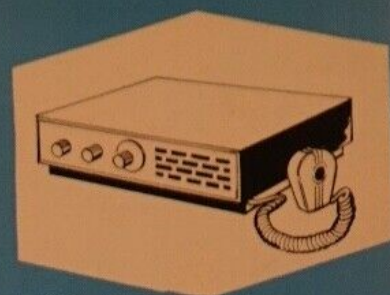


SAMS PHOTOFACT[®] CB RADIO SERIES



CB-31
31
DECEMBER 1970



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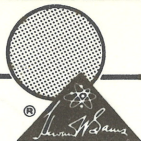
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HOWARD W. SAMS & CO., INC. Indianapolis, Indiana



PHOTOFACT[®] with

CIRCUITRACE[®]

For Supplier Address See PHOTOFACT Index

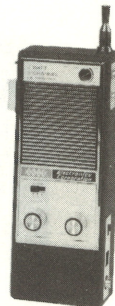
NOTE

ONLY THOSE PERSONS PROPERLY LICENSED ARE PERMITTED TO MAKE REPAIRS OR ADJUSTMENTS WHICH MAY RESULT IN ILLEGAL OPERATION. (REFER TO FCC RULES AND REGULATIONS PART 95, SUBPARTS 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.



ROSS MODEL RE-025

ALIGNMENT INSTRUCTIONS

Suggested Alignment Tools:

	GENERAL CEMENT	WALSCO
A1, A2, A3, A5, A7 thru A11	#8868, 9089	#2541, 2587
A4, A6	#8606L, 9440	#2501, 2544

ROSS MODEL RE-025

RECEIVER

Connect an AC VTVM across speaker voice coil. Set Volume control fully clockwise and Squelch control fully counterclockwise.

SIGNAL GENERATOR	CHANNEL	ADJUST	REMARKS
High side thru .01 mfd to base of Q3 (Mixer), low side to chassis. Tune to 455KC (Mod).	Any	A1, A2 A3	Adjust for maximum.
High side thru .01 mfd to Ext. Antenna connector, low side to chassis. Tune 20 27.085MC (Mod).	11	A4, A5, A6	Adjust for maximum.

