



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.



PRESIDENT MODEL TEDDY R.

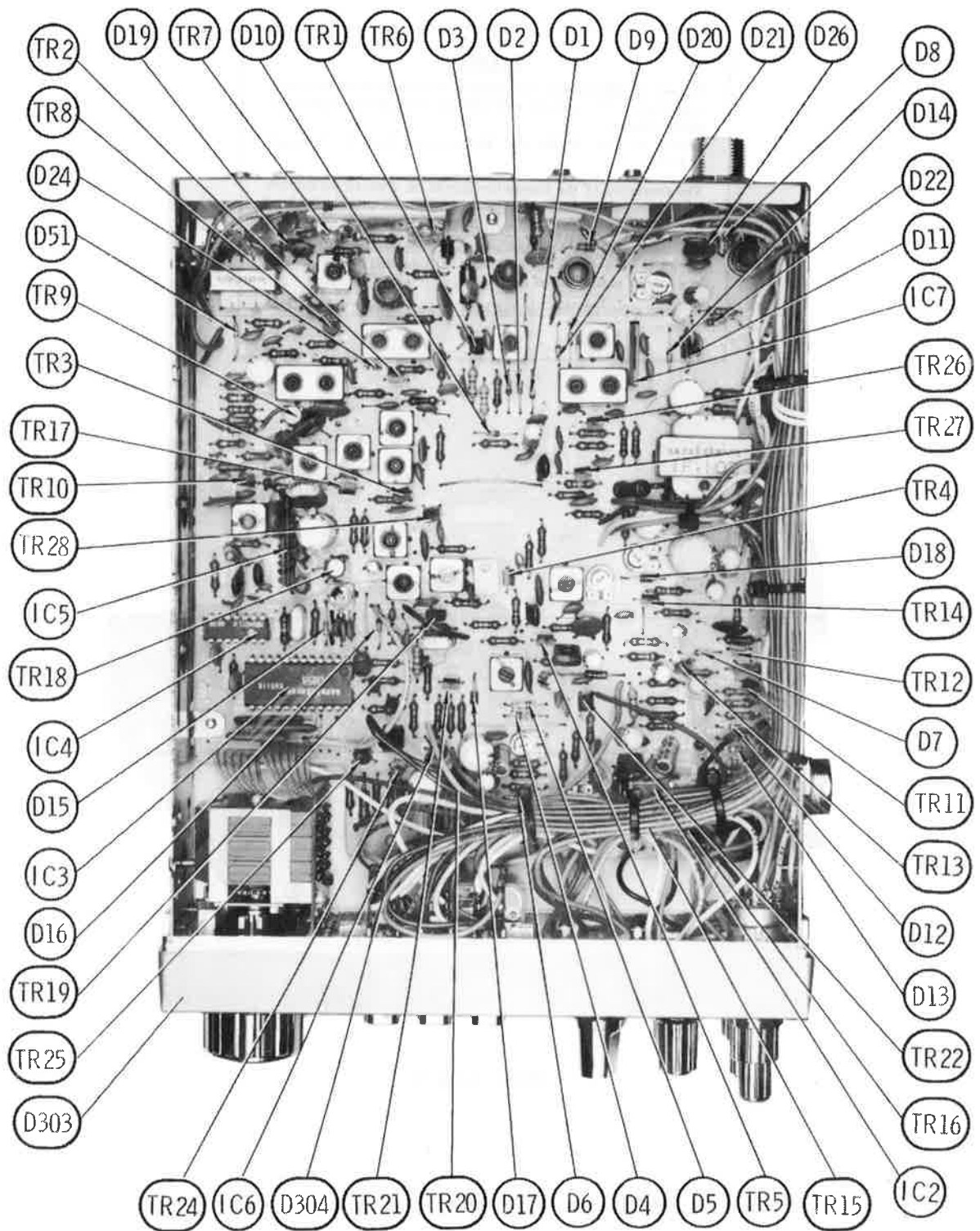
MODEL Teddy R.

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

© 1977 Howard W. Sams & Co., Inc.

Printed in U. S. of America

7CE518



CHASSIS - BOTTOM

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
 L6, L7, L8, L10, L11, L12, L15 5009
 L1, L2, L3, L4, L5, L16, L17, L18, L20, L21, L24, L27, L28 ... 9440
 VC1 5000

SYNTHESIZER ALIGNMENT

TEST EQUIPMENT	TRANSCIVER	ADJUST	REMARKS
Input of oscilloscope to TP1.	Ch. 19	L5	Adjust for maximum.
Input of frequency counter to TP1.	Ch. 19	VC1	Adjust for 10.240MHz.
Input of DC meter to TP5.	Ch. 19	L20	Adjust for 3.0 volts.
Input of oscilloscope to TP6.	Ch. 19	L21	Adjust for maximum.
Input of frequency counter to TP6.	Ch. 19	L24	Adjust for 37.880MHz.

PRESIDENT MODEL TEDDY R.

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	TRANSCIVER	ADJUST	REMARKS
Output of signal generator thru .01uF to TP10. 455kHz, 1000Hz @ 30% modulation.	Ch. 19 RF Gain-Maxium Delta Tune-Mid range.	L8,L7,L6	Adjust for maximum output.
Output of signal generator thru .01uF to TP11. 10.695MHz, 1000Hz @ 30% modulation.	Ch. 19	L4,L3	Adjust for maximum output.
Output of signal generator thru .01uF to antenna jack. 27.185MHz, 1000Hz @ 30% modulation.	Ch. 19	L2,L1	Adjust for maximum output. Repeat above steps, if necessary.
Output of signal generator thru .01uF to antenna jack. 23.5MHz unmodulated. Input of RF VTVM to TP7.	Ch. 19	L28,L27	Adjust for maximum.

RECEIVER ADJUSTMENTS

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

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Output of signal generator thru .01uF to antenna jack. 27.185MHz, 1000Hz @ 30% modulation. Output .9uV.	Ch. 19 RF Gain-Maximum Delta Tune-Mid range. Volume-Maximum	VR2	AGC Adjust VR2 for 2 volts audio.
Output of signal generator thru .01uF to antenna jack. 27.185MHz, 1000Hz @ 30% modulation. Output 500uV.	Ch. 19	VR3	SQUELCH RANGE Set squelch control VR302 fully clockwise. Adjust VR3 so that squelch just breaks.
Output of signal generator thru .01uF to antenna jack. 27.185MHz, 1000Hz @ 30% modulation. Output 100uV.	Ch. 19	VR1	S METER Adjust for 9 on S scale of meter.

