

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.



PACE MODEL CB166

MODEL CB166 (40 Ch.)

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

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ALIGNMENT INSTRUCTIONS

CAUTION: Use isolation transformer or observe polarity when connecting test equipment. Maintain line voltage at 120V AC. Allow a 15-minute warm-up period.
Adjustments made with 13.8-volt DC input.
Connect low sides of test equipment to ground unless specified otherwise.
Connect 50-ohm dummy load or antenna before keying transmitter.

Suggested Alignment Tools:

GC ELECTRONICS:

L10, L14, T3, T4, T5, T6, T7, T8, T9, T10 5009
T13 8282
L3, L5, L6, L8, L9, L20, T1, T2 9440
C305, C423 5000

SYNTHESIZER ALIGNMENT

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Input of frequency counter to TP2.	Ch. 19	C305	Adjust for 10.240MHz.
Input of DC meter to TP1.	Ch. 1	L5	Adjust for 2.0 volts.
Input of RF VTVM to TP10.	Ch. 19 Ch. 19, Xmit	L6 L20	Adjust for maximum. Adjust for maximum.
Input of frequency counter thru low cap probe to TP10.	Ch. 1		Check for 16.270MHz. Repeat for all channels, (Channel frequency - 10.695MHz = Frequency on counter.) XMIT Check for 16.272MHz. Repeat for all channels, (Channel frequency - 10.238MHz = Frequency on counter)
Input of frequency counter to antenna jack.	Ch. 19, Xmit	L3	Adjust for 27.185MHz.

RECEIVER ALIGNMENT

Connect an AC VTVM or AF wattmeter across speaker voice coil.
Adjust volume control to obtain a suitable indication.

Set generator output low enough to prevent AGC limiting.

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Output of signal generator thru .01uF to TP2. 455kHz, 1000Hz @ 30% modulation.	Ch. 19	T10, T9, T8	Adjust for maximum output.
Output of signal generator thru .01uF to TP11. 10.695MHz, 1000Hz @ 30% modulation.	Ch. 19	T7, T4, T3	Adjust for maximum output.
Output of signal generator thru .01uF to antenna jack. 27.185MHz, 1000Hz @ 30% modulation.	Ch. 19	T2, T1	Adjust for maximum output. Repeat above steps if necessary.
Input of oscilloscope to TP12. Output of signal generator thru .01uF to antenna jack. 25.8MHz unmodulated.	Ch. 19 NB- on	T5	Adjust for maximum.
Input of oscilloscope to TP12. Output of signal generator thru .01uF to antenna jack. 26.3MHz unmodulated.	Ch. 19 NB-on	T6	Adjust for MINIMUM.

RECEIVER ADJUSTMENTS

Connect an AC VTVM or AF wattmeter across speaker voice coil.
Adjust volume control to obtain a suitable indication.

TEST EQUIPMENT	TRANSCIVER	ADJUST	REMARKS
Output of signal generator thru .01uF to antenna jack. 27.185MHz, 1000Hz @ 30% modulation. Output 1000uV.	Ch. 19	R156	SQUELCH RANGE Set squelch control R157 fully clockwise. Adjust R156 so that squelch just breaks.
Output of signal generator thru .01uF to antenna jack. 27.185MHz, 1000Hz @ 30% modulation. Output 100uV.	Ch. 19	R155	S METER Adjust R155 for 9 on S scale of meter.

TRANSMITTER ALIGNMENT

Connect an RF wattmeter and 50-ohm, 25-watt dummy load to antenna connector.

NOTE: Be sure to check transmit frequency and power on all active channels after alignment of transmitter.

See Page 4 for channel frequencies.

TEST EQUIPMENT	TRANSCIVER	ADJUST	REMARKS
Input of spectrum analyzer to antenna jack.	Ch. 19	L8, L9, T13, L10, L14	Adjust for maximum.
	Ch. 19	L14	Adjust for 4 watts maximum.
	Ch. 19	C423	Adjust for MINIMUM at 54MHz.

TRANSMITTER ADJUSTMENTS

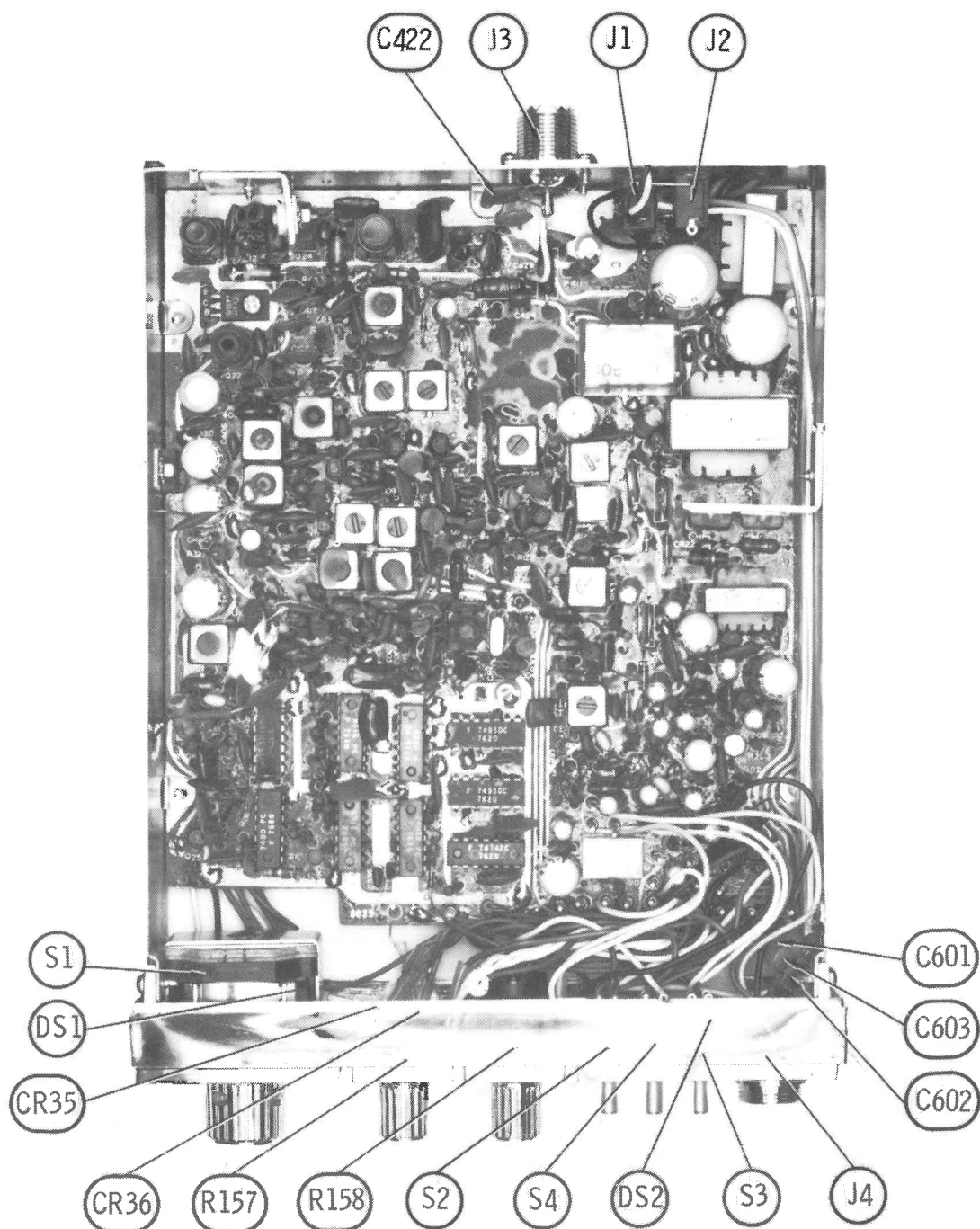
Connect an RF wattmeter and 50-ohm, 25-watt dummy load to antenna connector.

NOTE: Be sure to check transmit frequency and power on all active channels after adjustments of transmitter.

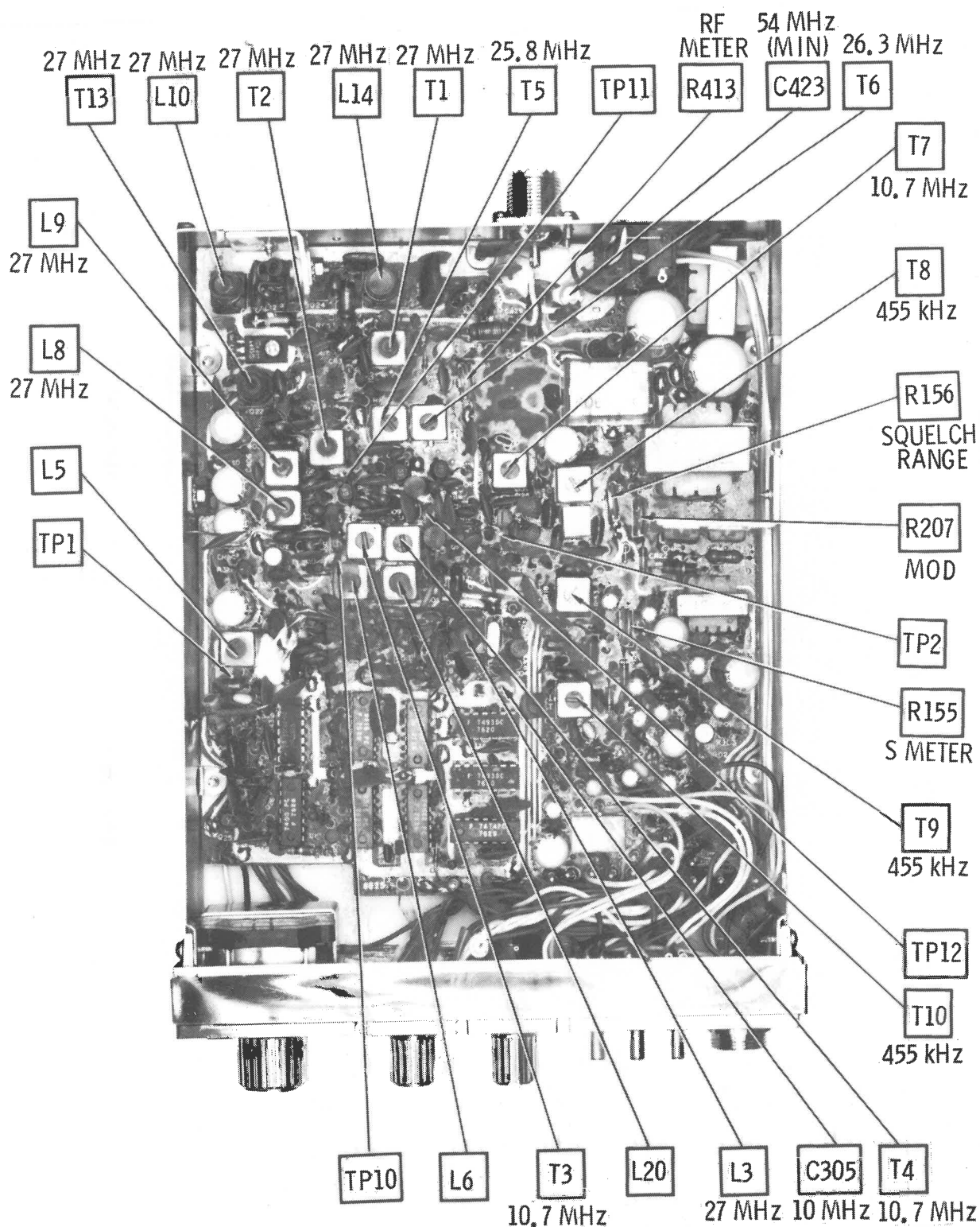
See Page 4 for channel frequencies.

TEST EQUIPMENT	TRANSCIVER	ADJUST	REMARKS
Modulation meter to antenna jack. Inject a 1000Hz signal at MIC input.	Ch. 19	R207	AMC Disconnect C215 to disable AMC. Adjust signal for over-modulation. Restore AMC operation. Adjust R207 for 100% modulation maximum.
	Ch. 19	R413	RF PANEL METER Adjust R413 so the panel RF meter agrees with RF wattmeter.

