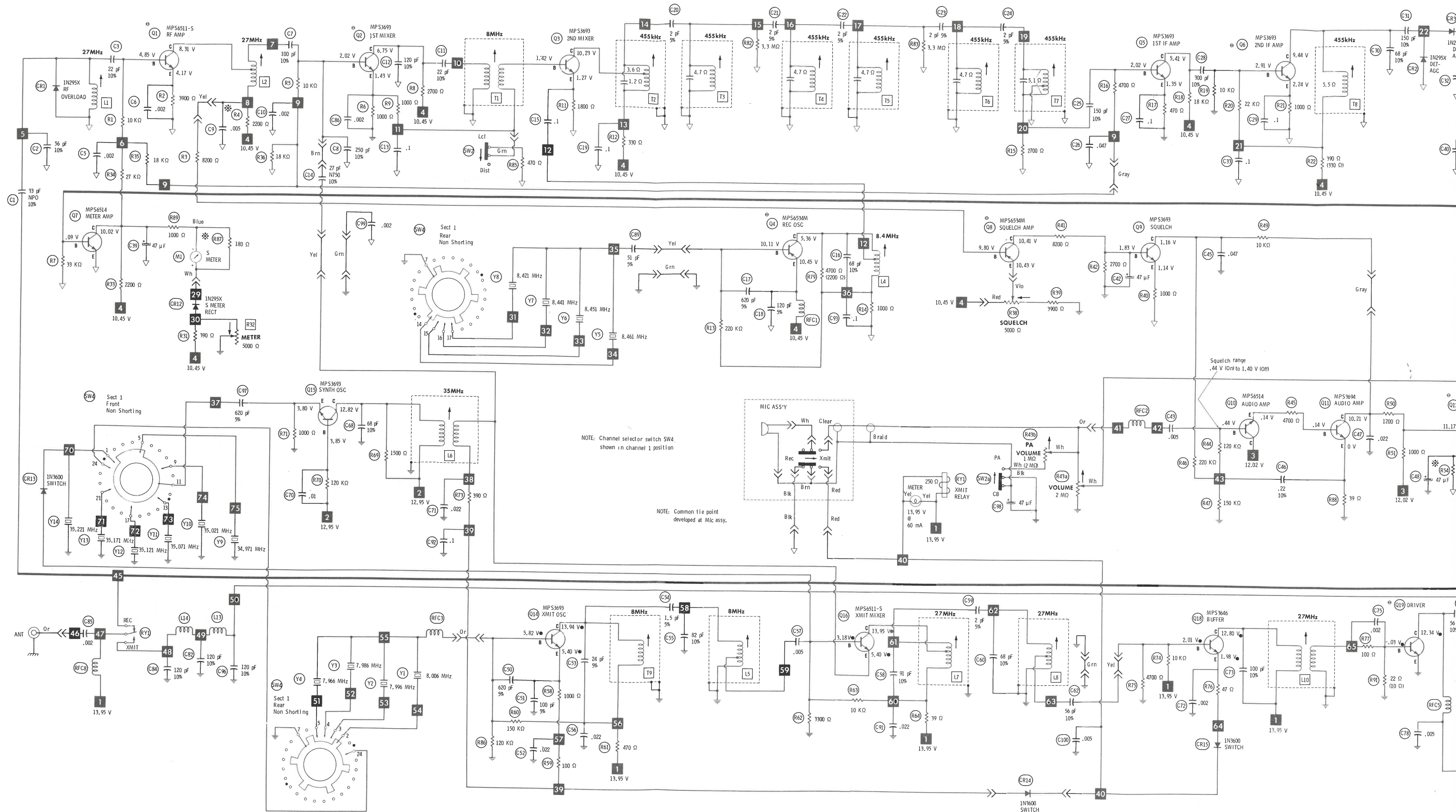
Value in () used in some versions.