TRANSMITTER ALIGNMENT

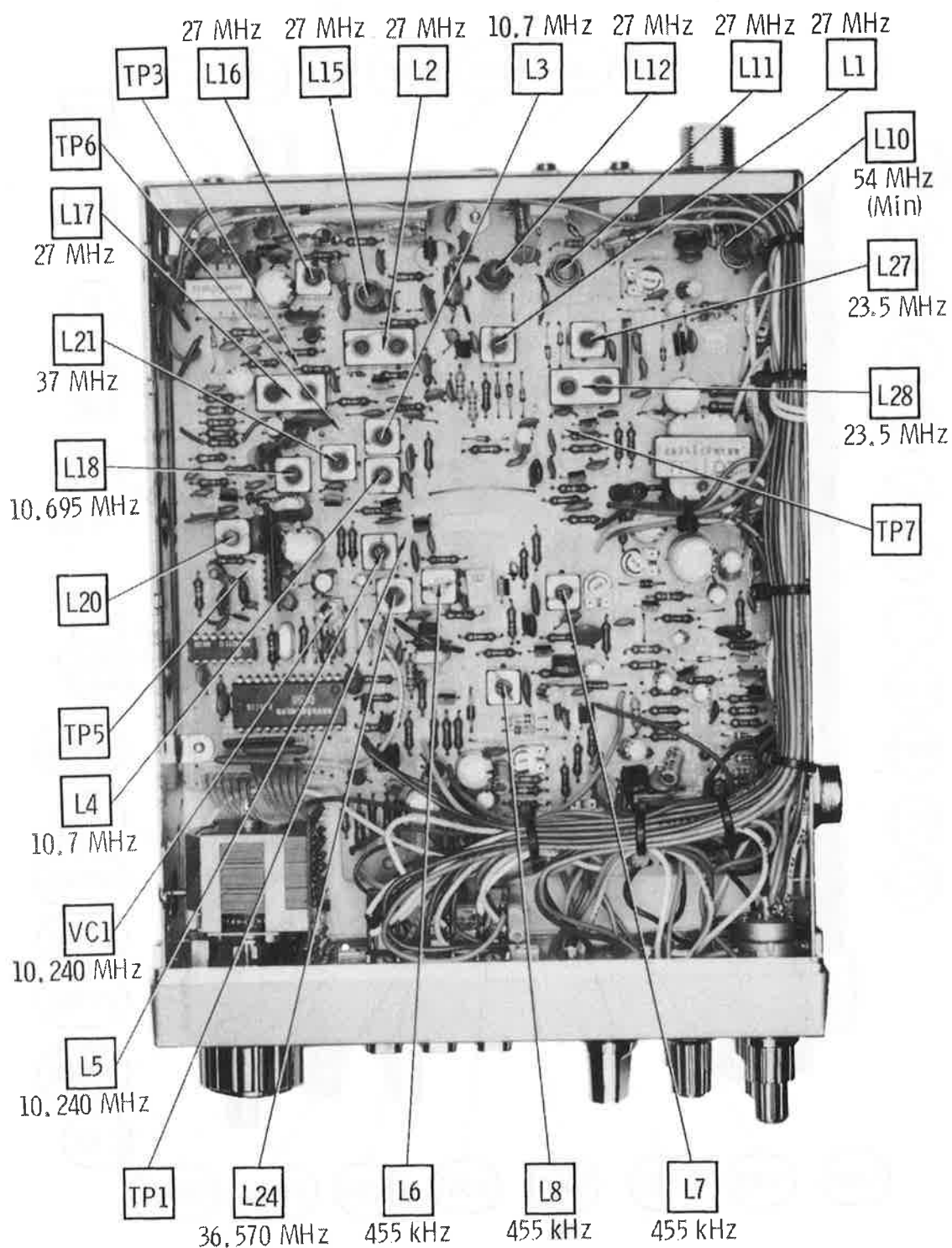
Connect an RF wattmeter and 50-ohm, 25-watt dummy load to antenna connector.
NOTE: Be sure to check transmit frequency and power on all active channels after alignment of transmitter.
See page 4 for channel frequencies.

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Input of oscilloscope to TP3.	Ch. 19	L18,L17	Adjust for maximum.
	Ch. 19	L16,L15, L12,L11	Adjust for maximum.
	Ch. 19	L12	Adjust for 3.8 watts.
Input of spectrum analyzer to antenna jack.	Ch. 19	L10	Adjust for MINIMUM at 54MHz.