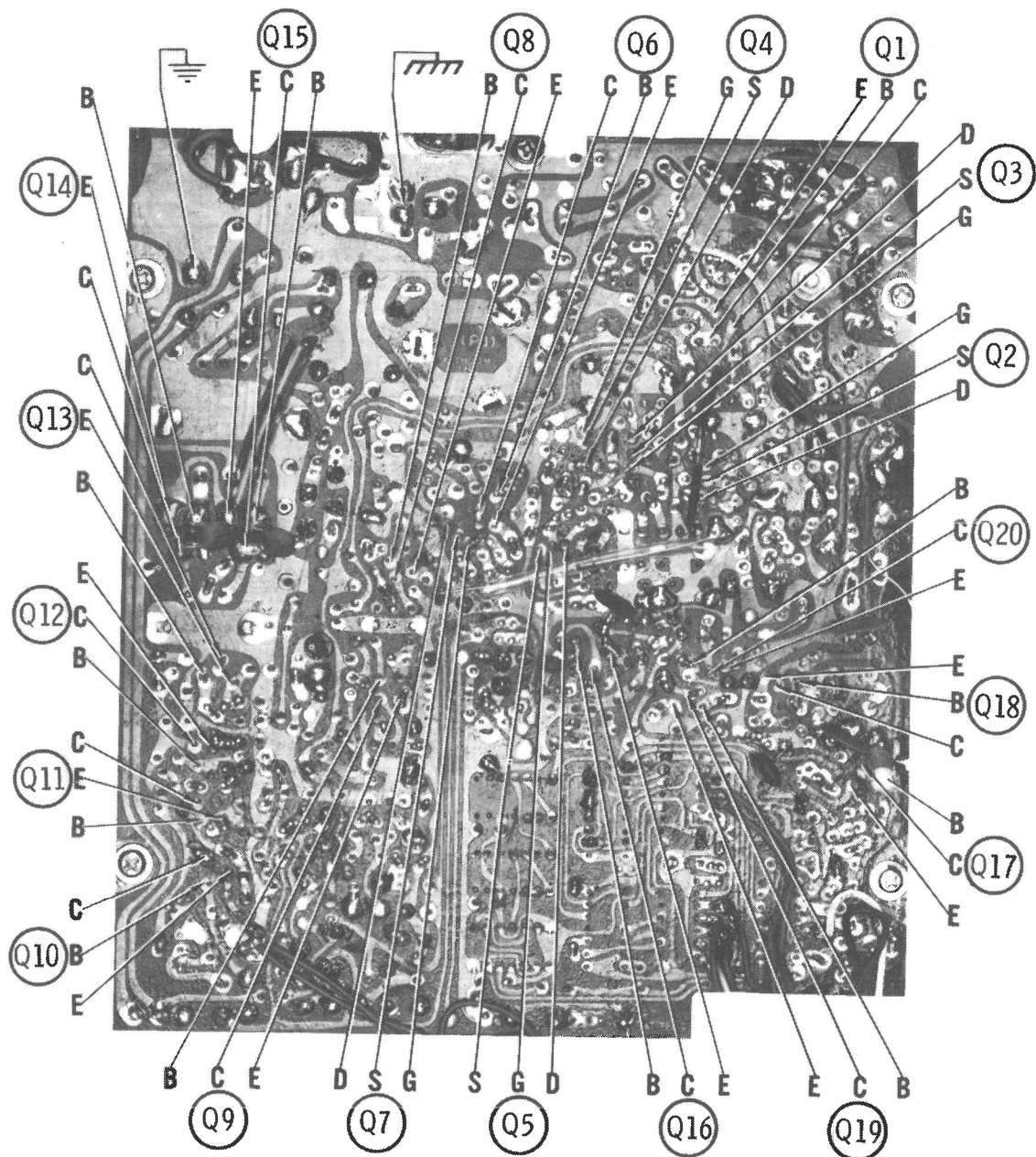
PAGE MODEL CB166



CHASSIS-BOTTOM



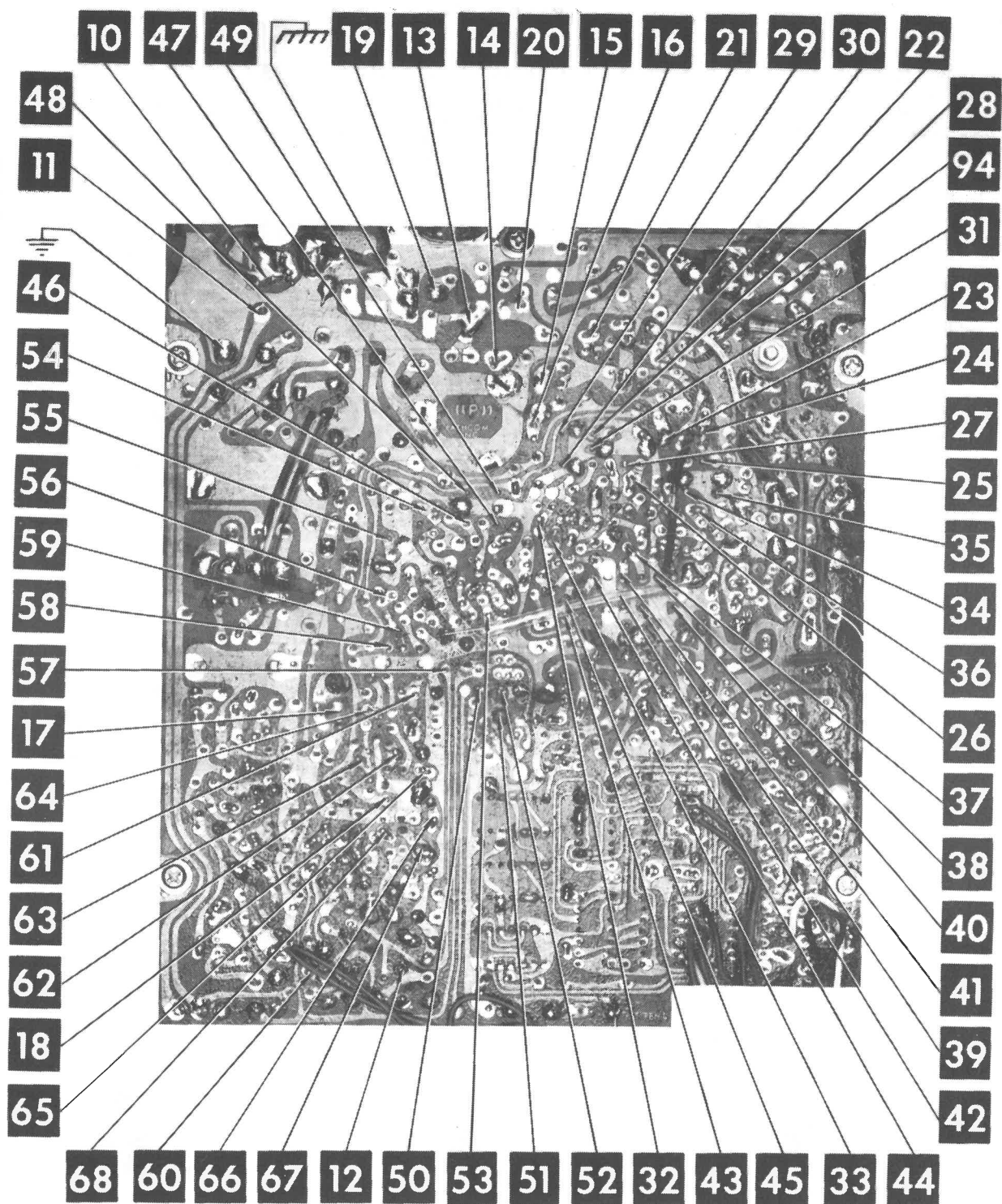
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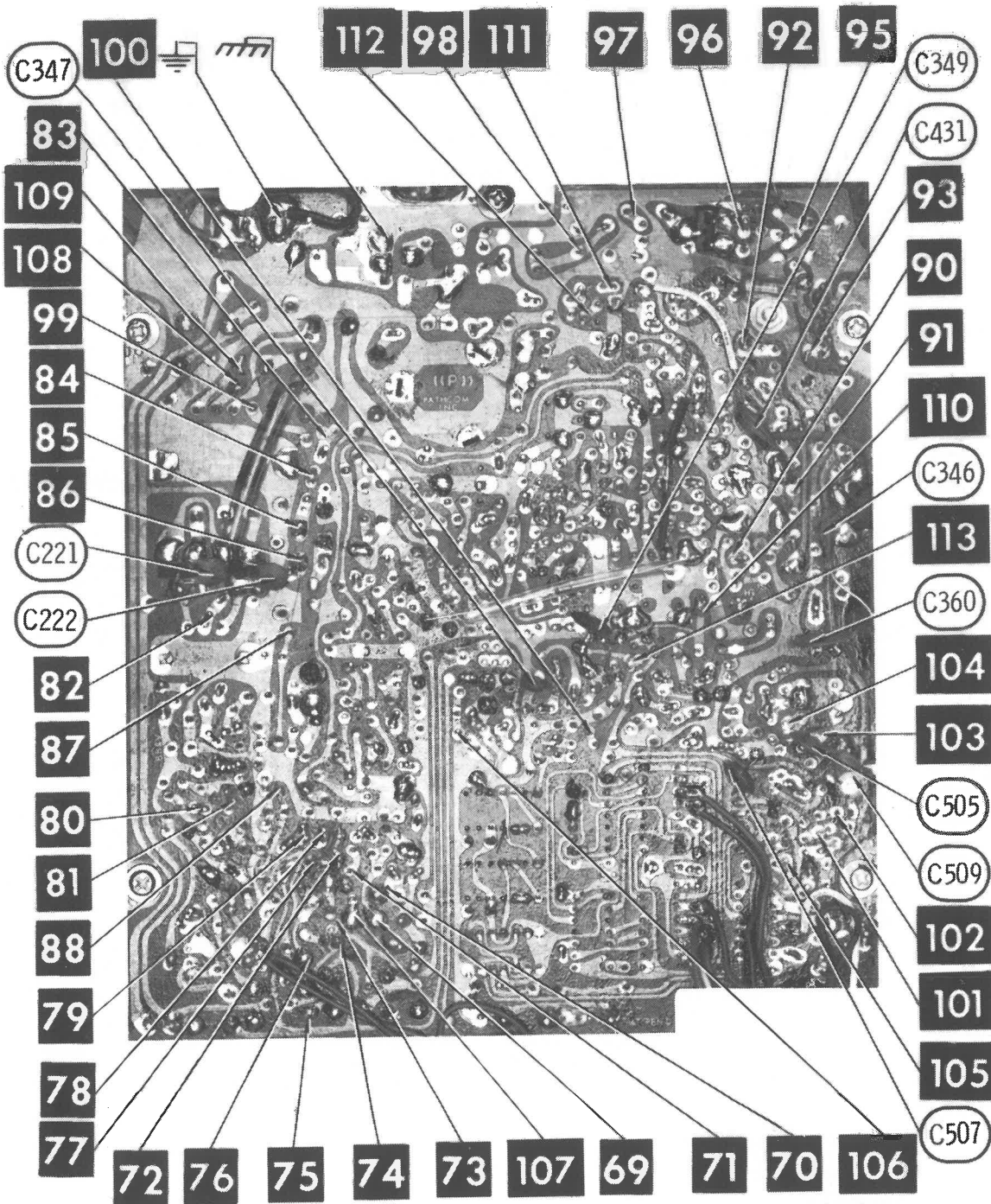
MAIN BOARD