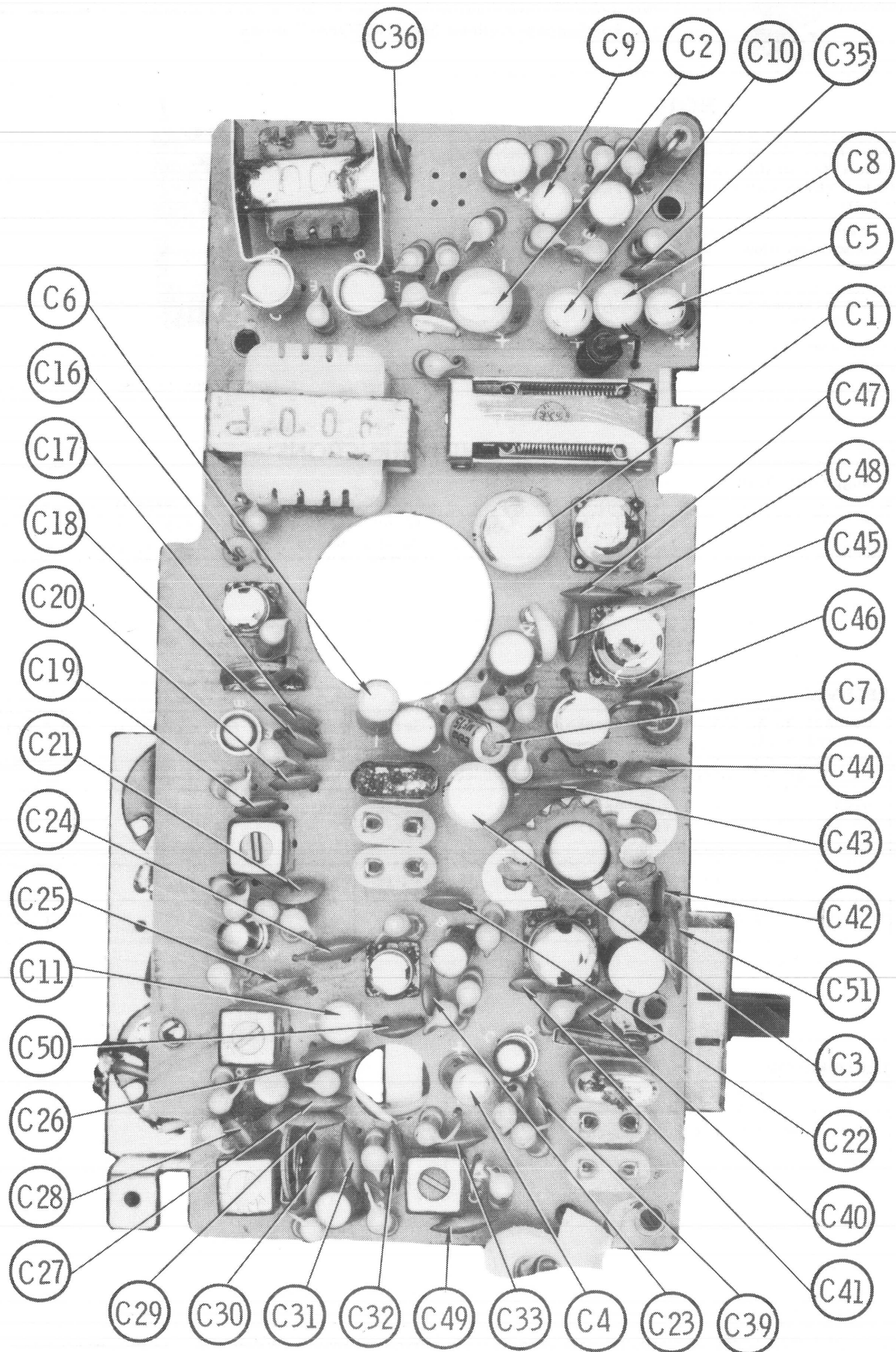
TRANSMITTER

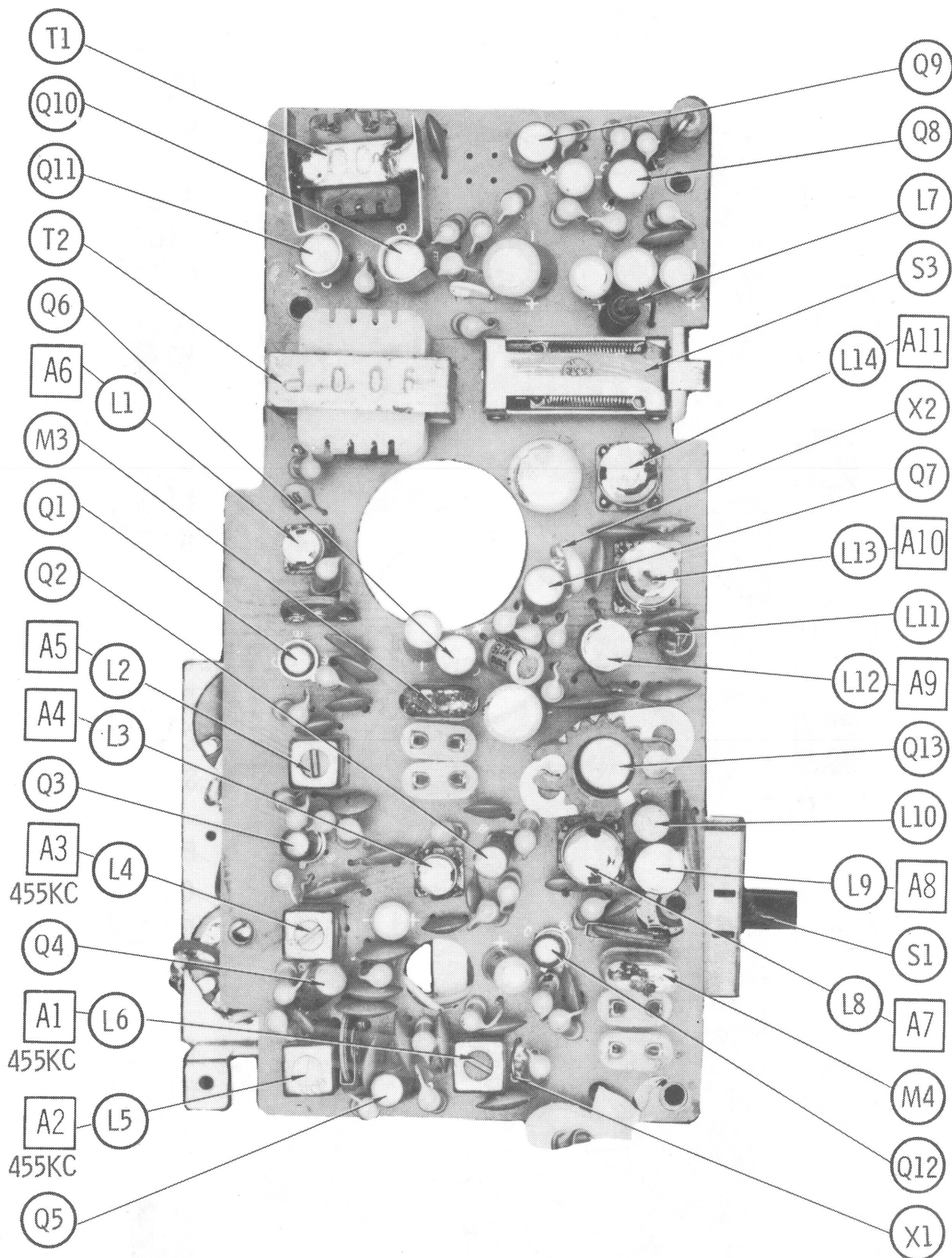
INDICATOR	ADJUST	REMARKS
RF Wattmeter or Field Strength meter	A7 thru A11	Adjust for maximum.