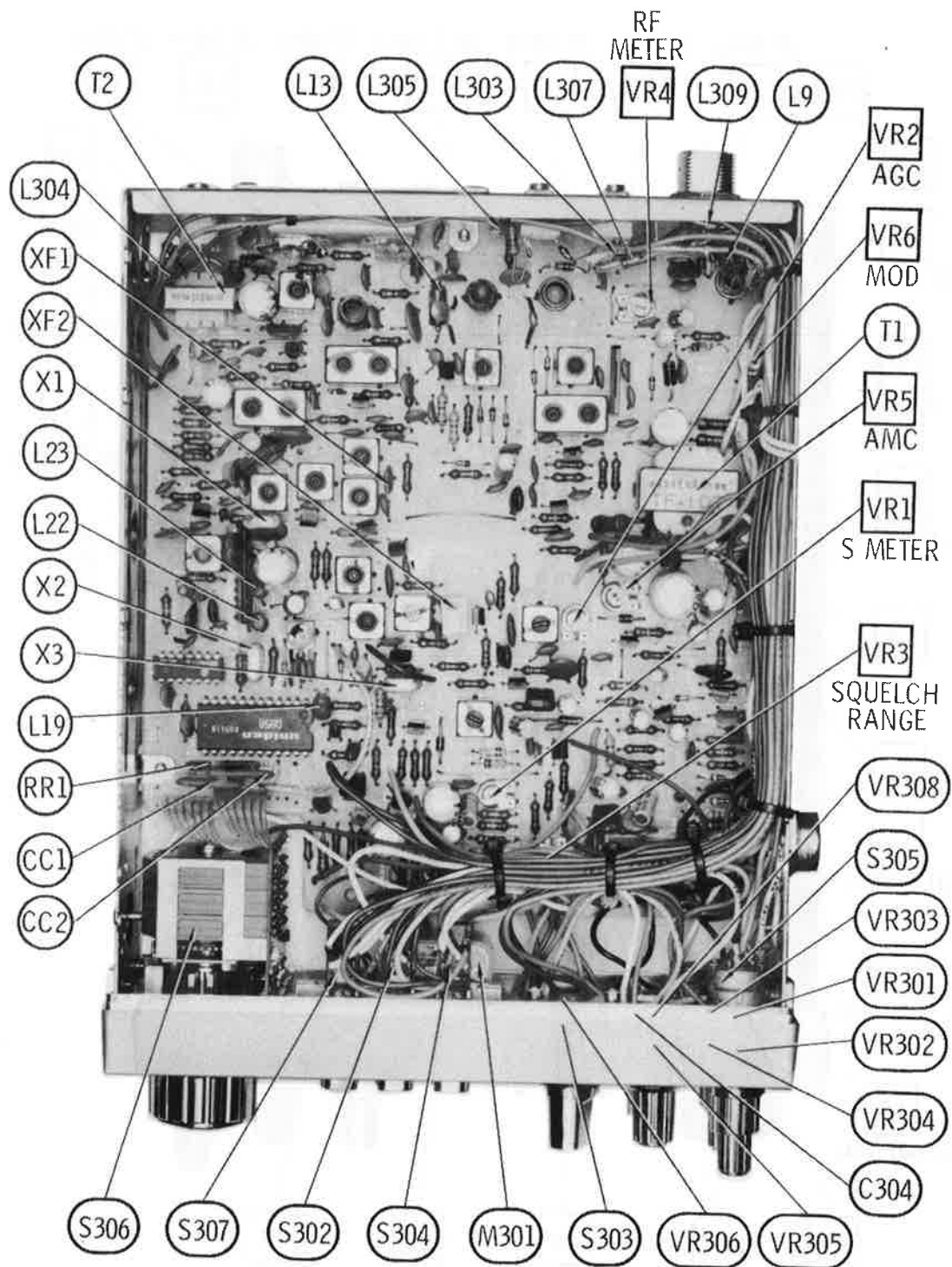
TRANSMITTER ADJUSTMENTS

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.

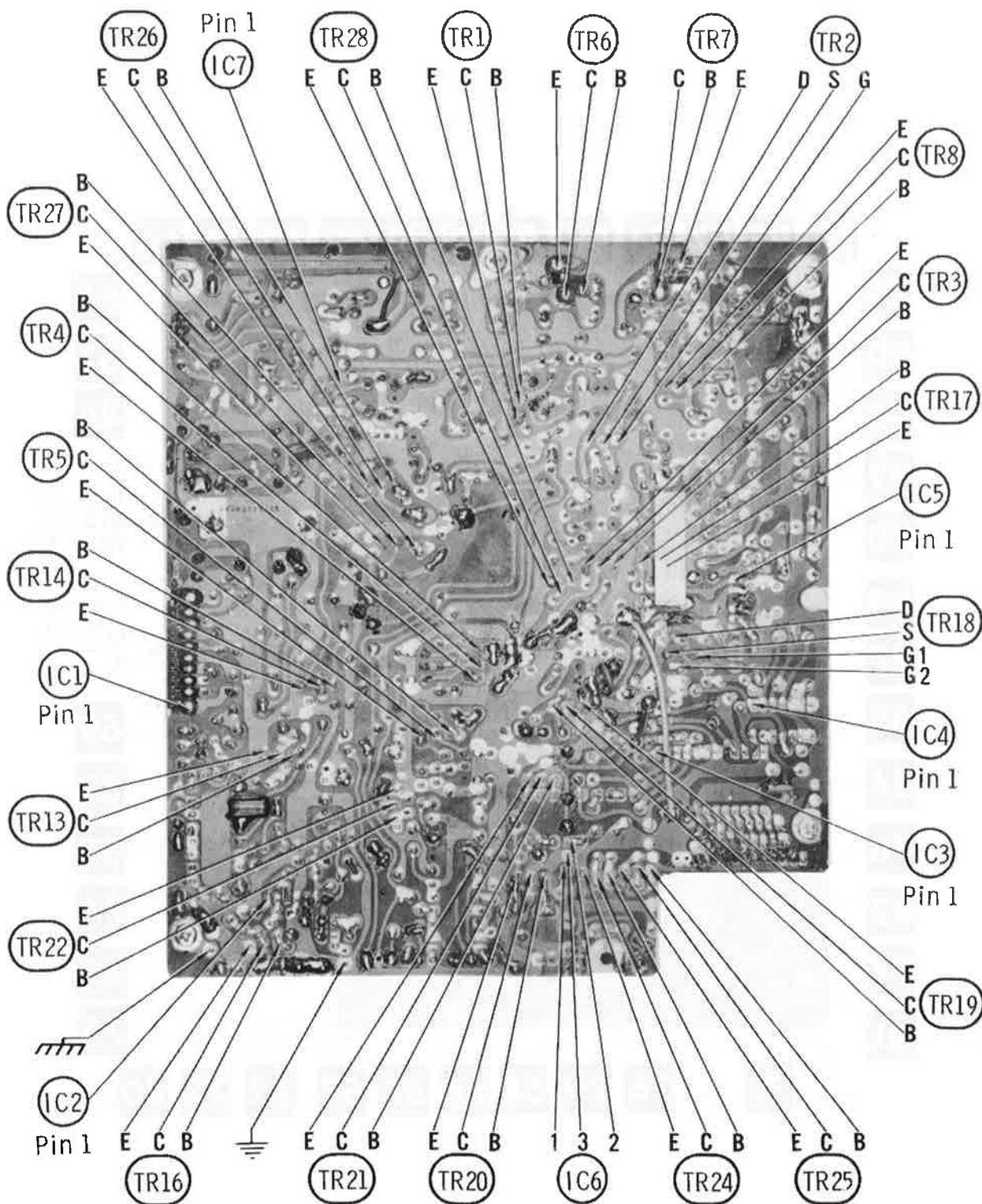
TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Modulation meter to antenna jack. Inject a 1000Hz 10mV signal at mic input.	Ch. 19 Mic Gain-Maximum	VR5	AMC Adjust VR5 for 95% modulation.
Modulation meter to antenna jack. Inject a 1000Hz 10mV signal at mic input.	Ch. 19 Mic Gain-Maximum	VR6	MODULATION Adjust VR6 so that panel MOD meter agrees with external modulation meter.
	Ch. 19	VR4	RF PANEL METER Adjust VR4 so that RF panel meter agrees with RF wattmeter.