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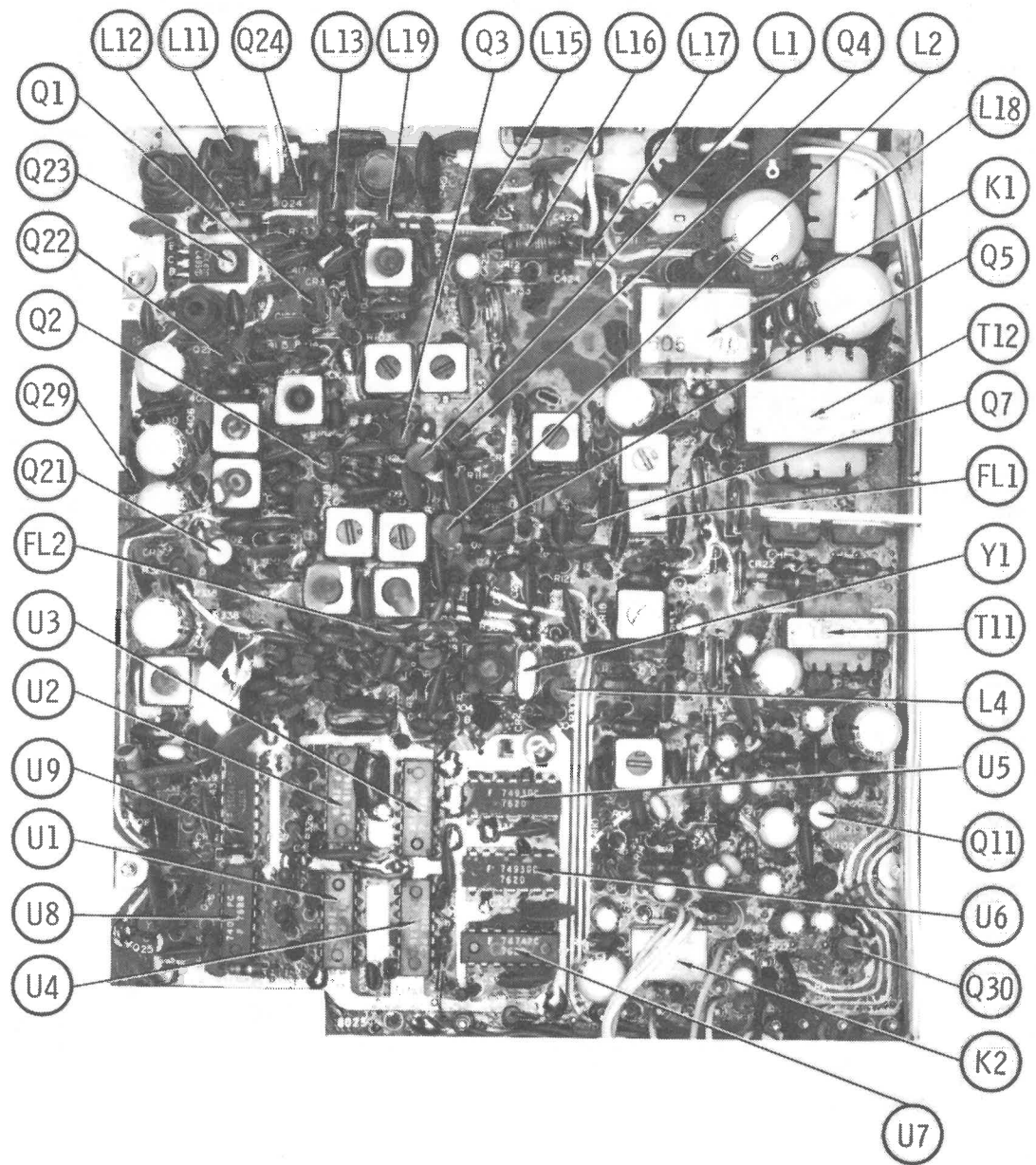