A PHOTOFAC STANDARD NOTATION SCHEMATIC

WITH CIRCUITRACE®

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Chan	Crystal Complement	Chan	Crystal Complement	Chan	Crystal Complement	Chan	Crystal Complement
1	Y9, Y1, Y5	7	Y10, Y3, Y7	13	Y12, Y1, Y5	19	Y13, Y3, Y7
2	Y9, Y2, Y6	8	Y10, Y4, Y8	14	Y12, Y2, Y6	20	Y13, Y4, Y8
3	Y9, Y3, Y7	9	Y11, Y1, Y5	15	Y12, Y3, Y7	21	Y14, Y1, Y5
4	Y9, Y4, Y8	10	Y11, Y2, Y6	16	Y12, Y4, Y8	22	Y14, Y2, Y6
5	Y10, Y1, Y5	11	Y11, Y3, Y7	17	Y13, Y1, Y5		
6	Y10, Y2, Y6	12	Y11, Y4, Y8	18	Y13, Y2, Y6	23	Y14, Y4, Y8



PARTS LIST AND DESCRIPTION (CONTINUED)
(When ordering parts, state Model, Part Number, and Description.)

CAPACITORS

ITEM No.	RATING	MFG. PART No.	REPLACEMENT DATA			
			CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	33 10% NPO		DTZ-33	NP033	CN0433	10TCC-Q33
C2	56 10%				CN0456	10TCC-Q56
C3	22 10%		DTZ-22	NP022	CN0422	10TCC-Q22
C4	.005		DC-502	GP5000	TA250	2SS-D50
C5	.002		DD-202	GP2000	GP220	2SS-D20
C6	.002		DD-202	GP2000	GP220	2SS-D20
C7	100 10%			CD10FD101J03		424MC1000J501
C8	250 10%			CD10FD251J03		
C9	.005		DC-502	GP5000	TA250	2SS-D50
C10	.002		DD-202	GP2000	GP220	2SS-D20
C11	22 10%		DTZ-22	NP022	CN0422	10TCC-Q22
C12	120 10%		DTZ-120		CN0312	10TCC-T12
C13	.1		DC-104	MGP1	MAG5001	TG-P10
C14	27 10% N750				CN7427	10TCU-Q27
C15	.1		DC-104	MGP1	MAG5001	TG-P10
C16	68 10%		DTZ-68	NP068	CN0468	10TCC-Q68
C17	620 5%			CD19FD621J03	SX362	424ME6200J501
C18	120 5%			CD10FD121J03	SX312	424MC1200J501
C19	.1		DC-104	MGP1	MAG5001	TG-P10
C20	2 5%		DTZ-2R2	NP02P2	CN0522	10TCC-V22
C21	2 5%		DTZ-2R2	NP02P2	CN0522	10TCC-V22
C22	2 5%		DTZ-2R2	NP02P2	CN0522	10TCC-V22
C23	2 5%		DTZ-2R2	NP02P2	CN0522	10TCC-V22
C24	2 5%		DTZ-2R2	NP02P2	CN0522	10TCC-V22
C25	150 10%		DTZ-150		CN0315	10TCC-T15
C26	.047			DPMS2S47	EWF1A147	1PB-S47
C27	.1		DC-104	MGP1	MAG5001	TG-P10
C28	300 10%		DD-301	GP300	GP330	10TS-T30
C29	.1		DC-104	MGP1	MAG5001	TG-P10
C30	68 10%		DTZ-68	NP068	CN0468	10TCC-Q68
C31	150 10%		DTZ-150		CN0315	10TCC-T15
C32	600 10%			CD19FD621J03	SX362	424ME6200J501
C33	.1		DC-104	MGP1	MAG5001	TG-P10
C34	.001		DD-102	GP1000	GP210	2SS-D10
C35	.1		DC-104	MGP1	MAG5001	TG-P10
C36	250 10%			CD10FD251J03		424ME3600J501
C37	250 10%			CD10FD251J03		TG-P10
C38	360 10%			CD15FD361J03	SX336	2SS-D50
C40	.1		DC-104	MGP1	MAG5001	1PB-S47
C43	.005		DC-502	GP5000	TA250	1PB-P22
C45	.047			DPMS2S47	EWF1A147	2SS-S20
C46	.22 10%			DPMS2P22	EWF1A022	2SS-S20
C47	.022		DC-203		MAG5012	424ME6200J501
C50	620 10%			CD19FD621J03	SX362	424MC1000J501
C51	100 5%			CD10FD101J03	SX310	2SS-S20
C52	.022		DC-203		MAG5012	MS-424
C53	24 5%			CD6ED240J03	SX424	10TCC-V15
C54	1.5 5%		DTZ-1R5	NP01P5	CN0515	424MC8200J501
C55	82 10%			CD10ED820J03	SX482	2SS-D20
C56	.022		DD-202	GP2000	GP220	2SS-D50
C57	.005		DC-502	GP5000	TA250	424MC9100J501
C58	91 10%			CD10FD910J03	SX491	10TCC-V22
C59	2 5%		DTZ-2R2	NP02P2	CN0522	424MC680J501
C60	68 10%			CD6ED680J03	SX468	10TCC-Q56
C62	56 10%				CN0456	424MC680J501
C68	68 10%			CD6ED680J03	SX468	
C69	250 10%			CD10FD251J03		
C70	.01		DC-103	GP10000	MAG5011	2SS-S10
C71	.022		DC-203		MAG5012	2SS-S20
C72	.002		DD-202	GP2000	GP220	2SS-D20
C73	100 10%			CD10FD101J03	SX310	424MC1000J501
C74	.005		DC-502	GP5000	TA250	2SS-D50
C75	.002		DD-202	GP2000	GP220	2SS-D20
C76	56 10%				CN0456	10TCC-Q56
C77	160 10%			CD7FD161J03	SX316	424MC1600J501
C78	.005		DC-502	GP5000	TA250	2SS-D50
C79	.002		DD-202	GP2000	GP220	2SS-D20
C80	.022		DC-203		MAG5012	2SS-S20
C81	120 10%		DTZ-120		CN0312	10TCC-T12
C82	120 10%		DTZ-120		CN0312	10TCC-T12