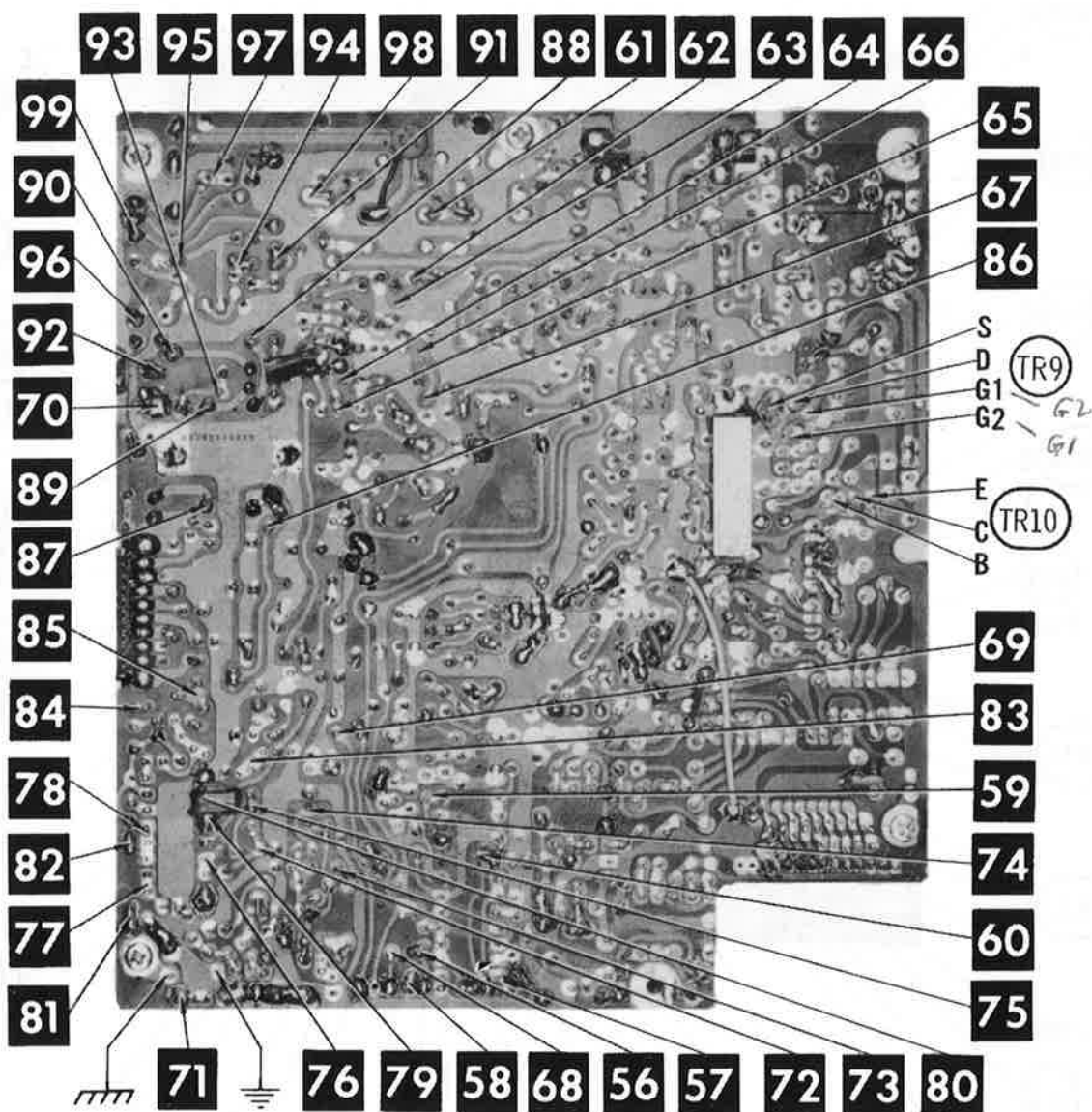
CHASSIS - BOTTOM



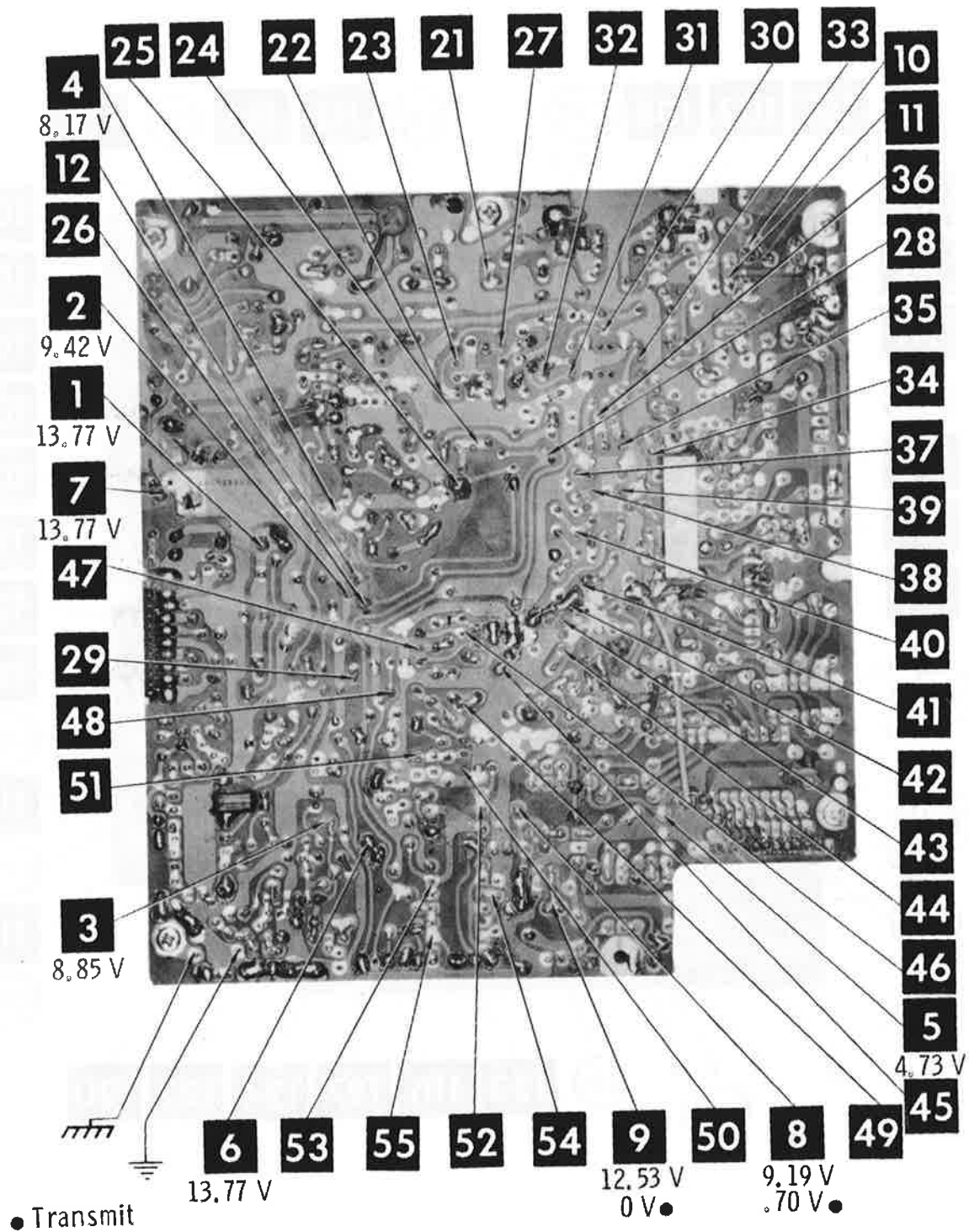
CHASSIS -BOTTOM



MAIN BOARD