MAIN BOARD

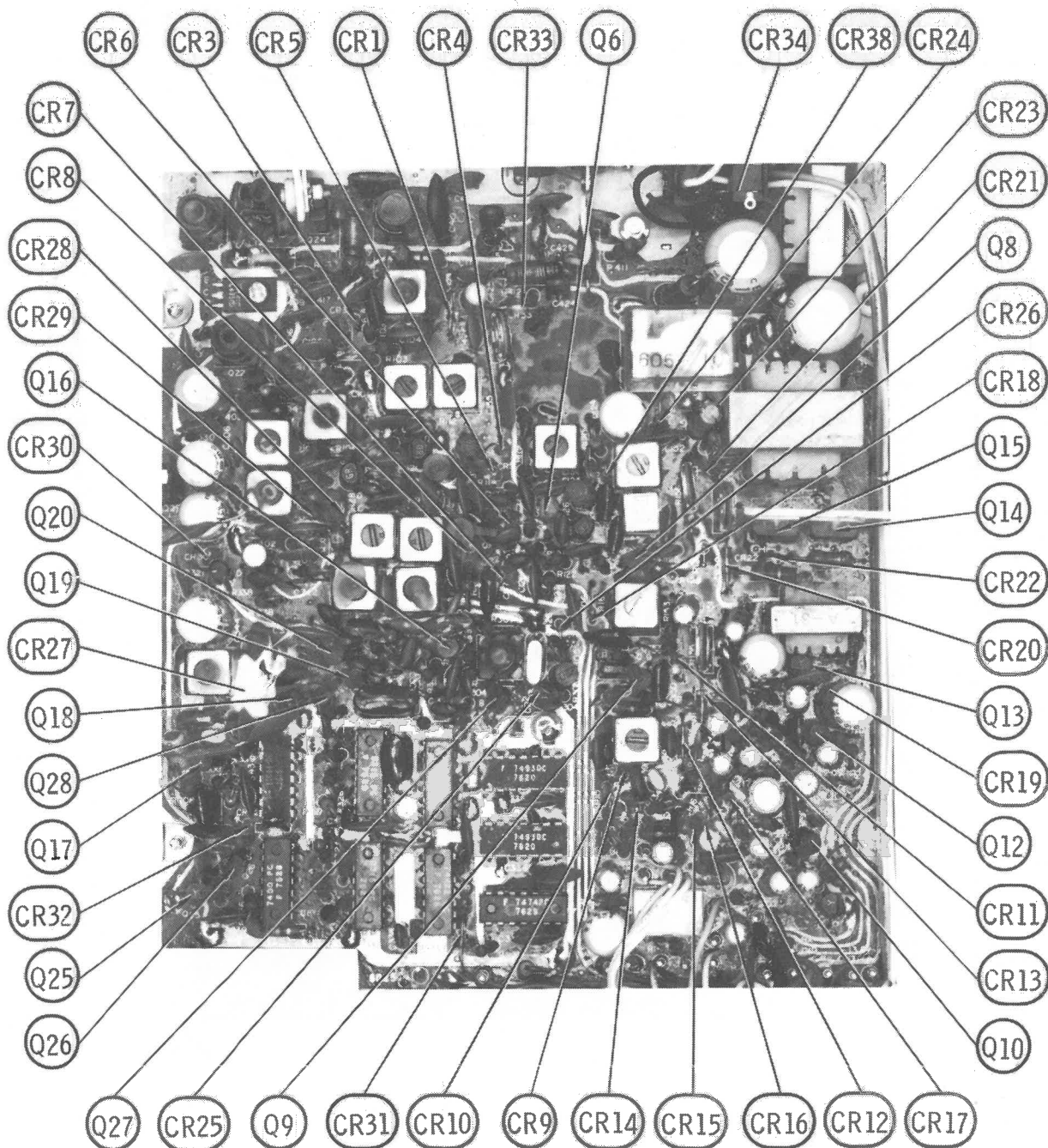


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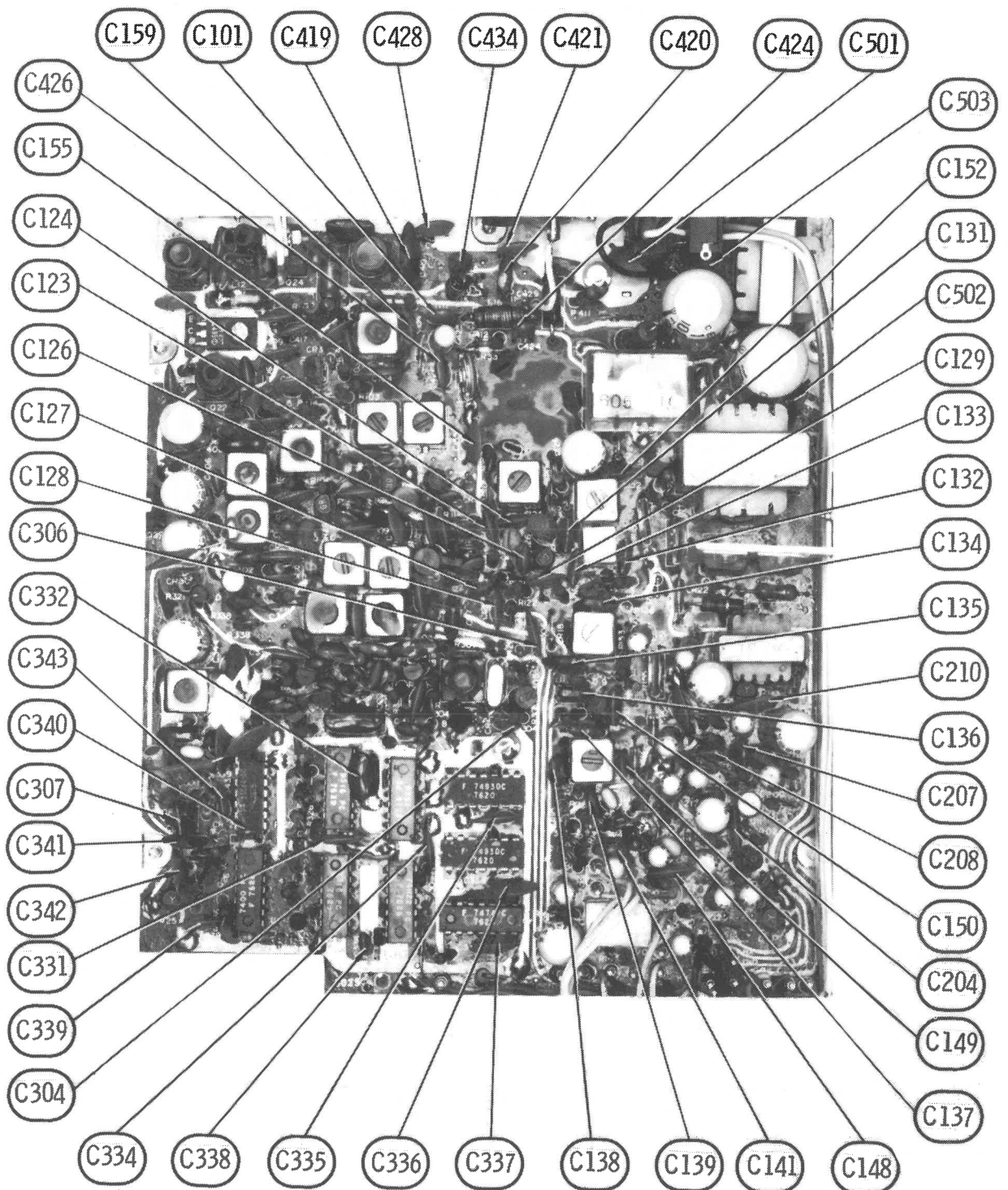
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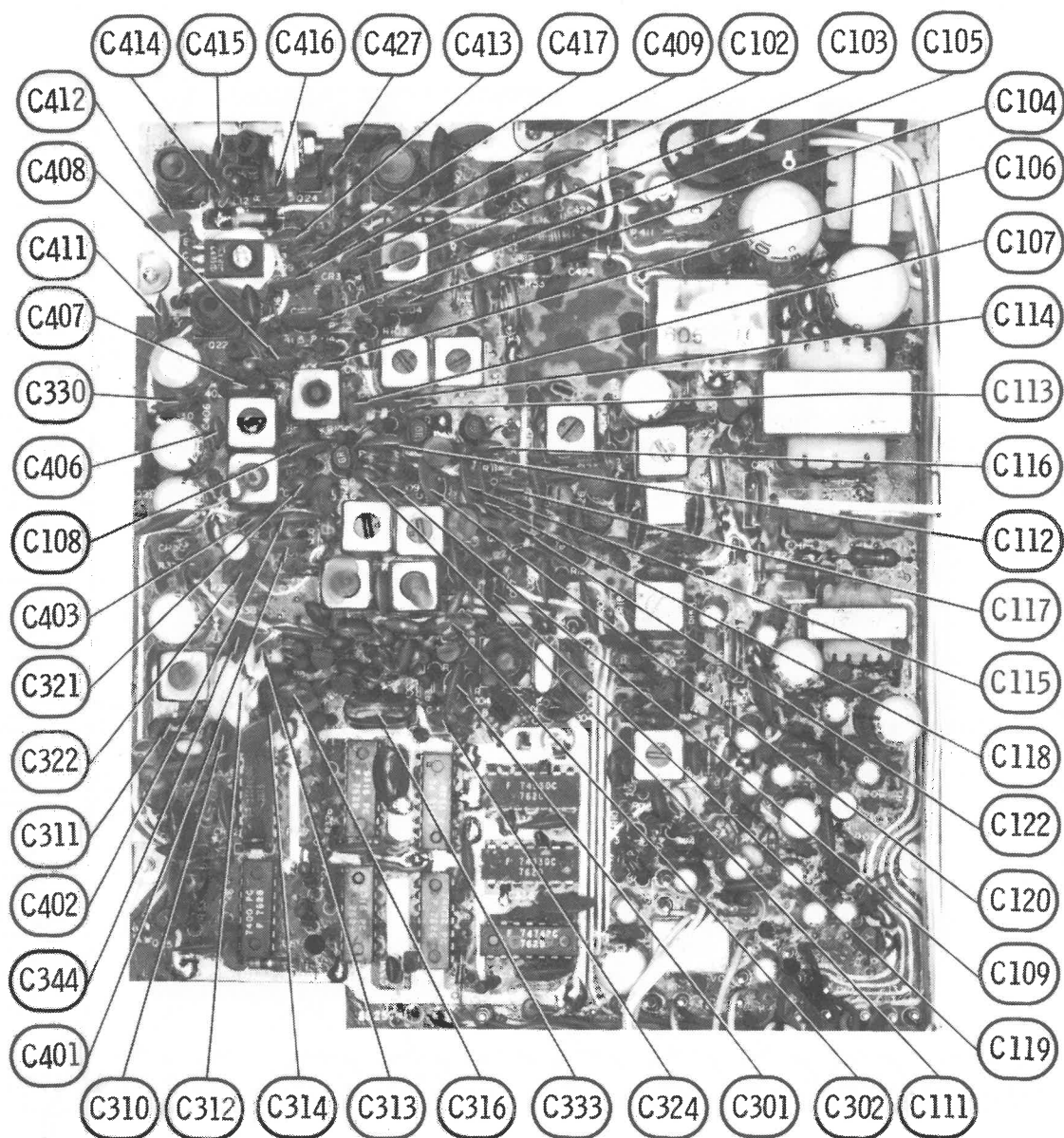
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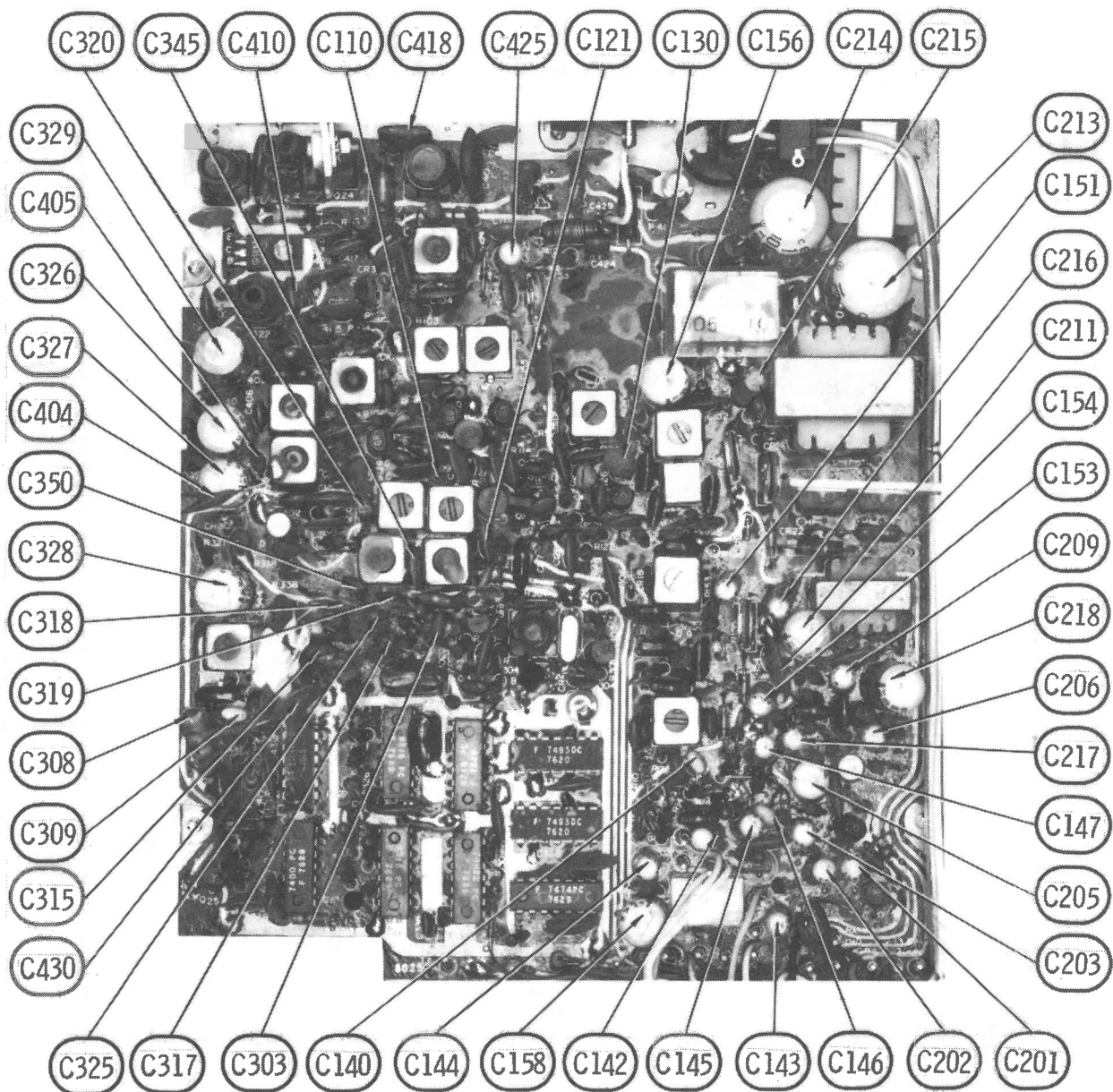
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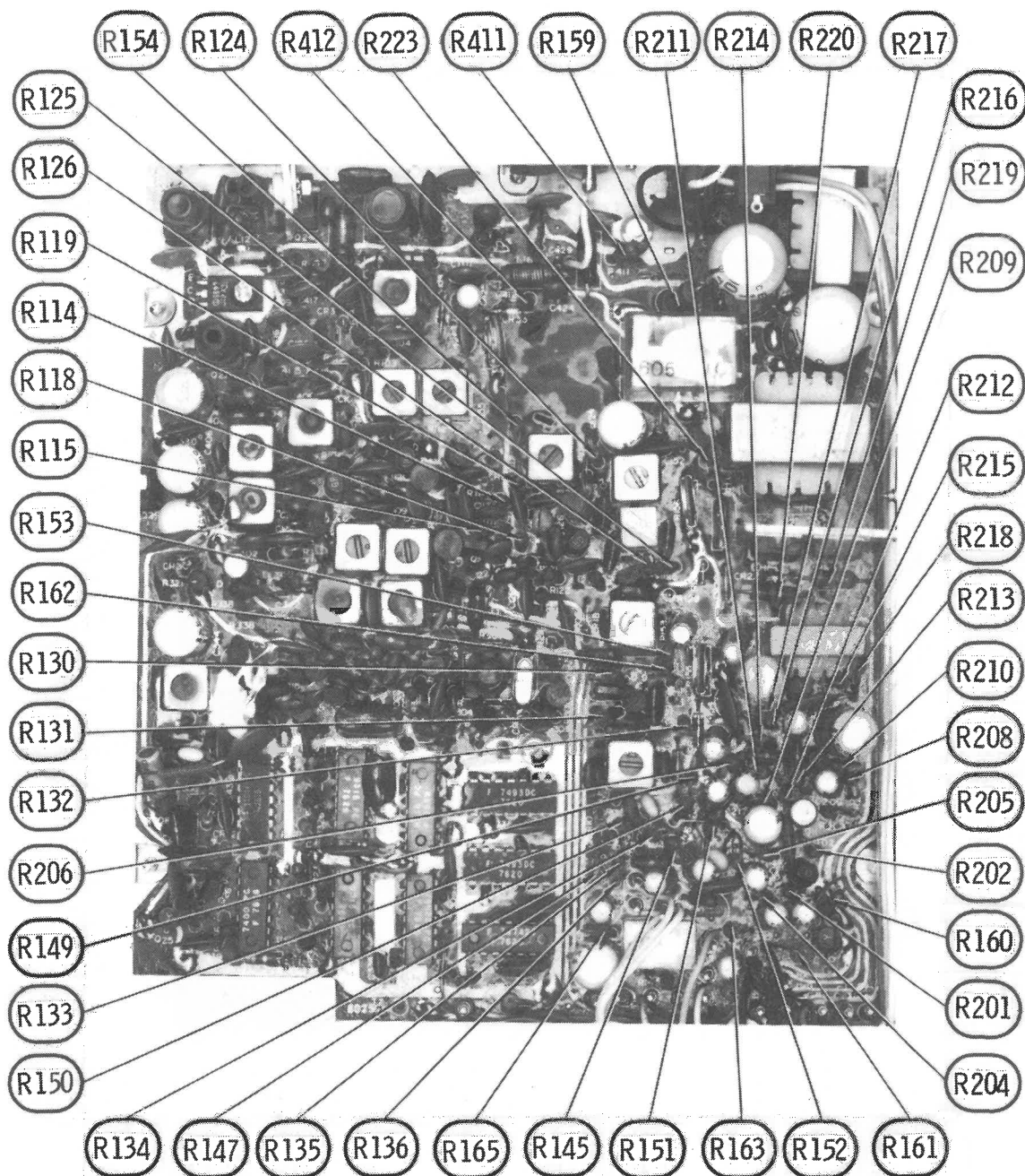