PARTS LIST AND DESCRIPTION (CONTINUED)
(When ordering parts, state Model, Part Number, and Description.)

CAPACITORS(cont)

ITEM No.	RATING	MFG. PART No.	REPLACEMENT DATA			
			CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.
C84	120 10%			CD10FD121J03	SX312	424MC1200J501
C85	.002		DD-202	GP2000	GP220	2SS-D20
C86	.002		DD-202	GP2000	GP220	2SS-D20
C88	.1		DC-104	MGP1	MAG5001	TG-P10
C89	51 5%			CD6ED510J03		424MC5100J501
C91	.022		DC-203		MAG5012	2SS-S20
C92	.1		DC-104	MGP1	MAG5001	TG-P10
C93	.1		DC-104	MGP1	MAG5001	TG-P10
C96	120 10%		DTZ-120		CN0312	10TCC-T12
C97	620 5%			CD19FD621J03	SX362	424ME6200J501
C99	.002		DD-202	GP2000	GP220	2SS-D20
C100	.005		DC-502	GP5000	TA250	2SS-D50
C101	.002		DD-202	GP2000	GP220	2SS-D20

CONTROLS (All wattages 1/2 watt, or less, unless listed)

ITEM No.	FUNCTION	RESIST-ANCE	REPLACEMENT DATA				
			MFG. PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	MALLORY PART No.	TRW PART No.
R32	S Meter	5000	14-0007	T-5000	C-502	MTC53L1	X201R502B
R38	Squelch/Switch	5000	15-0034	F3-5000 (10) SF102, KR1	NP-5000-V (10), UP-B-400, HWE-12	RU53R (10), SN1125, US41	BU11, CF34, SS1, GC
R43a	Volume	2 meg	15-0055	F2-2Meg (10)		P26A (10),	BU11, CF27, CR26,
b	PA Volume	1 meg		R2-1Meg, SF102, CPL2		RU16A, CS3500	SS1, SS7A, DC1

(11) Alter bushing to meet requirements.