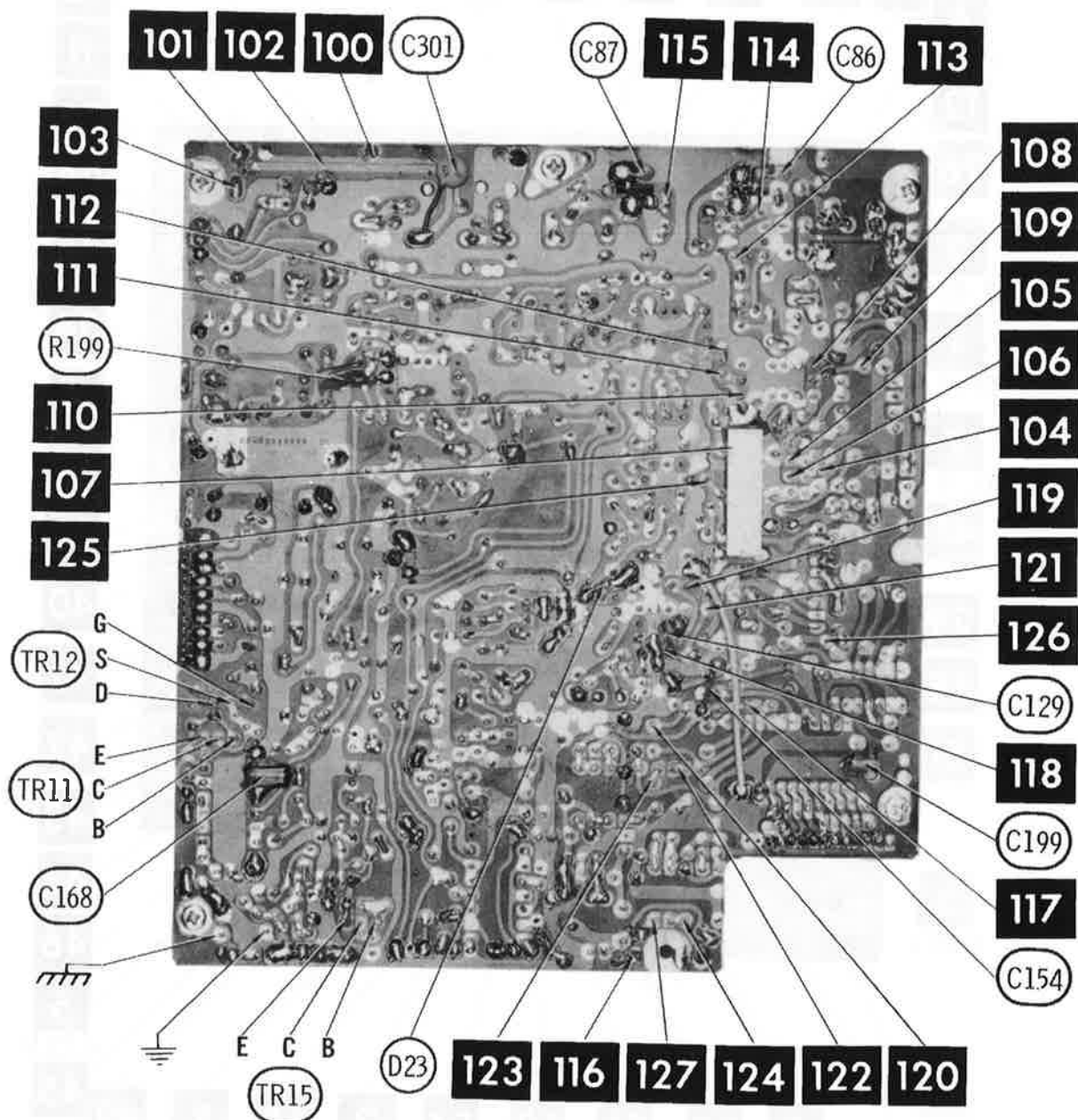


MAIN BOARD

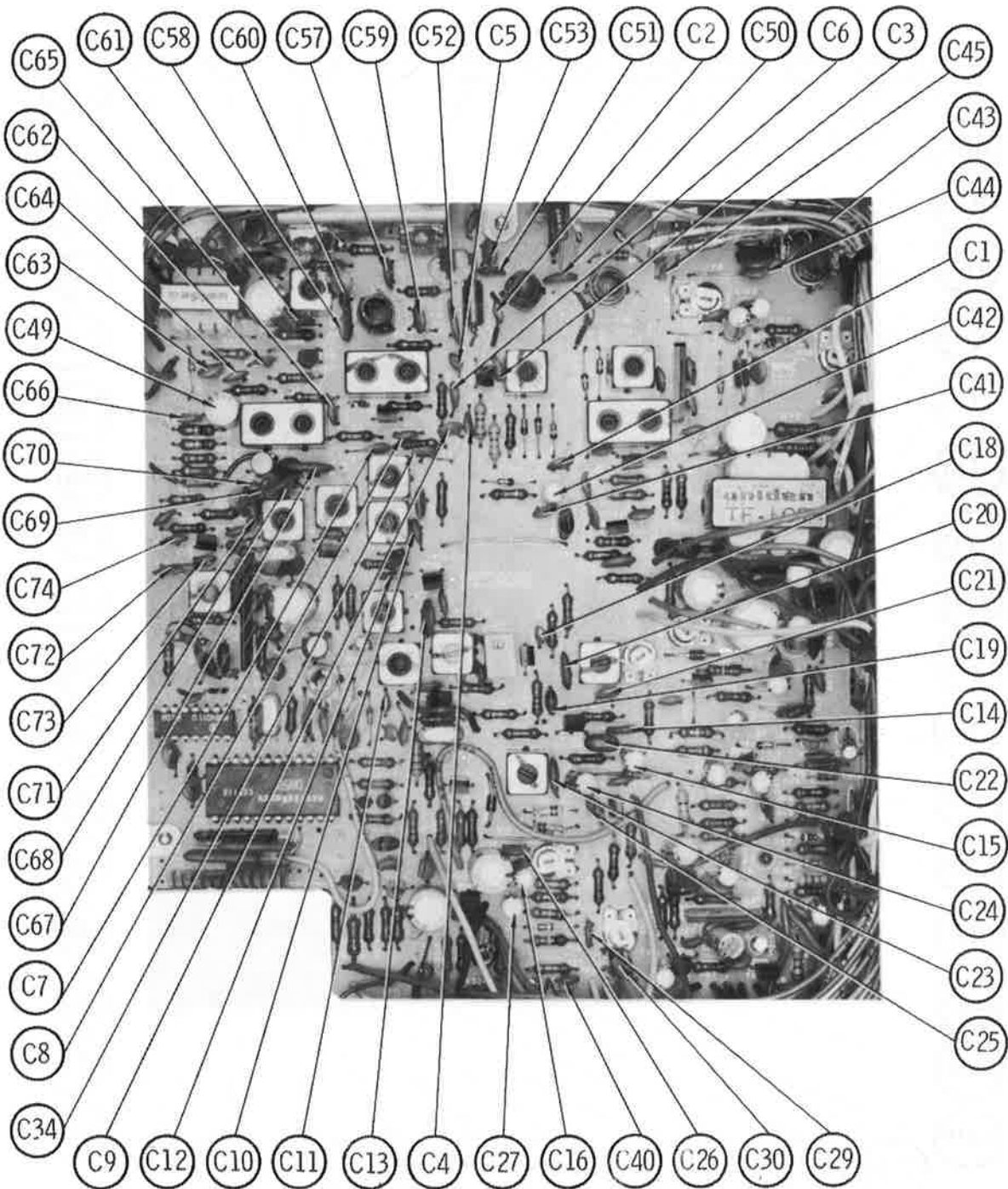


PRESIDENT MODEL TEDDY R.