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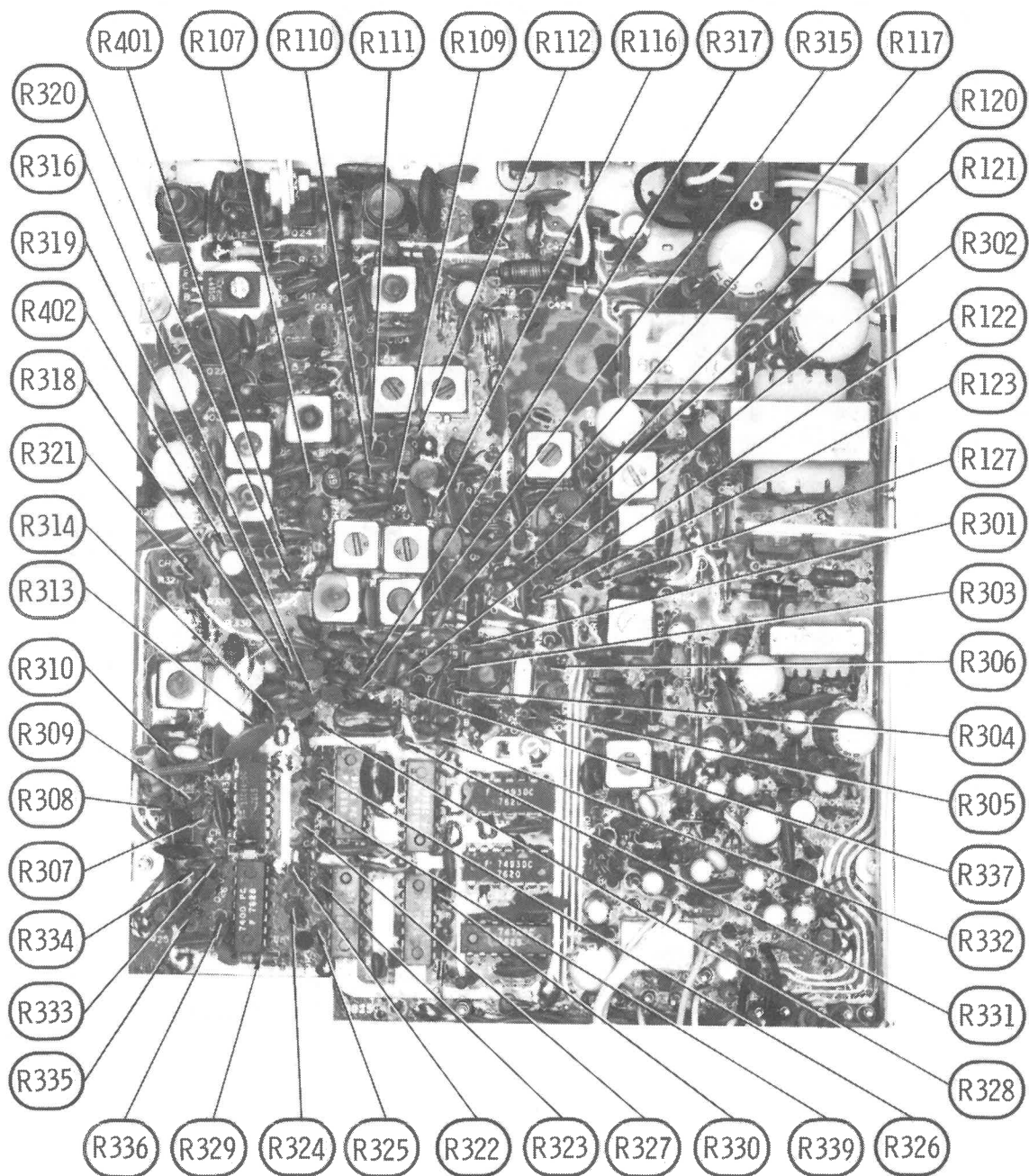
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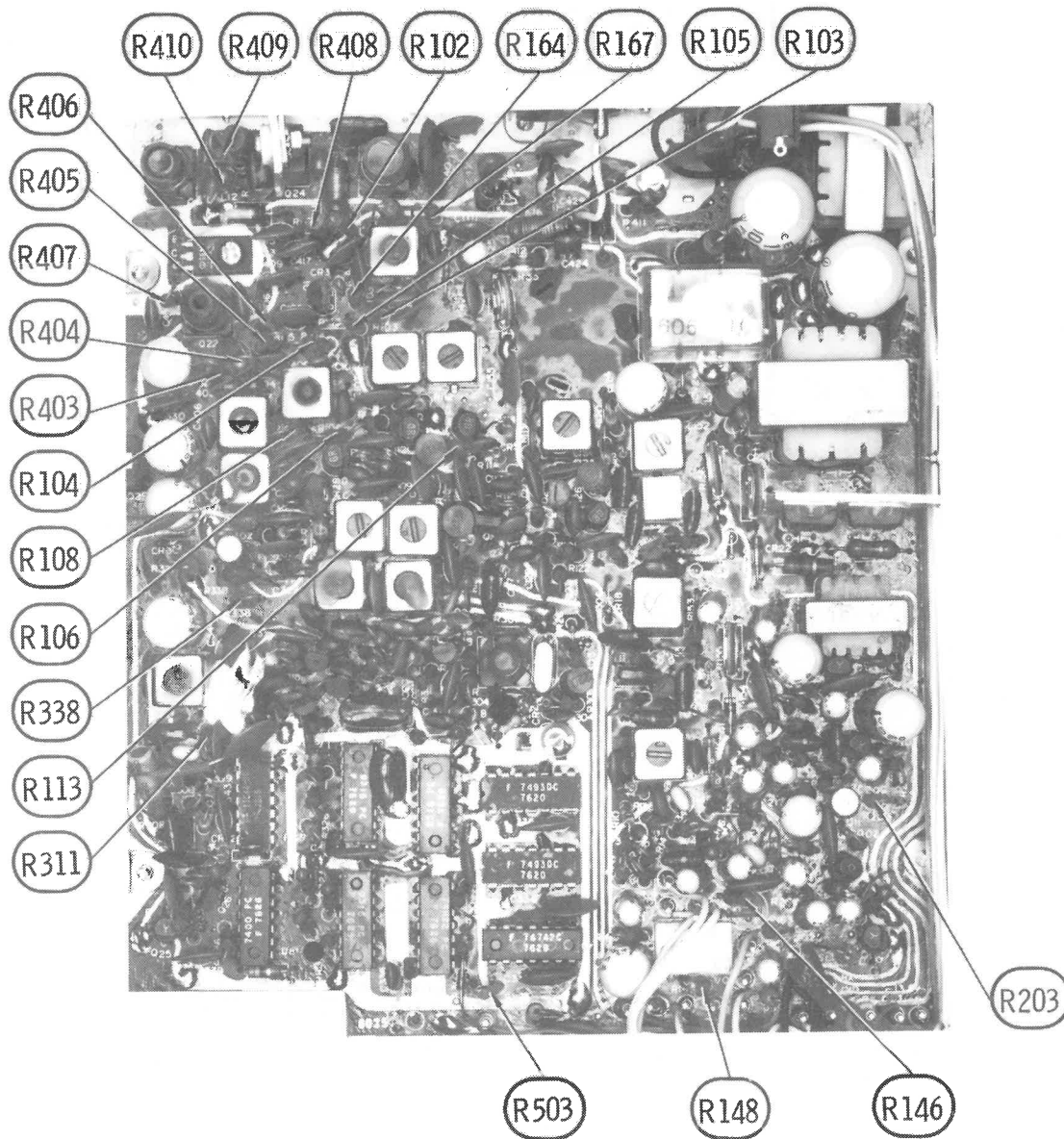
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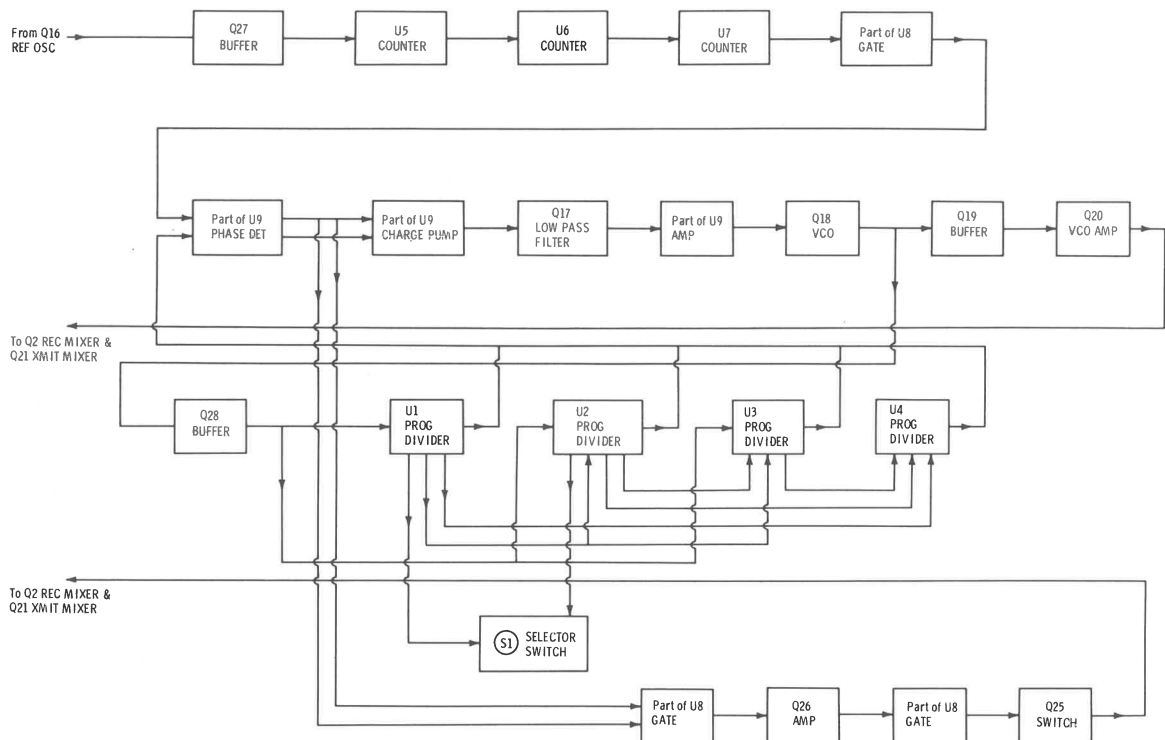
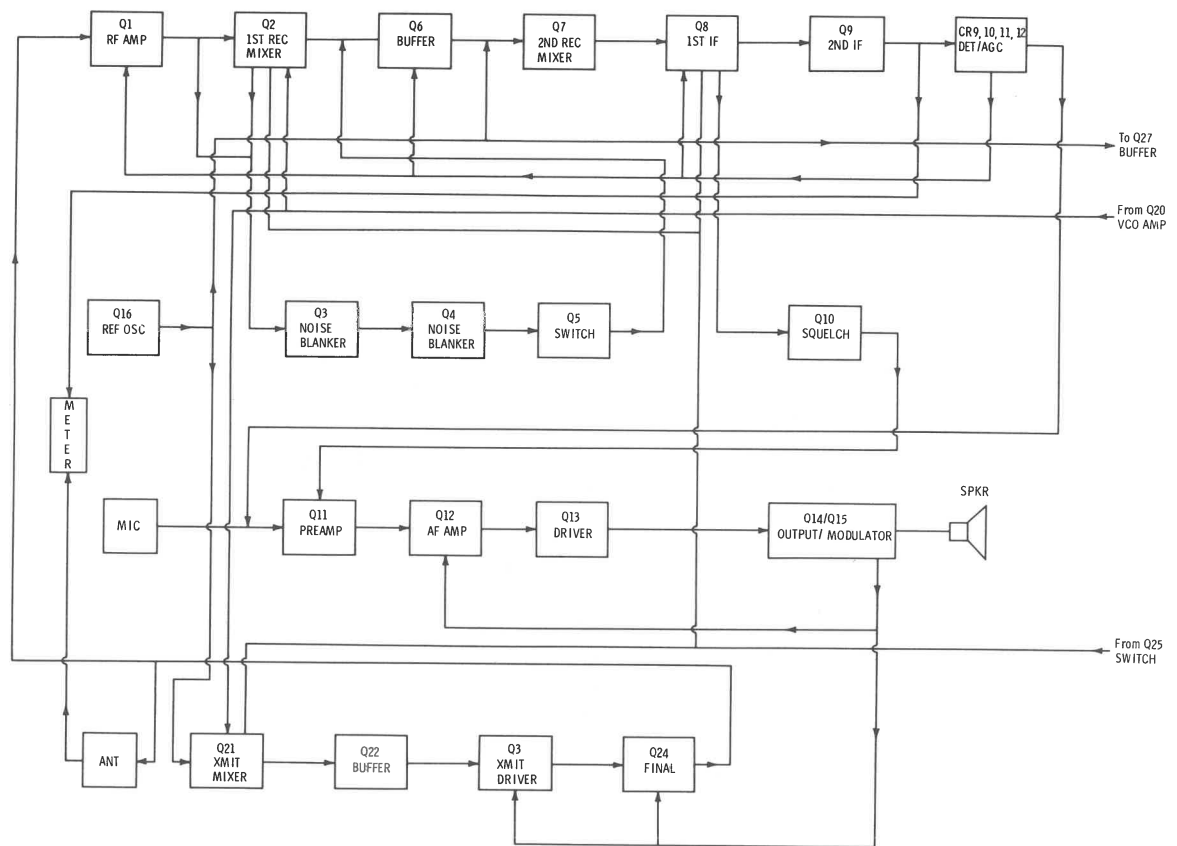
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MAIN BOARD