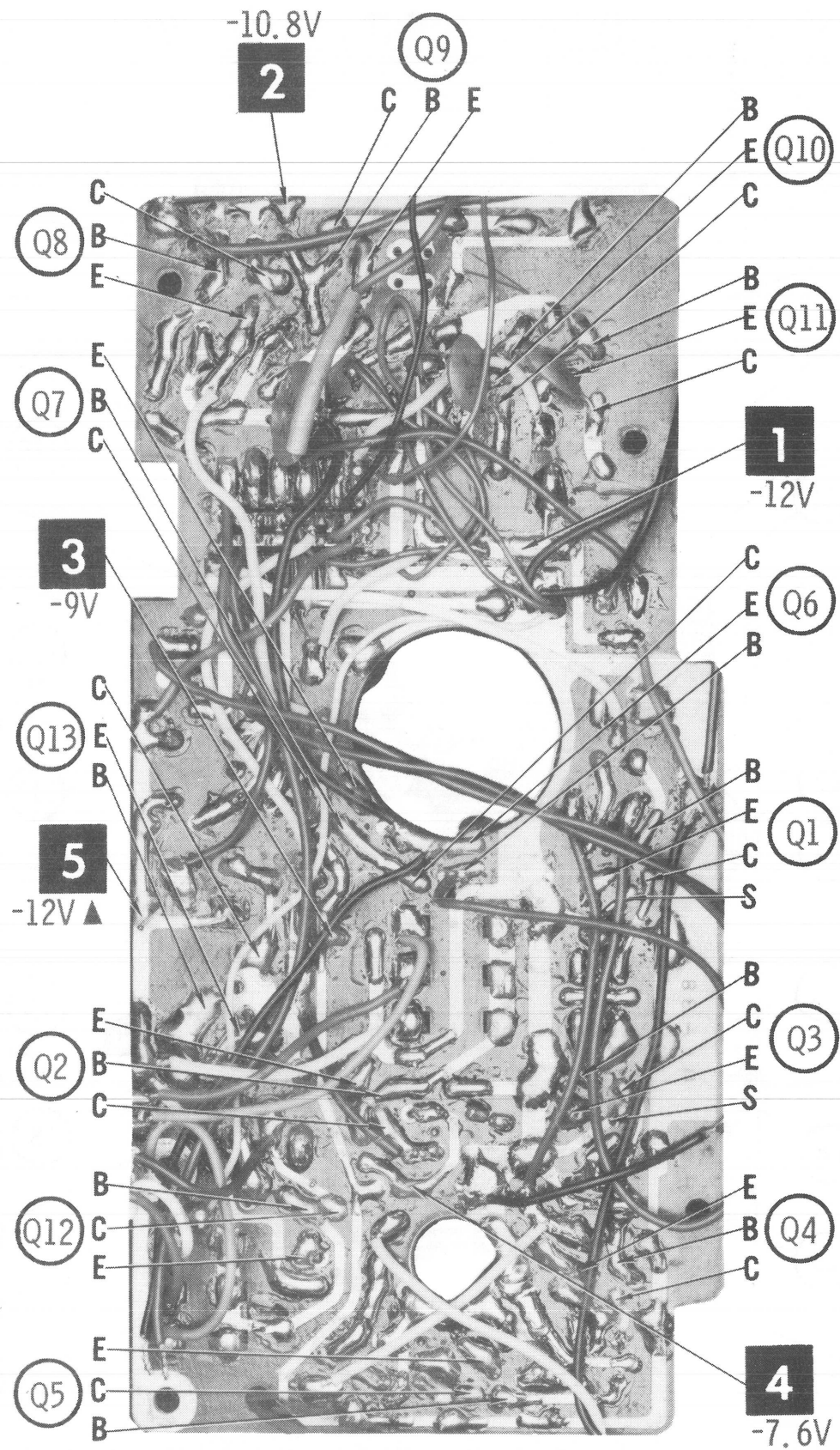
HOWARD W. SAMS & CO., INC. Indianapolis, Indiana 46206