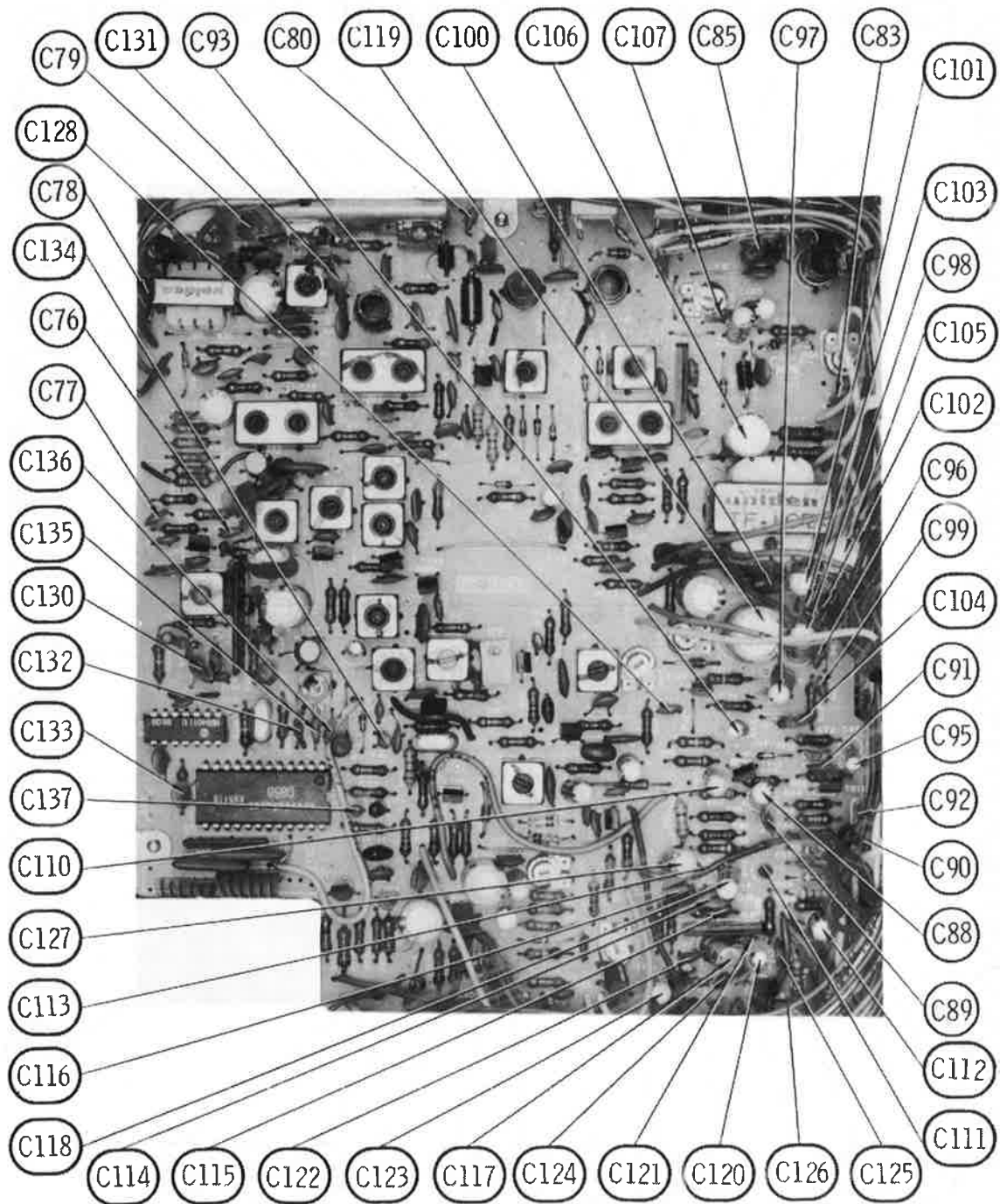
MAIN BOARD



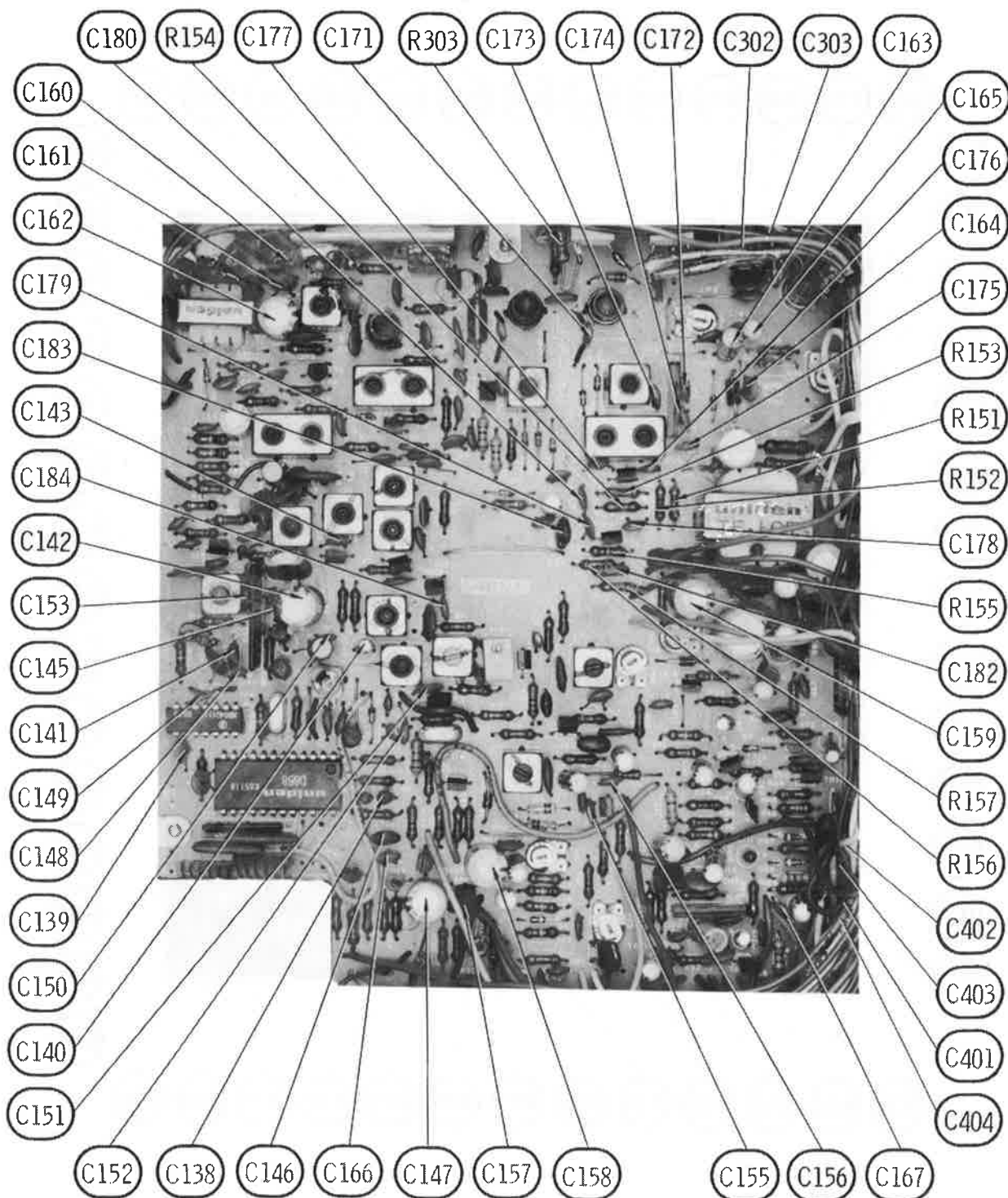
MAIN BOARD



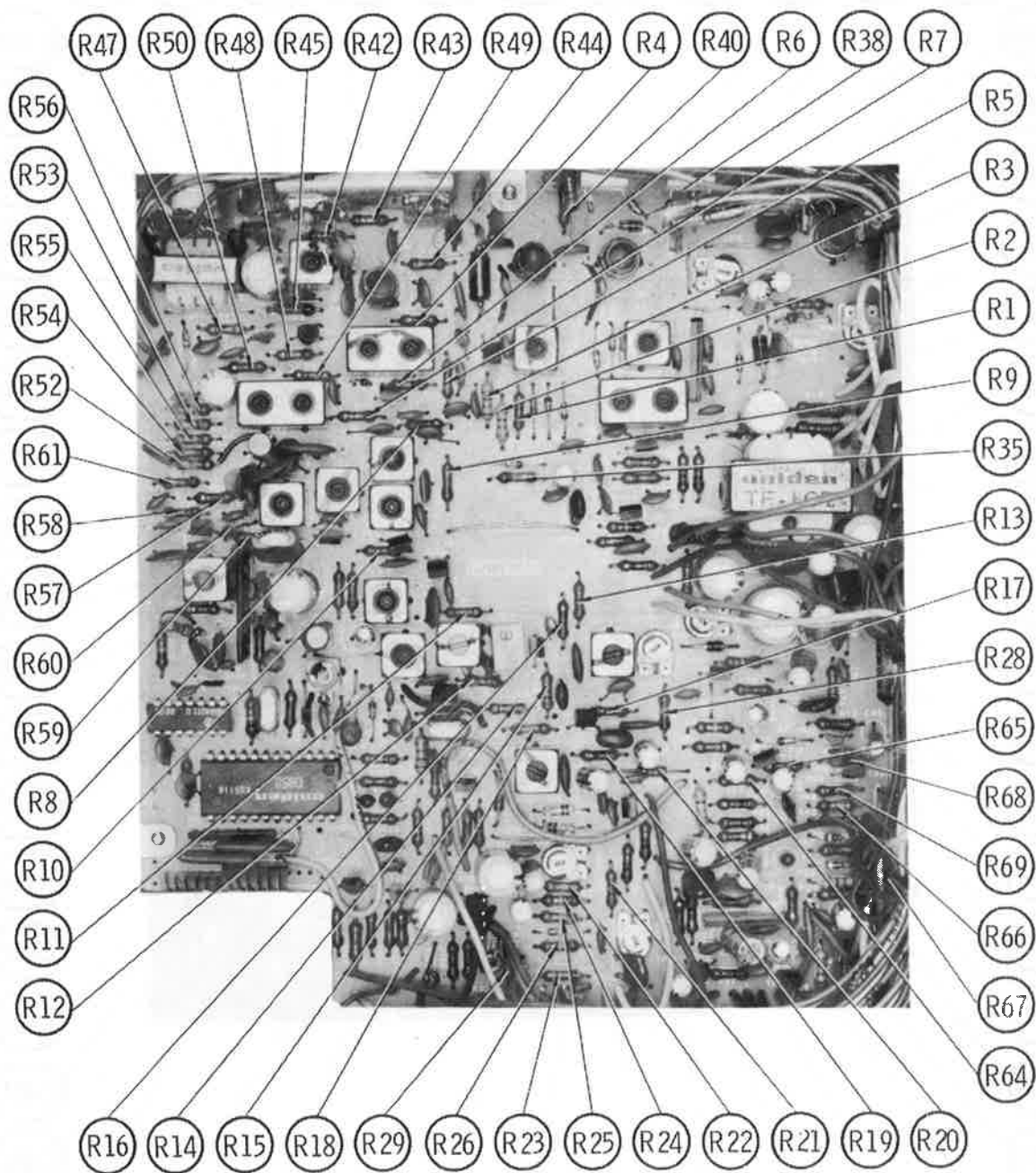