MAIN BOARD



BLOCK DIAGRAM

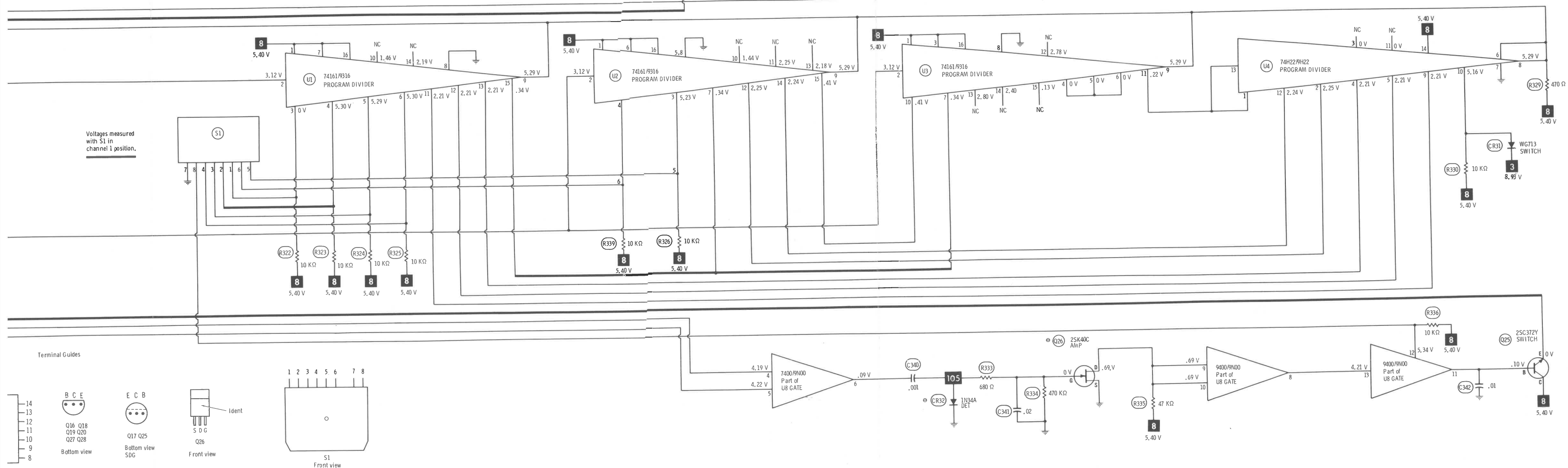
PARTS LIST AND DESCRIPTION

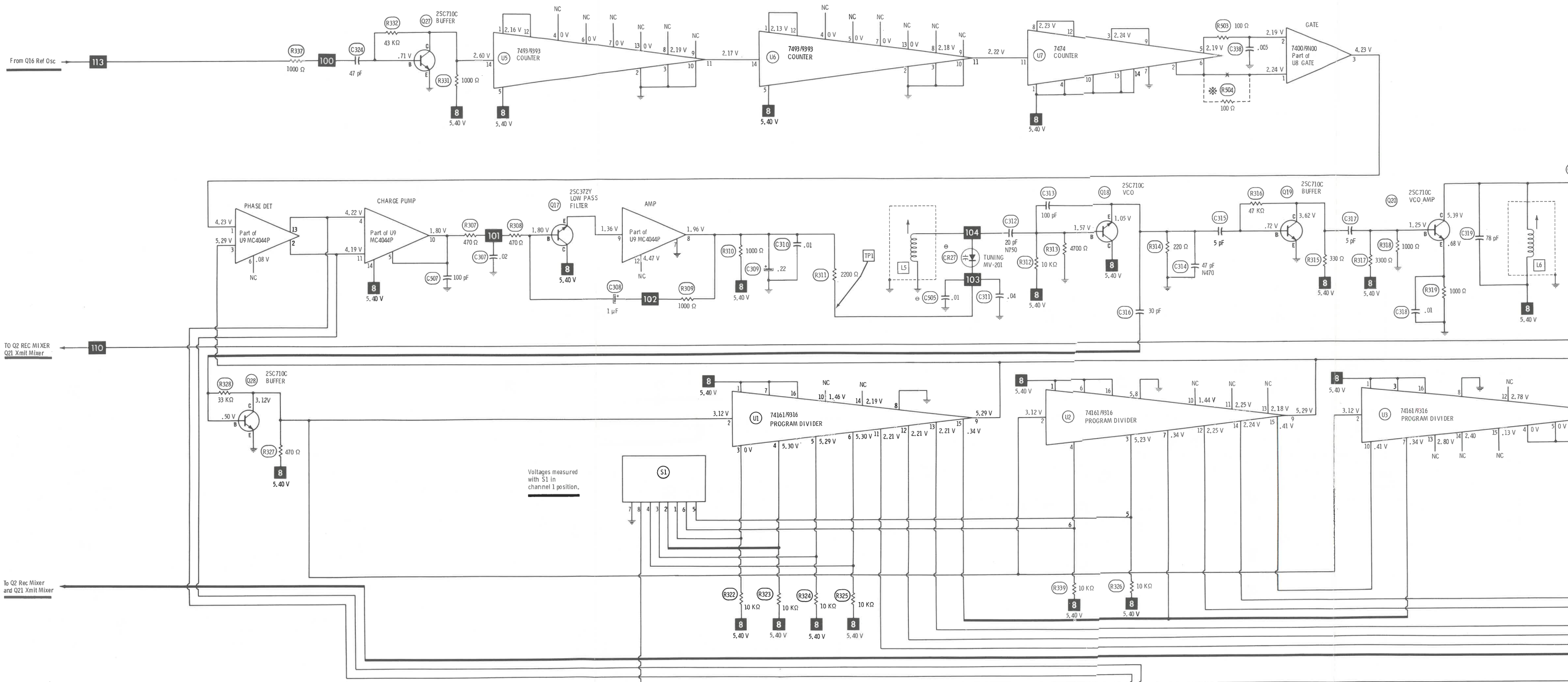
(When ordering parts, state Model, Part Number, and Description.)

SEMICONDUCTORS (Select replacement transistor for best results)

ITEM No.	TYPE No.	MFR. PART No.	REPLACEMENT DATA							
			GENERAL ELECTRIC PART No.	IR WORKMAN PART No.	MALLORY PART No.	MOTOROLA PART No.	RAYTHEON PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.
CR1	WG713	IP20-0145	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
CR3	MI301	(1)	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
	1N34A	IP20-0015	1N34AS	1N34A	PTC207	HEPR9134A	RE 47	SK3087	RT-200	ECG109
CR4	1N60	IP20-0060(1)	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
	1N34A	IP20-0015	1N34AS	1N34A	PTC207	HEPR9134A	RE 47	SK3087	RT-200	ECG109
CR5	1N60	IP20-0060(1)	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
	1N34A	IP20-0015	1N34AS	1N34A	PTC207	HEPR9134A	RE 47	SK3087	RT-200	ECG109
CR6	1N60	IP20-0060(1)	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
	1N34A	IP20-0015	1N34AS	1N34A	PTC207	HEPR9134A	RE 47	SK3087	RT-200	ECG109
CR7	1N60	IP20-0060(1)	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
	1N34A	IP20-0015	1N34AS	1N34A	PTC207	HEPR9134A	RE 47	SK3087	RT-200	ECG109
CR8	1N60	IP20-0060(1)	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
	1N34A	IP20-0015	1N34AS	1N34A	PTC207	HEPR9134A	RE 47	SK3087	RT-200	ECG109
CR9	1N60	IP20-0060	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
CR10	1N60	IP20-0060	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
CR11	1N60	IP20-0060	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
CR12	1N60	IP20-0060	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
CR13	1N60	IP20-0060	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
CR14	1S2472	IP20-0021	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
CR15	1S1555	(1)	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
	WG713	IP20-0145	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
CR16	1N34A	IP20-0015	1N34AS	1N34A	PTC207	HEPR9134A	RE 47	SK3087	RT-200	ECG109
	WG713	IP20-0145	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
CR17	1S1555	(1)	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
	WG713	IP20-0145	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
CR18	1S1555	(1)	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
	BZ-090	IP20-0019	GEZD-9.1	ZB9.1B	PTC207	HEPR9134A	RE 114	SK3087	RT-240	ECG139A
CR20	1N34A	IP20-0015	1N34AS	1N34A	PTC207	HEPR9134A	RE 47	SK3087	RT-200	ECG109
	1N60	IP20-0060(1)	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
CR21	WG713	IP20-0145	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
	1S1555	(1)	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
CR22	1S1211	IP20-0023	GEZD-9.1	5A4D	PTC301	HEPR0052	RE 49	SK3030	RT-213	ECG116
	1N4002	IP20-0120	GEZD-9.1	5A4D	PTC301	HEPR0052	RE 114	SK3030	RT-240	ECG139A
CR23	BZ-090	IP20-0019	GEZD-9.1	5A4D	PTC301	HEPR0052	RE 49	SK3030	RT-213	ECG116
	1N34A	IP20-0015	1N34AS	1N34A	PTC207	HEPR9134A	RE 47	SK3087	RT-200	ECG109
CR24	1N60	IP20-0060(1)	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
	WG713	IP20-0145	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
CR25	1S1555	(1)	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
	1S1211	IP20-0023	GEZD-9.1	5A4D	PTC301	HEPR0052	RE 49	SK3030	RT-213	ECG116
CR26	1N4002	IP20-0120	GEZD-9.1	5A4D	PTC301	HEPR0052	RE 114	SK3030	RT-240	ECG139A
	BZ-090	IP20-0019	GEZD-9.1	5A4D	PTC301	HEPR0052	RE 49	SK3030	RT-213	ECG116
CR27	1N34A	IP20-0015	1N34AS	1N34A	PTC207	HEPR9134A	RE 47	SK3087	RT-200	ECG109
	1N60	IP20-0060(1)	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
CR28	WG713	IP20-0145	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
	1S1555	(1)	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
CR29	1S1555	(1)	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
	WG713	IP20-0145	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
CR30	1S331	IP20-0203	GEZD-5.6	Z1204	ZB5.6A	HEPZ0407	RE 108	SK3057	RT-236	ECG5070
	WZ-058	(1)	GEZD-5.6	Z1204	ZB5.6A	HEPZ0407	RE 107	SK3057	RT-236	ECG136
CR31	WG713	IP20-0145	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
	1S1555	(1)	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
CR32	1N34A	IP20-0015	1N34AS	1N34A	PTC207	HEPR9134A	RE 47	SK3087	RT-200	ECG109
	1N60	IP20-0060(1)	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
CR33	1N34A	IP20-0015	1N34AS	1N34A	PTC207	HEPR9134A	RE 47	SK3087	RT-200	ECG109
	1N60	IP20-0060(1)	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
CR34	1N4002	IP20-0120	GE-504A	5A4D	1N4002	HEPR0052	RE 49	SK3030	RT-213	ECG116
	1N34A	IP20-0015	1N34AS	1N34A	PTC207	HEPR9134A	RE 47	SK3087	RT-200	ECG109
CR37	1N60	IP20-0060	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
	1N34A	IP20-0015	1N34AS	1N34A	PTC207	HEPR9134A	RE 47	SK3087	RT-200	ECG109
CR38	1N60	IP20-0060	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
	1N34A	IP20-0015	1N34AS	1N34A	PTC207	HEPR9134A	RE 47	SK3087	RT-200	ECG109
CR39	1N60	IP20-0060	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
	1N1448	(1)	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
Q1	1S1555	(1)	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
	2SC710B	IP20-0001	GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q2	2SC394-0	(1)	GE-61 *	(IR)2SC372	PTC121 *	HEPS0014 *	RE 9	SK3018 *	RT-309	ECG229 *
	2SK19GR	IP20-0012	GE-FET-2	FE-100	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312
Q3	2SK55E	(1)	GE-FET-2	FE-100	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312
	2SK19GR	IP20-0012	GE-FET-2	FE-100	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312
Q4	2SK55E	(1)	GE-FET-2	FE-100	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312
	2SK19GR	IP20-0012	GE-FET-2	FE-100	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312
Q5	2SK55E	(1)	GE-FET-2	FE-100	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312
	2SK40C	(1)	GE-FET-2	FE-100	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312
Q6	2SK30Y	IP20-0078(1)	GE-FET-2	FE-100	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312
	2SC710B	IP20-0001	GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q7	2SC394-0	(1)	GE-61 *	(IR)2SC372	PTC121 *	HEPS0014 *	RE 9	SK3018 *	RT-309	ECG229 *
	2SK19GR	IP20-0012	GE-FET-2	FE-100	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312
Q8	2SK55E	(1)	GE-FET-2	FE-100	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312
	2SC710C	IP20-0002	GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q9	2SC394-0	(1)	GE-61 *	(IR)2SC372	PTC121 *	HEPS0014 *	RE 9	SK3018 *	RT-309	ECG229 *
	2SC710C	IP20-0002	GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q10	2SC394-0	(1)	GE-61 *	(IR)2SC372	PTC121 *	HEPS0014 *	RE 9	SK3018 *	RT-309	ECG229 *
	2SA495-0	(1)	GE-221 *	(IR)2SA495	PTC103 *	HEPS0013 *	RE 26 *	SK3114	RT-303	ECG159 *
Q11	2SA495(1)	(1)	GE-221 *	(IR)2SA495	PTC103 *	HEPS0013 *	RE 26 *	SK3114	RT-303	ECG159 *
	2SA495Y	IP20-0159(1)	GE-221 *	(IR)2SA495	PTC103 *	HEPS0013 *	RE 26 *	SK3114	RT-303	ECG159 *
Q12	2SD30	(1)	GE-59	TR-08	PTC134	HEPG6011	RE 6	SK3010	RT-119	ECG103A
	2SD187R	IP20-0076(1)	GE-59	TR-08	PTC134	HEPG6011	RE 6	SK3010	RT-119	ECG103A
Q13	2SC372Y	IP20-0006	GE-61 *	(IR)2SC372	PTC121 *	HEPS0015 *	RE 13 *	SK3122	RT-308	ECG123A *
	2SC372Y	IP20-0006	GE-61 *	(IR)2SC372	PTC121 *	HEPS0015 *	RE 13 *	SK3122	RT-308	ECG123A *
Q14	2SC1014	IP20-0172	GE-273	WEP1014	PTC193	HEP1014	RE 213	SK3197	RT-137	ECG300
	2SC1226AQ	(1)	GE-215	WEP900	PTC186	HEP1014	RE 203	SK3197	RT-166	ECG186A
Q15	2SC1014	IP20-0172	GE-273	WEP1014	PTC193	HEP1014	RE 213	SK3197	RT-137	ECG300
	2SC1226AQ	(1)	GE-215	WEP900	PTC186	HEP1014	RE 203	SK3197	RT-166	ECG186A
Q16	2SC710C	IP20-0002	GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
	2SC372-0	(1)	GE-61 *	(IR)2SC372	PTC121 *	HEPS0014 *	RE 9	SK3018 *	RT-309	ECG229 *
Q17	2SC372Y	IP20-0006	GE-61 *	(IR)2SC372	PTC121 *	HEPS0014 *	RE 9	SK3018 *	RT-309	ECG229 *
	2SC710C	IP20-0002	GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q18	2SC372-0	(1)	GE-61 *	(IR)2SC372	PTC121 *	HEPS0014 *	RE 9	SK3018 *	RT-309	ECG229 *
	2SC710C	IP20-0002	GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q19	2SC372-0	(1)	GE-61 *	(IR)2SC372	PTC121 *	HEPS0014 *	RE 9	SK3018 *	RT-309	ECG229 *
	2SC710C	IP20-0002	GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q20	2SC372-0	(1)	GE-61 *	(IR)2SC372						