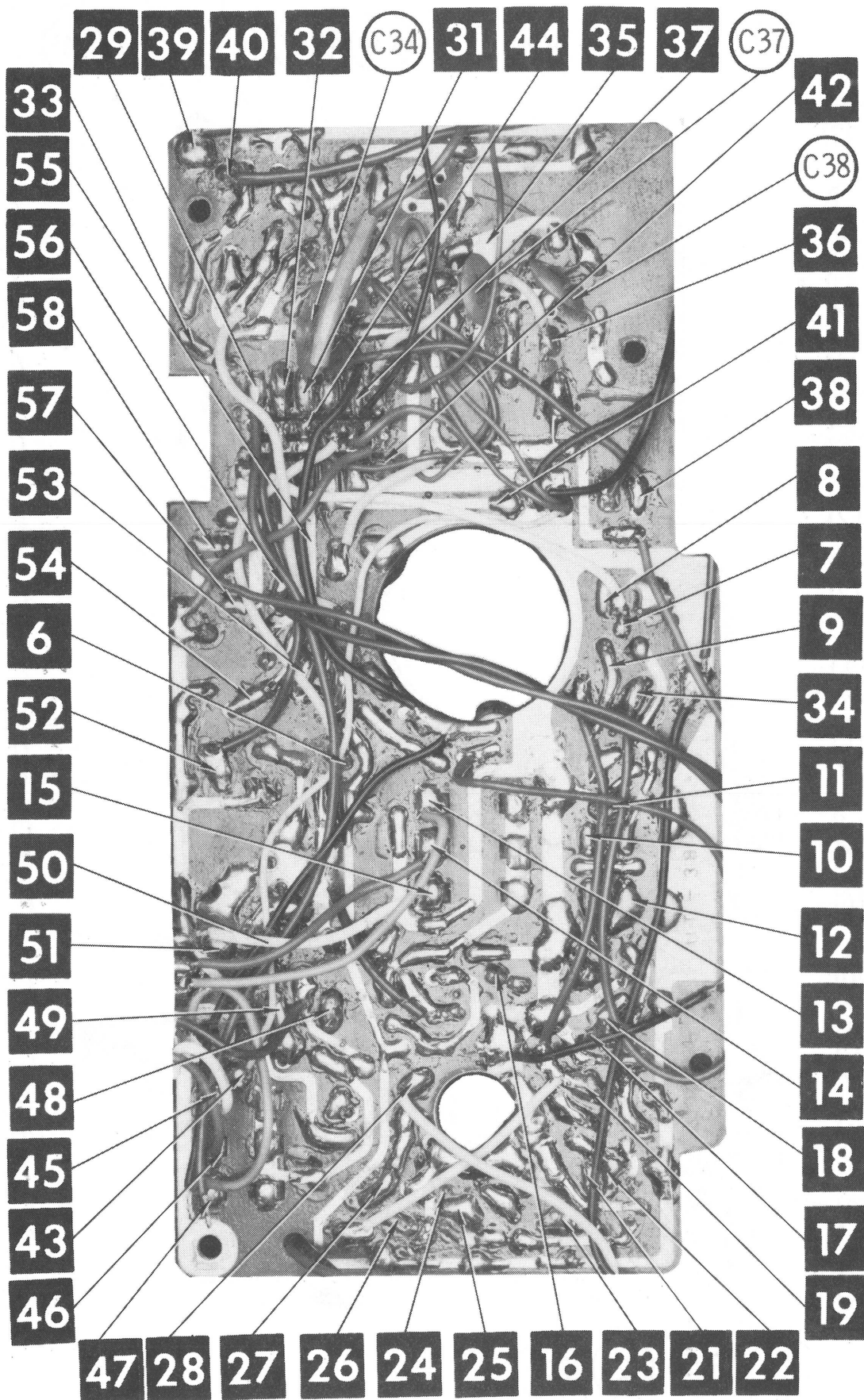
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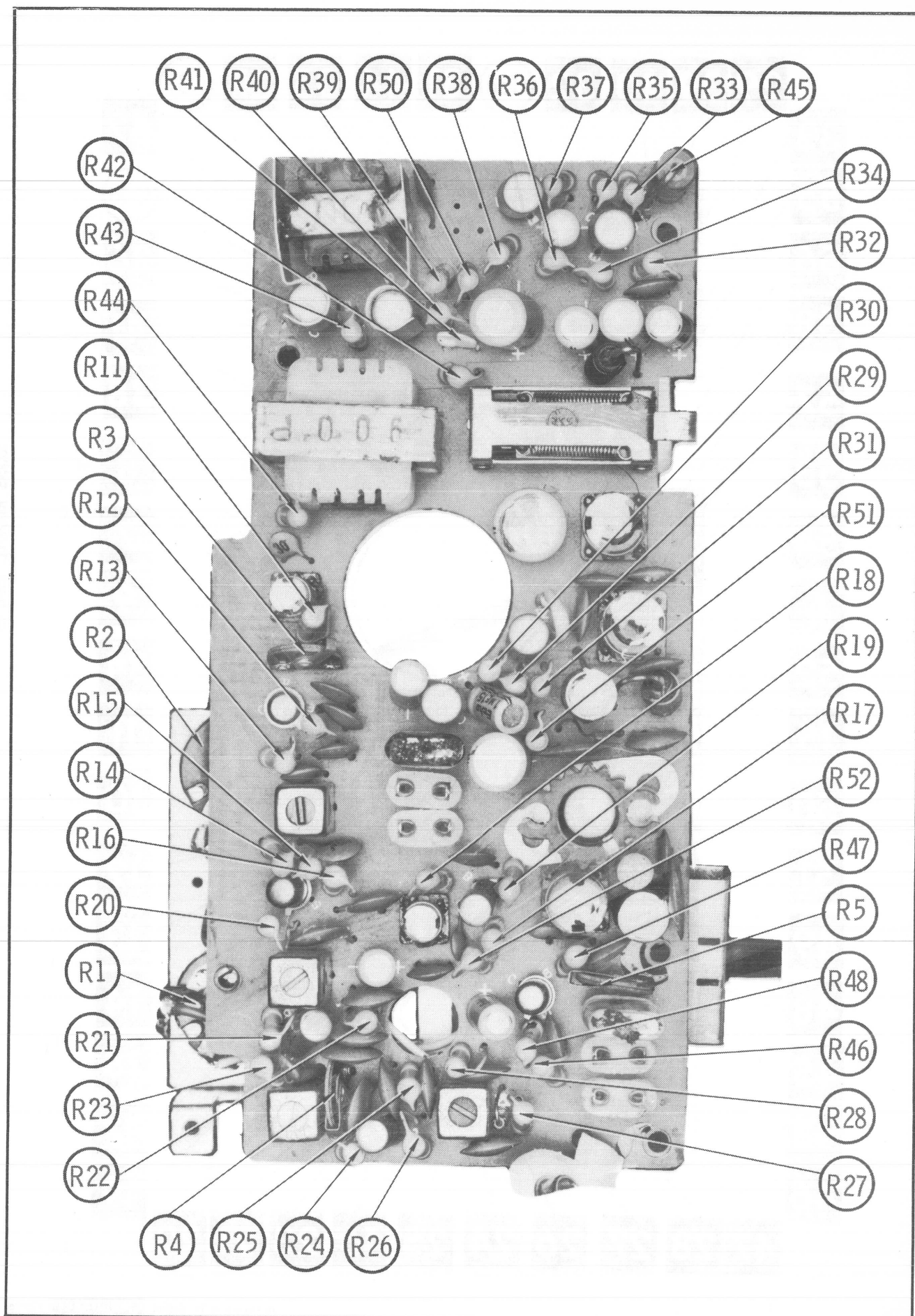
TY935