COILS (RF-IF)

ITEM No.	FUNCTION	REPLACEMENT DATA			REMARKS
		PART No.	OTHER IDENTIFICATION	MILLER PART No.	
L1	Rec Ant (27MHz)	17-0019			
L2	Rec RF (27MHz)	17-0018			
L4	Rec Osc (8.4MHz)	17-0017			
L5	Harmonic Suppressor (8MHz)	17-0017			
L6	Synth Osc (35MHz)	17-0028			
L7	Xmit Mixer (27MHz)	17-0032			
L8	Harmonic Suppressor (27MHz)	17-0025			
L10	Xmit Buffer (27MHz)	17-0028			
L11	Xmit Driver (27MHz)	17-0021			
L12	Final Tank (27MHz)	17-0020			
L13	Pi Filter (27MHz)	17-0020			
L14	Pi Filter	17-0015			
RFC1	RF Choke (22MHz)	17-0016			
RFC2	RF Choke (22MHz)	17-0016			
RFC3	RF Choke (4.7uH)	17-0041			
RFC4	RF Choke (3.3mH)	17-0026			
RFC5	RF Choke (3.3mH)	17-0026			
RFC6	RF Choke (3.3mH)	17-0026			
RFC8	RF Choke (3.3MHz)	17-0026			
T1	Rec Mixer (8MHz)	16-0007			
T2	IF (455kHz)	16-0005			
T3	IF (455kHz)	16-0003			
T4	IF (455kHz)	16-0003			
T5	IF (455kHz)	16-0003			
T6	IF (455kHz)	16-0003			
T7	IF (455kHz)	16-0006			
T8	IF (455kHz)	16-0013			
T9	Xmit Osc (8MHz)	16-0007			

RFC7 RF Choke (3.3mH) 17-0026

PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000~)	MFGR. PART No.	THORDARSON PART No.	TRIAD PART No.	
T10	2.2A	.3	4mH	16-0021			

TRANSFORMER (Audio Output)

ITEM No.	IMPEDANCE		REPLACEMENT DATA			NOTES
	PRI.	SEC.	MFGR. PART No.	THORDARSON PART No.	TRIAD PART No.	
T11	3.2	3.2	16-0016			

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		MFGR. PART No.	QUAM PART No.	
SP	2" x 6" PM 3.2 ohms	22-0007	26A07	

FUSE DEVICES

ITEM No.	DESCRIPTION	REPLACEMENT DATA						
		PART No.		BUSS PART No.		LITTELFUSE PART No.		WORKMAN PART No.
		DEVICE	HOLDER	DEVICE	HOLDER	DEVICE	HOLDER	DEVICE
F1	2.5 A Fast acting	15-0016		AGC 2 1/2	HDJ	312025	150145	FG2 1/2-2

CRYSTALS

ITEM No.	CRYSTAL FREQUENCY IN MHz	MFGR. PART No.	CTS KNIGHTS PART No.	CHANNEL	ITEM No.	CRYSTAL FREQUENCY IN MHz	MFGR. PART No.	CTS KNIGHTS PART No.	CHANNEL
Y1	8.006	20-0006-5	GBSSW8.006	1,5,9,13,17,21	Y8	8.421	20-0007-8	GC90W8.421	4,8,12,16,20,23
Y2	7.996	20-0006-6	GBSSW7.996	2,6,10,14,18,22	Y9	34.971	20-0008-7	GASSW34.971	1,2,3,4
Y3	7.986	20-0006-7	GBSSW7.986	3,7,11,15,19	Y10	35.021	20-0008-8	GASSW35.021	5,6,7,8
Y4	7.966	20-0006-8	GBSSW7.966	4,8,12,16,20,23	Y11	35.071	20-0008-9	GASSW35.071	9,10,11,12
Y5	8.461	20-0007-5	GC90W8.461	1,5,9,13,17,21	Y12	35.121	20-0008-10	GASSW35.121	13,14,15,16
Y6	8.451	20-0007-6	GC90W8.451	2,6,10,14,18,22	Y13	35.171	20-0008-11	GASSW35.171	17,18,19,20
Y7	8.441	20-0007-7	GC90W8.441	3,7,11,15,19	Y14	35.221	20-0008-12	GASSW35.221	21,22,23

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
M1	Meter	36-0007	S
RL1	Relay	21-0008	Rec/Xmit
SW1	Switch	15-0010-2	Loc/Dist
SW2	Switch	15-0010-2	CB/PA
SW4	Switch	15-0035	Channel Selector
	Microphone Assembly	22-0016	