- ✕ 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:
- Squelch fully clockwise
 - ◆ 100% modulation
 - Transmit
- 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

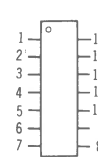
WITH CIRCUITRACE™

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Terminal Guides



Top view



Top view



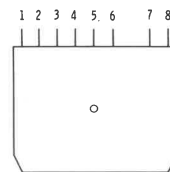
Bottom view



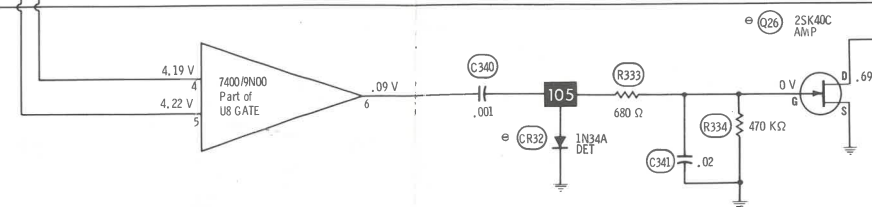
Bottom view

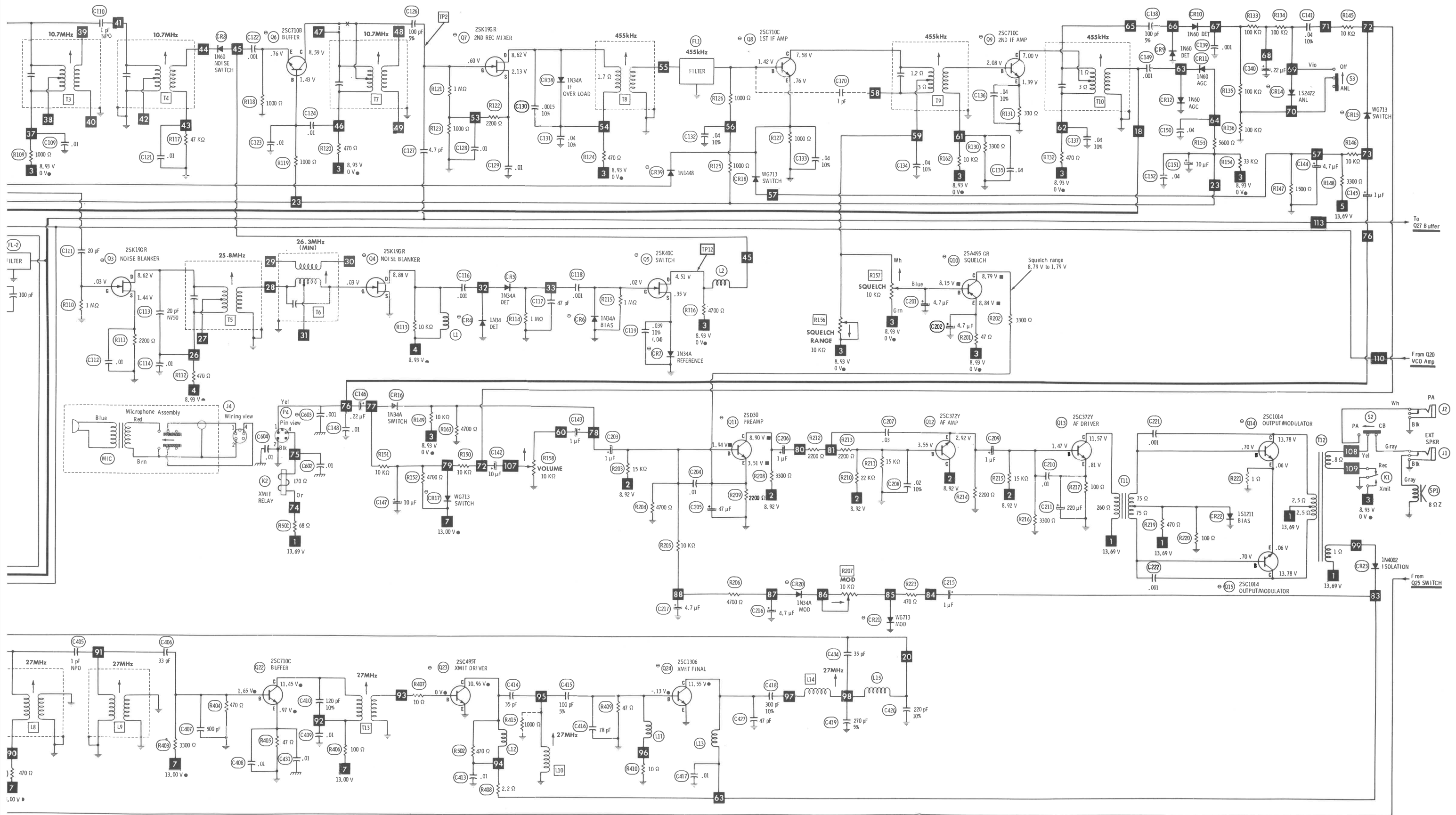


Front view



Front view





PARTS LIST AND DESCRIPTION (CONTINUED)

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

SEMICONDUCTORS (Select replacement transistor for best results) (cont)

ITEM No.	TYPE No.	MFR. PART No.	REPLACEMENT DATA							
			GENERAL ELECTRIC PART No.	IR WORKMAN PART No.	MALLORY PART No.	MOTOROLA PART No.	RAYTHEON PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.
Q21	3SK45B	IP20-0157	GE-FET-4	WEP905	PTC181	HEPF2004	RE 199	SK3050	RT-181	ECG222
	3SK45	(1)	GE-FET-4	WEP905	PTC181	HEPF2004	RE 199	SK3050	RT-181	ECG222
	3SK44	(1)	GE-FET-4	WEP905	PTC181	HEPF2004	RE 199	SK3050	RT-181	ECG222
Q22	2SC710C	IP20-0002	GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q23	2SC495T	(12)	GE-270	WEP913	PTC180		RE 209		RT-162	ECG295
	2SC1957	(1)	GE-270	WEP913	PTC180	HEPS3044	RE 209			ECG295
	2SC495	IP20-0103(1)	GE-270	WEP913	PTC180		RE 209		RT-162	ECG295
Q24	2SC1306	IP20-0155	GE-215	WEP1306	PTC186		RE 203	SK3197	RT-146	ECG235
	2SC1678	(1)	GE-322	WEP1678	PTC186		RE 203	SK3197	RT-146	ECG235
Q25	2SC372Y	IP20-0006	GE-61 *	(IR)2SC372	PTC121 *	HEPS0014 *	RE 9	SK3018 *	RT-309	ECG229 *
Q26	2SK40C		GE-FET-2	FE-100	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312
	2SK30Y	IP20-0078(1)	GE-FET-2	FE-100	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312
Q27	2SC710C	IP20-0002	GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q28	2SC710C	IP20-0002	GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q29	2SC1061C		GE-66	TR-76	PTC154		RE 21	SK3054	RT-197	ECG152
	2SC1061	IP20-0007(1)	GE-66	TR-76	PTC154		RE 21	SK3054	RT-197	ECG152
	2SD235-0	(1)	GE-66	TR-76		HEPS5027	RE 21	SK3054	RT-197	ECG152
Q30	2SC372Y	IP20-0006	GE-61 *	(IR)2SC372	PTC121 *	HEPS0014 *	RE 9	SK3018 *	RT-309	ECG229 *
U1	9316/74161	IP20-0209					RE 386-IC		TVCM-506	ECG74161
U2	9316/74161	IP20-0209					RE 386-IC		TVCM-506	ECG74161
U3	9316/74161	IP20-0209					RE 386-IC		TVCM-506	ECG74161
U4	74H22/9H22	IP20-0208							TVCM-501	ECG74H22
U5	7493/9393	IP20-0207					RE 385-IC		TVCM-504	ECG7493A
U6	7493/9393	IP20-0207							TVCM-504	ECG7483A
U7	7474/9N74	IP20-0206		WEP7474					TVCM-502	ECG7474
U8	7400/9N00	IP20-0205		WEP7400		HEPC3000P			TVCM-500	ECG7400
U9	MC4044P	IP20-0210				HEPC3806P			TVCM-70	ECG974

* Lead configuration may vary from original.

(1) Used in some versions.

(12) Rating 5 W @ 800MA.

(13) Rating 12W @ 3 A.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA			
			CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
					Q-LINE	GENERAL LINE
C140	.22 25V	IP22-0044		TDC224M050EL	QDT1-10	SD50-R229
C142	10 16V	IP22-0004		VTT10B25	QV1-41	EV-1222
C143	1 50V	IP22-0001	PC10-25	VTT1A50	QV1-11	EV-1615
C144	4.7 25V	IP22-0003	PC5-50	VTT4R7B50	QV1-27	EV-1319
	47 16V	IP22-0006 (1)	PC50-16	VTT47D16	QV1-73	EV-1226
C145	1 50V	IP22-0001	PC1-50	VTT1A50	QV1-11	EV-1615
C146	.22 25V	IP22-0044		TDC224M050EL	QDT1-10	SD50-R229
C147	10 16V	IP22-0004	PC10-25	VTT10B25	QV1-41	EV-1222
C151	10 16V	IP22-0004	PC10-25	VTT10B25	QV1-41	EV-1222
C153	1 50V	IP22-0001	PC1-50	VTT1A50	QV1-11	EV-1615
C156	220 16V	IP22-0009	PC250-25	VTT220H16	QV1-117	EV-1240
C158	100 16V	IP22-0008	PC100-16	VTT100F16	QV1-95	EV-1230
C201	4.7 25V	IP22-0003	PC5-50	VTT4R7B50	QV1-27	EV-1319
C202	4.7 25V	IP22-0003	PC5-50	VTT4R7B50	QV1-27	EV-1319
C203	1 50V	IP22-0001	PC1-50	VTT1A50	QV1-11	EV-1615
C205	47 16V	IP22-0006	PC50-16	VTT47D16	QV1-73	EV-1226
C206	1 50V	IP22-0001	PC1-50	VTT1A50	QV1-11	EV-1615
C209	1 50V	IP22-0001	PC1-50	VTT1A50	QV1-11	EV-1615
C211	220 16V	IP22-0009	PC250-25	VTT220H16	QV1-117	EV-1240
C213	1000 16V	IP22-0051	PC1000-16	VTT1000L16	QV1-183	EV-1260
C214	1000 16V	IP22-0051	PC1000-16	VTT1000L16	QV1-183	EV-1260
C215	1 50V	IP22-0001	PC1-50	VTT1A50	QV1-11	EV-1615
C216	4.7 25V	IP22-0003	PC5-50	VTT4R7B50	QV1-27	EV-1319
C217	4.7 25V	IP22-0003	PC5-50	VTT4R7B50	QV1-27	EV-1319
C218	220 16V	IP22-0009	PC250-25	VTT220H16	QV1-117	EV-1240
C308	1 50V	IP22-0001	PC1-50	VTT1A50	QV1-11	EV-1615
C309	.22 25V	IP22-0044		TDC224M050EL	QDT1-10	SD50-R229
C326	220 16V	IP22-0009	PC250-25	VTT220H16	QV1-117	EV-1240
C327	100 16V	IP22-0008	PC100-16	VTT100F16	QV1-95	EV-1230
C328	220 16V	IP22-0009	PC250-25	VTT220H16	QV1-117	EV-1240
C329	220 16V	IP22-0009	PC250-25	VTT220H16	QV1-117	EV-1240
C425	1 50V	IP22-0001	PC1-50	VTT1A50	QV1-11	EV-1615
C509	33 16V		PC30-25	VTT33D25	QV1-63	EV-1325

(1) Used in some versions.