PARTS LIST AND DESCRIPTION

WIRING DATA

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

General-use Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in 12 Colors
Shielded Antenna Lead	8524 (Stranded) Available in 12 Colors
	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. 8499 Single-Conductor Shielded (Neoprene)
	8498 Single-Conductor Shielded (Vinyl)
Ignition Noise Suppression	Use BELDEN No. 7300-Series Spark-Plug Sets
Bonding Strap	Use BELDEN No. 8661 (3/8 In.)

TRANSISTORS

ITEM No.	TYPE No.	FUNCTION	REPLACEMENT DATA					
			MFR. PART No.	GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	MOTOROLA PART No.	RCA PART No.	SYLVANIA PART No.
Q1	2SA3410B	RF Amp		GE-9	TR-17	HEP637	SK3006	ECG 160
Q2	2SA103CA	Rec. Oscillator		GE-9	TR-17	HEP638	SK3006	ECG 126
Q3	2SA3410B	Mixer		GE-9	TR-17	HEP638	SK3006	ECG 160
Q4	2SA101X	1st IF Amp		GE-9	TR-11	HEP638	SK3008	ECG 100
Q5	2SA101X	2nd IF Amp		GE-9	TR-11	HEP638	SK3008	ECG 100
Q6	2SB175B	Squelch		GE-2	TR-14	HEP254	SK3004	ECG 102A
Q7	2SB175B	Squelch		GE-2	TR-14	HEP254	SK3004	ECG 102A
Q8	2SB171B	AF Amp		GE-2	TR-14	HEP254	SK3004	ECG 158
Q9	2SB172D	Driver		GE-2	TR-14	HEP254	SK3004	ECG 158
Q10	2SB324	Output-Modulator		GE-2	TR-05	HEP254	SK3003	ECG 102A
Q11	2SB324	Output-Modulator		GE-2	TR-05	HEP254	SK3003	ECG 102A
Q12	2SC478D	Xmtr Oscillator		GE-17	TR-22	HEP729	SK3018	ECG 123A
Q13	2SC697D	Final Amp					SK3049	

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MFR. PART OR TYPE No.	REPLACEMENT DATA				NOTES
		GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	RCA PART No.	SYLVANIA PART No.	
X1	0A90	1N60	1N60	1N60	ECG 109	
X2	0A90	1N60	1N60	1N60	ECG 109	

ELECTROLYTIC CAPACITORS

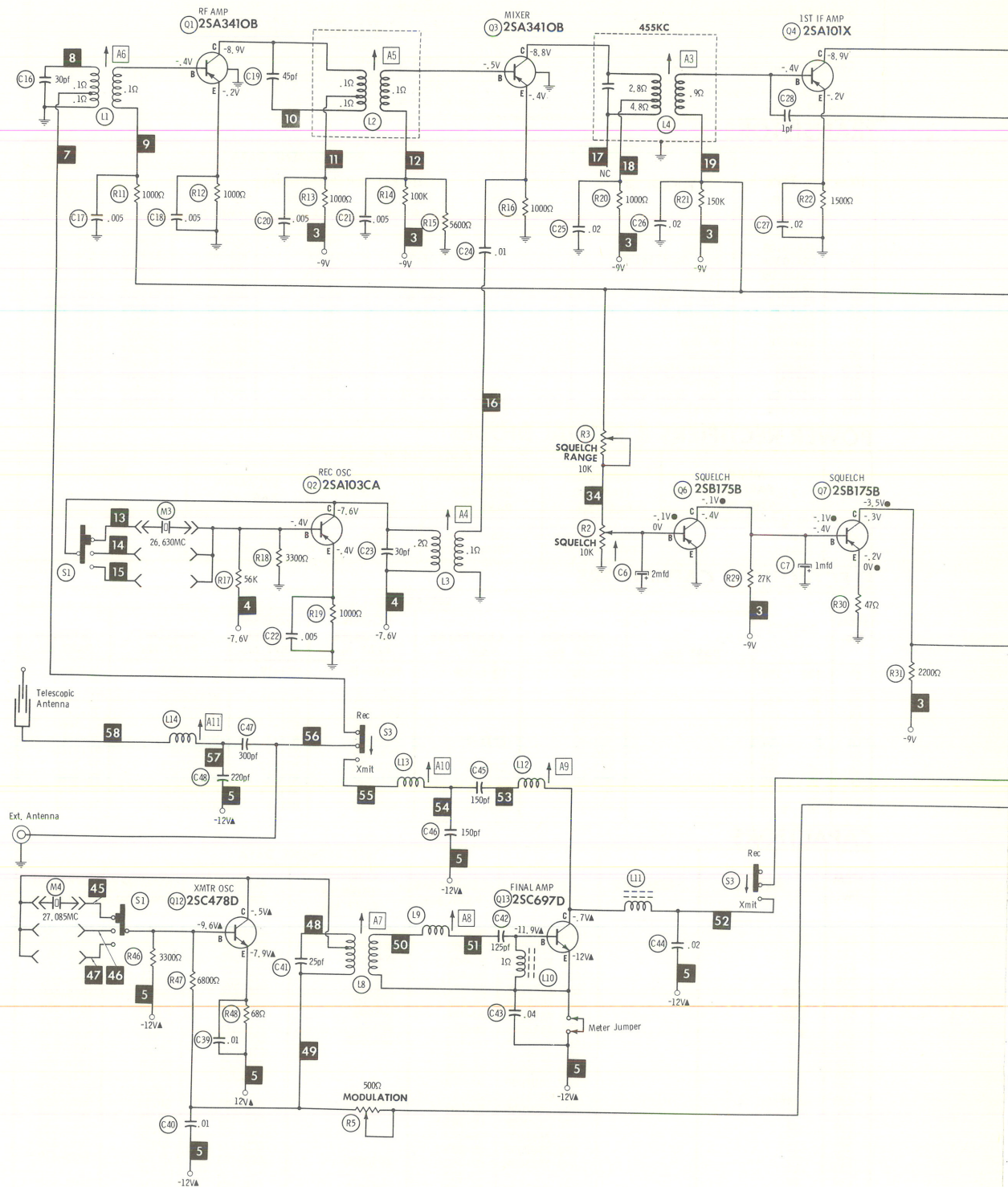
ITEM No.	RATING	REPLACEMENT DATA						
		PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	100 15V		MCD-180	EP15-100	PC100-16	MT1-19	MTV100CF15	TE-1162
C2	50 15V		MCD-130	EP15-50	PC50-16	MT1-16	MTV50CB15	TE-1160
C3	30 15V		MCD-110	EP15-25	PC30-35	MT1-13.5	MTV30CB25	TE-1158
C4	1 15V		MCD-10		PC1-100	MT1-1	MTV1CB50	TE-1148
C5	1 6V		MCD-10		PC1-100	MT1-1	MTV1CB50	TE-1080
C6	2 6V		MCD-30	EP15-2	PC2-100	MT1-1	MTV2CB50	TE-1121
C7	1 15V		MCD-10		PC1-100	MT1-1	MTV1CB50	TE-1148
C8	30 6V		MCD-110	EP6-25	PC30-35	MT1-13	MTV30CB25	TE-1132.1
C9	.5 6V		MCD-10		PC1-100	MT1-1	MTV1CB50	TE-1080
C10	30 6V		MCD-110	EP6-25	PC30-35	MT1-13	MTV30CB25	TE-1132.1
C11	10 6.3V		MCD-70	EP6-10	PC10-50	MT1-5	MTV10CB50	TE-1087

CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C16	30		NPO-DI 33	DTZ-33	NP033	CCT0-330	CN0433	10TCC-Q33
C17	.005		GPD X5R502K	DD-502	GP5000	CCD-502	JF250	10TS-D50
C18	.005		GPD X5R502K	DD-502	GP5000	CCD-502	JF250	10TS-D50
C19	.45		GPD X5F470K	DD-470	NP047	CCD-470	GP447	10TS-Q47
C20	.005		GPD X5R502K	DD-502	GP5000	CCD-502	JF250	10TS-D50
C21	.005		GPD X5R502K	DD-502	GP5000	CCD-502	JF250	10TS-D50
C22	.005		GPD X5R502K	DD-502	GP5000	CCD-502	JF250	10TS-D50
C23	30		GPD X5F331K	DD-331	GP330	CCD-331	GP333	10TS-T33
C24	.01		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C25	.02		GPD Z5U203P	DD-203		CCD-203	GP120	10TS-S20
C26	.02		GPD Z5U203P	DD-203		CCD-203	GP120	10TS-S20
C27	.02		GPD Z5U203P	DD-203		CCD-203	GP120	10TS-S20
C28	.5pf		NPO-DI 1.0	TCZ-1		CCD-203	CN0510	10TCC-V10
C29	.02		GPD Z5U203P	DD-203		CCD-203	GP120	10TS-S20
C30	.02		GPD Z5U203P	DD-203		CCD-203	GP120	10TS-S20
C31	.02		GPD Z5U203P	DD-203		CCD-203	GP120	10TS-S20
C32	.02		GPD Z5U203P	DD-203		CCD-203	GP120	10TS-S20
C33	.01		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C34	.04			DD-403			GP140	
C35	.01		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C36	.001		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C37	.02		GPD Z5U203P	DD-203		CCD-203	GP120	10TS-S20
C38	.02		GPD Z5U203P	DD-203		CCD-203	GP120	10TS-S20
C39	.01		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C40	.01		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C41	25		NPO-DI 25	DTZ-25		CCD-151	CN0425	10TCC-Q25
C42	125		GPD X5F151K	DD-151	GP150		GP315	10TS-T15
C43	.04			DD-403			GP140	
C44	.02		GPD Z5U203P	DD-203		CCD-203	GP120	10TS-S20
C45	150		GPD X5F151K	DD-151	GP150	CCD-151	GP315	10TS-T15
C46	150		GPD X5F151K	DD-151	GP150	CCD-151	GP315	10TS-T15
C47	300		GPD X5F331K	DD-331	GP330	CCD-331	GP333	10TS-T33
C48	.02		GPD X5F221K	DD-221	GP220	CCD-221	GP322	10TS-T22
C49	.02		GPD Z5U203P	DD-203		CCD-203	GP120	10TS-S20
C50	.005		GPD X5R502K	DD-502	GP5000	CCD-502	JF250	10TS-D50
C51	.04			DD-403			GP140	

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ROSS MODEL RE-025

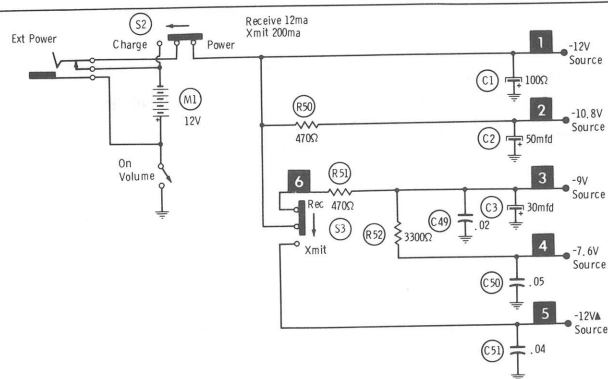
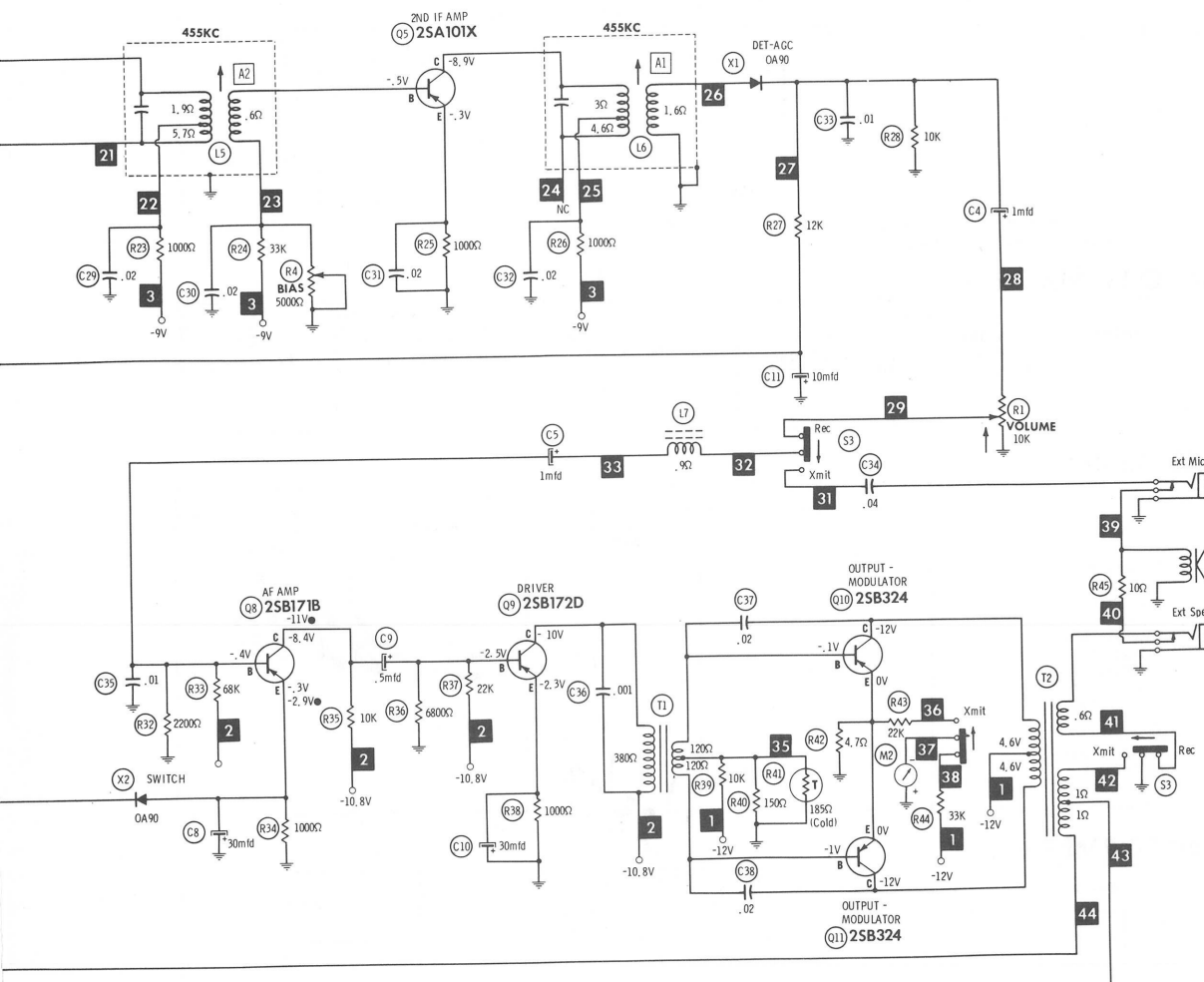