CAPACITORS

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA				
			CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
						Q-LINE	GENERAL LINE
C101	30 N470				*		10TCT-Q30
C102	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C103	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C104	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C105	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C106	22			CD15ED220J03	SX422	QW1-11	MMA-220
C107	47			CD15ED470J03	SX447	QW1-19	MMA-470
C108	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C109	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C110	1 NPO				CN0510		10TCC-V10
C111	20			CD15ED200J03	SX420	QW1-10	MMA-200
C112	.01		DC-103	MGP01	TA110	QC2-141	TG-S10

PARTS LIST AND DESCRIPTION (CONTINUED)

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

CAPACITORS (cont)

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA				
			CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
						Q-LINE	GENERAL LINE
C113	20	IP22-0046	DC-103	CD15ED200J03	SX420	QW1-10	MWA-200
C114	.01			MGP01	TA110	QC2-141	TG-S10
C115	.01			MGP01	TA110	QC2-141	TG-S10
C116	.001			GP1000	GP210	QC2-81	5GA-D10
C117	.47		DD-102G	CD15ED470J03	SX447	QW1-19	MWA-470
C118	.001			GP1000	GP210	QC2-81	5GA-D10
C119	.04			DPMS6S39	PVC6139		6PS-S39
C120	.01			MGP01	TA110	QC2-141	TG-S10
C121	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C122	.001		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C123	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C124	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C126	100		DD-101	GP100	GP310		10TS-T10
C127	4.7			CD15CD050D03		QW1-2	MWA-050
C128	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C129	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C130	.0015			CD19FD152J03	SX215		MWC-152
C131	.04			DPMS6S39	PVC6139		6PS-S39
C132	.04			DPMS6S39	PVC6139		6PS-S39
C133	.04			DPMS6S39	PVC6139		6PS-S39
C134	.04			DPMS6S39	PVC6139		6PS-S39
C135	.04			DPMS6S39	PVC6139		6PS-S39
C136	.04			DPMS6S39	PVC6139		6PS-S39
C137	.04			DPMS6S39	PVC6139		6PS-S39
C138	100			CD15FD101J03	SX310	QW1-27	MWA-101
C139	.001		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C141	.04			DPMS6S39	PVC6139		6PS-S39
C148	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C149	.001		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C150	.04			DPMS6S39	PVC6139		6PS-S39
C152	.04				GP140		5GA-S40
C154	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C155	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C159	.001		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C204	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C207	.03			DPMS6S33	EW6133		6PS-S33
C208	.02			DPMS2S2	PVC212		2PS-S20
C210	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C221	.001		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C222	.001		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C301	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C302	330			CD15FD331J03	SX333	QW1-39	MWA-331
C303	100			CD15FD101J03	SX310	QW1-27	MWA-101
C304	22 N750		DTN-22	N22	CN7422		10TCU-Q22
C305	.40						
C306	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C307	.02			DPMS2S2	PVC212		2PS-S20
C310	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C311	.04			DPMS6S39	PVC6139		6PS-S39
C312	20 N750		DTN-20	N20	CN7420		10TCU-Q20
C313	100			CD15FD101J03	SX310	QW1-27	MWA-101
C314	47 N470				*		10TCT-Q47
C315	5			CD15CD050D03		QW1-2	MWA-050
C316	30			CD15ED300J03	SX430	QW1-14	MWA-300
C317	5			CD15CD050D03		QW1-2	MWA-050
C318	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C319	78			CD15ED750J03	SX475	QW1-24	MWA-750
C320	4.7			CD15CD050D03		QW1-2	MWA-050
C321	3			CD15CD050D03		QW1-2	MWA-050
C322	12			CD12CD120J03		QW1-7	MWA-120
C324	47			CD15ED470J03	SX447	QW1-19	MWA-470
C325	47			CD15ED470J03	SX447	QW1-19	MWA-470
C330	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C331	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C332	.1			DPMS2P1	EWFTA010	QF1-215	1PB-P10
C333	.2			DPMS2P2	PVC602		2PS-P20
C334	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C335	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C336	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C337	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C338	.005			WMF105	EWFTA250		
C339	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C340	.001			DPMS6D1	EWFTA210	QF1-1	1PB-D10
C341	.02			DPMS2S2	PVC212		2PS-S20
C342	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C343	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C344	.04				GP140		5GA-S40
C345	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C346	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C347	5			CD15CD050D03		QW1-2	MWA-050
C349	56			CD15ED560J03	SX456	QW1-21	MWA-560
C350	4			CD15CD050D03		QW1-2	MWA-050
C360	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C401	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C402	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C403	30 N470	(1)					10TCT-Q30
C404	.04				GP140		5GA-S40
C405	1 NPO				CN0510		10TCC-V10
C406	33 N470				*		10TCT-Q33
C407	500			CD15FD511J03	SX351	QW1-43	MWA-511
C408	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C409	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C410	120			CD15FD121J03	SX312	QW1-29	MWA-121
C411	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C412	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C413	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C414	35			CD15ED360J03	SX436		MWA-360

PARTS LIST AND DESCRIPTION (CONTINUED)

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

CAPACITORS (cont)

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA				
			CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
						Q-LINE	GENERAL LINE
C415	100	IP22-0045	DC-103	CD15FD101J03	SX310	QW1-27	MMA-101
C416	78			CD15ED750J03	SX475	QW1-24	MMA-750
C417	.01			MGP01	TA110	QC2-141	TG-S10
C418	300			CD15FD301J03	SX330	QW1-38	MMA-301
C419	270			CD15FD271J03	SX327	QW1-37	MMA-271
C420	220			CD15FD221J03	SX322	QW1-35	MMA-221
C421	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C422	160			CD15FD161J03	SX316	QW1-32	MMA-161
C423	10						
C424	1.5						
C426	.01	(1)	DTZ-1R5	NP01P5	CN0515		10TCC-V15
C427	47		DTZ-3R3	NP03P3	CN0533		10TCC-V33
C428	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C429	12		DC-103	CD15ED470J03	SX447	QW1-19	MMA-470
C430	.01			MGP01	TA110	QC2-141	TG-S10
C431	.01				CN0412		10TCC-Q12
C434	35			CD15ED360J03	SX436	QC2-141	TG-S10
C501	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C502	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C503	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C504	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C505	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C507	100		DC-103	CD15FD101J03	SX310	QW1-27	MMA-101
C601	.01			MGP01	TA110	QC2-141	TG-S10
C602	.01				GP1000	QC2-81	5GA-D10
C603	.001		DD-102G	GP1000	GP210		

*Not normally in distributor's stock. Available thru distributor on order to manufacturer.

(1) Used in some versions.

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

ITEM No.	FUNCTION	RESISTANCE	REPLACEMENT DATA				
			MFR. PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	MALLORY PART No.	TRW PART No.
R155	S Meter	10K	IP24-0005	T-10K	C-103	MTC14L1	X201R103B
R156	Squelch Range	10K	IP24-0005	T-10K	C-103	MTC14L1	X201R103B
R157	Squelch	10K	IP24-0017				
R158	Volume/Switch	10K	IP24-0014				
R207	Modulation	10K	IP24-0005	T-10K	C-103	MTC14L1	X201R103B
R413	RF Meter	100K	IP24-0002	T-100K (2)	C-104 (2)	MTC15L1 (2)	X201R104B (2)

(2) Cut off one of the end terminals and bend to fit PC board.

COILS (RF-IF)

ITEM No.	FUNCTION	REPLACEMENT DATA			REMARKS
		PART No.	OTHER IDENTIFICATION	MILLER PART No.	
L1	RF Choke (470uH)	IP21-0195			
L2	RF Choke (470uH)	IP21-0195			
L3	Ref Oscillator (10MHz)	IP21-0279	Z353Z		
L4	RF Choke (22uH)	IP21-0072		9330-32	
L5	VCO Oscillator	IP21-0281	Z355N		
L6	VCO Amp	IP21-0280	C354N		
L7	RF Choke (3.3uH)	IP21-0183		9230-32	
L8	Xmit Mixer (27MHz)	IP21-0280	C354N		
L9	Harmonic Suppressor (27MHz)	IP21-0280	C354N		
L10	Xmit Driver (27MHz)	IP21-0282	C352Z		
L11	RF Choke (10uH)	IP21-0073		4622	
L12	RF Choke (2.5uH)	IP21-0227			
L13	RF Choke (.65uH)	IP21-0071			
L14	Xmit Final (27MHz)	IP21-0096	C045Z	CB144	
L15	Pi Filter (27MHz)	IP21-0096	C045Z	CB144	
L16	Antenna Load (.22uH)	IP21-0098		4584	
L17	TVI Trap (54MHz)	IP21-0099		4594	
L20	VCO Amp				
T1	Rec Antenna (27MHz)	IP21-0236	C294D		
T2	Rec RF (27MHz)	IP21-0277	C337B		
T3	Rec Mixer (10.7MHz)	IP21-0239	F001A		
T4	Rec Mixer (10.7MHz)	IP21-0239	F001A		
T5	Noise Blanker (25.8MHz)	IP21-0239	F001A		
T6	Noise Blanker (26.3MHz)	IP21-0239	F001A		
T7	Rec Buffer (10.7MHz)	IP21-0239	F001A		
T8	IF (455kHz)	IP21-0198	A086A		
T9	IF (455kHz)	IP21-0244	227B		
T10	IF (455kHz)	IP21-0278	A293A		
T13	Xmit Buffer (27MHz)	IP21-0093	C0427		

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000~)	MFR. PART No.	THORDARSON PART No.	TRIAD PART No.	
L18	1.7A	.21	1.7mH	IP21-0112 K-18 (1)	TR555		(1) Number on unit.

PAGE MODEL CB166

PARTS LIST AND DESCRIPTION (CONTINUED)

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

TRANSFORMER (Driver)

ITEM No.	TURNS RATIO			REPLACEMENT DATA			NOTES
	PRI.	SEC. 1	SEC. 2	MFGR. PART No.	THORDARSON PART No.	TRIAD PART No.	
T11	1.4	1		IP21-0075 A-41 (1)	TR651		(1) Number on unit.

TRANSFORMER (Audio Output)

ITEM No.	IMPEDANCE			REPLACEMENT DATA			NOTES
	PRI.	SEC.		MFGR. PART No.	THORDARSON PART No.	TRIAD PART No.	
T12	32	1 8	2 13.5	IP21-0283 E-67 (1)	TR822		(1) Number on unit

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		MFGR. PART No.	QUAM PART No.	
SP1	3" PM 8 ohms	IP29-0017	20A5Z8	

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 Amp			AGC2	HDJ	312002	150145	F62-2

MICROPHONE

ITEM No.	REPLACEMENT DATA				CONNECTION DATA							
	MFGR. PART No.	GC PART No.	GC NOISE CANCEL	GC POWER	GC CONNECTOR	GC Red	GC Shield	GC Yellow	GC Blue	GC White	GC Black	
MIC	IP29-0016	18-032	18-034	18-010	18-092	1	2	4	NC	NC	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
X1	10.240	IP31-0084	CA80W10240	Ref. Osc.					

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
CR35	Led	IP28-0010	Rec. Yellow (13mA @ 1.96V)
CR36	Led	IP28-0011	Xmit Red (SL103) (13.5mA @ 1.60V)
DS1	Lamp	IP28-0009	Channel Indicator (39mA @ 13.69V)
DS2	Lamp	IP28-0009	Meter (40mA @ 13.69V)
FL1	Ceramic Filter	IP31-0048	455kHz (LF-B6)
J1	Socket	IP26-0005	Ext. Speaker
J2	Socket	IP26-0005	PA
J3	Socket	IP26-0013	Antenna
J4	Socket	IP26-0014	Microphone
K1	Relay	IP32-0007	Xmit (12V)
K2	Relay	IP32-0009	Xmit - Rec (12V)
M1	Meter	IP27-0011	"RF/S" (A-36)
S1	Switch	IP25-0043	Channel Selector
S2	Switch	IP25-0044	PA/CB
S3	Switch	IP25-0044	ANL
S4	Switch	IP25-0044	NB

CABINETS & CABINET PARTS (When ordering specify model, chassis & color)

ITEM	PART No.	ITEM	PART No.
Escutcheon	IP30-0167	Microphone Hanger	IP30-0061
Mounting Bracket	IP30-0175	Knob, Channel Selector	IP30-0165
Cabinet	IP30-0174	Knob, Volume/Squelch	IP30-0166