▲ Measured in "Transmit" position.
Values shown in () are used in some applications.
Resistors are 1/2W or less, 10% or 20%, unless otherwise indicated.
Supply voltage maintained at rated value for measurements.
Voltage and resistance measured with VTVM or equivalent meter,
no signal applied and controls adjusted for normal operation.
Controls viewed from actuator end. Arrow indicates clockwise rotation.
Numbers assigned to terminals may not be found on the unit.
Transistor resistances vary widely. No resistance measurements taken.

A PHOTOFACIT STANDARD NOTATION SCHEMATIC
with **CIRCUITRACE**

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- Squelched
- NC No Connection
- ⊥ Denotes ground
- Indicates connection used in some versions.
- - - Indicates connection not used in some versions.
- * Omitted in some versions.
- See parts list.
- Measurements taken with switching in position shown unless otherwise indicated.



Transistor Terminal Guides



Q1, Q2



Q12, Q13



Term Ident
Q2, Q4 thru Q11

PARTS LIST AND DESCRIPTION (CONTINUED)

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

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

ITEM No.	FUNCTION	RESISTANCE	REPLACEMENT DATA				
			MFGR. PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R1 R2 R3	Volume/Switch Squelch Squelch Range	10K 10K 10K		TSV-10K (1) or T-10K (1)		X201R103B (1)	MTC14L1 (1)
R4	Bias Adjust	5000		TSV-5K (1) or T-5000 (1)		X201R502B (1)	MTC53L1 (1)
R5	Modulating Adjust	500		TSV-500 (1) or T-500 (1)		X201R501B (1)	MTC52L1 (1)

(1) Cut off one of end terminals & bend to fit "PC" board.

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA	
		WORKMAN PART No.	MFGR. PART No.
R41	Thermistor 185 Cold		

ITEM No.	RATING	REPLACEMENT DATA	
		WORKMAN PART No.	MFGR. PART No.
R42	4.7 1/4W		

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA			
		PART No.	MEISSNER PART No.	MILLER PART No.	WORKMAN PART No.
L1 L2 L3 L4 L5 L6 L7	Antenna Matching RF Rec. Oscillator Input IF Interstage IF Output IF RF Choke		16-9033 16-9034 16-9035	8810 8811 8812	
L8 L9 L10 L11 L12 L13 L14	Xmtr Oscillator Final Input RF Choke RF Choke Final Output Pi Network Antenna Tuning		19-6033 19-1010	74F335AI 4622	T860

TRANSFORMER (Driver)

ITEM No.	TURNS RATIO			REPLACEMENT DATA				NOTES
	PRI.	SEC. 1	SEC. 2	MFGR. PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD Part No.	
T1	1.2	1 CT						

TRANSFORMER (Audio Output)

ITEM No.	IMPEDANCE		REPLACEMENT DATA				NOTES
	PRI.	SEC. 1	MFGR. PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T2	72	8 SEC. 2 2 CT DC Resistance					

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		MFGR. PART No.	QUAM PART No.	
SP1	2 1/2" PM 8 ohms			

BATTERIES

ITEM No.	VOLTAGE	MFGR. PART No.	REPLACEMENT DATA		NOTES
			EVEREADY	MALLORY	
M1	12 Volts		1015 or E91 or E9	M15R or MN1500 or ZM9	8 Required.

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
M2 M3 M4 S1 S2 S3	Meter Crystal, Rec. Crystal, Xmit Switch, Selector Switch, Charge-Power Switch, Xmit-Rec.		26.630MC 27.085MC