MAIN BOARD



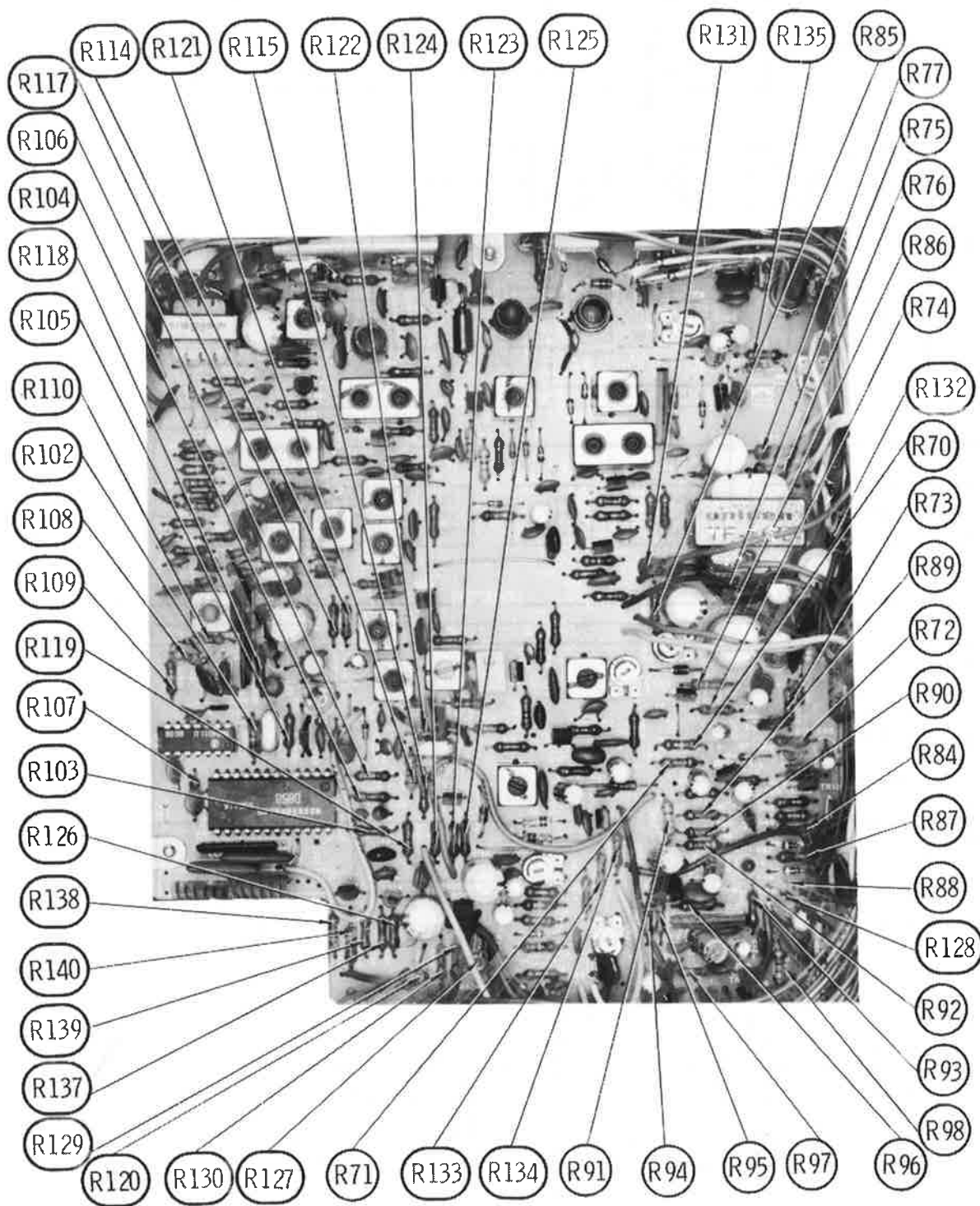
MAIN BOARD



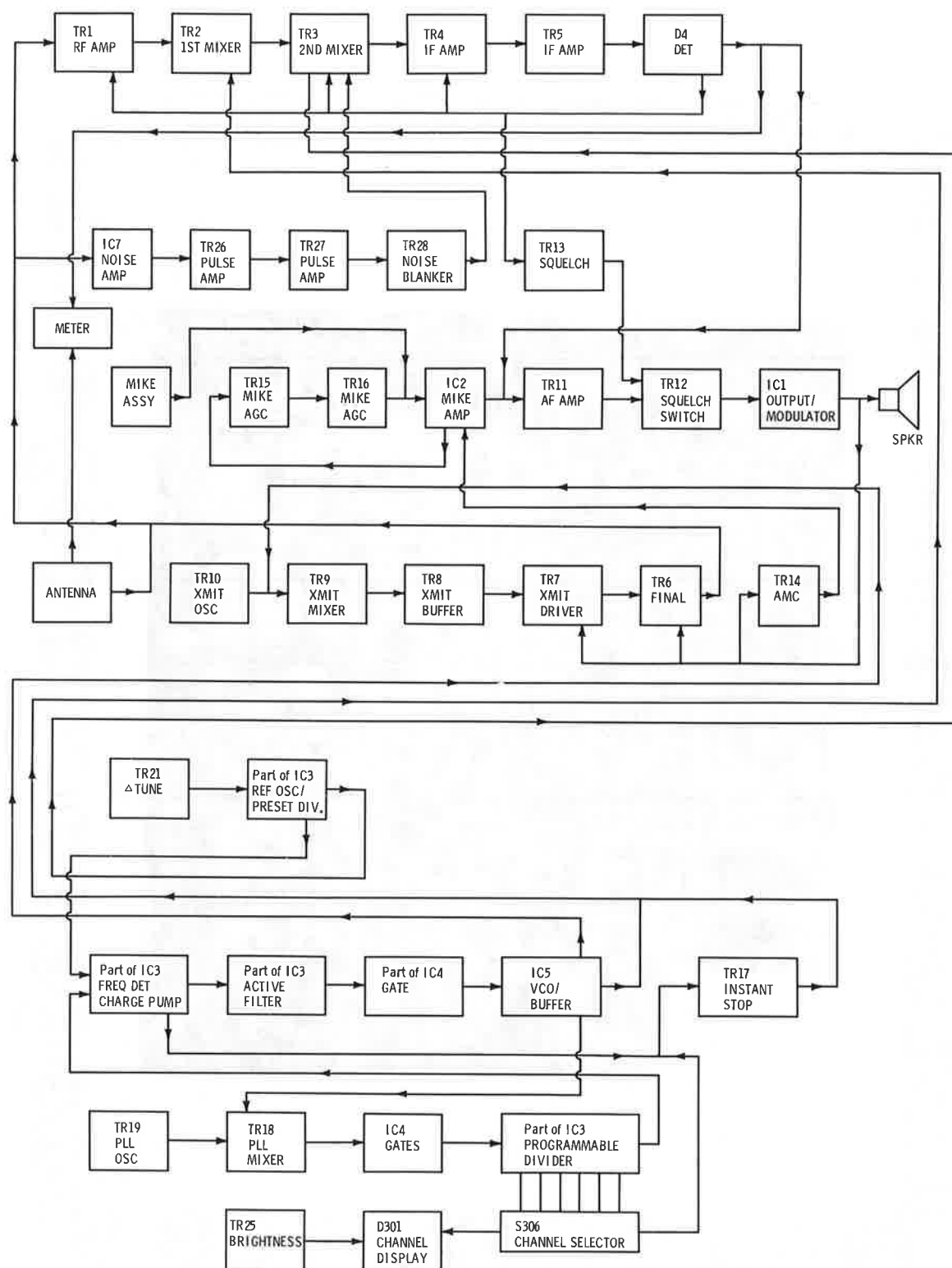
MAIN BOARD



MAIN BOARD



MAIN BOARD



BLOCK DIAGRAM

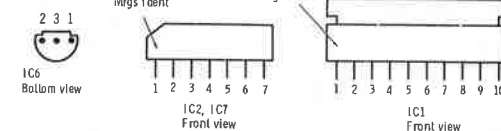
PARTS LIST AND DESCRIPTION

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

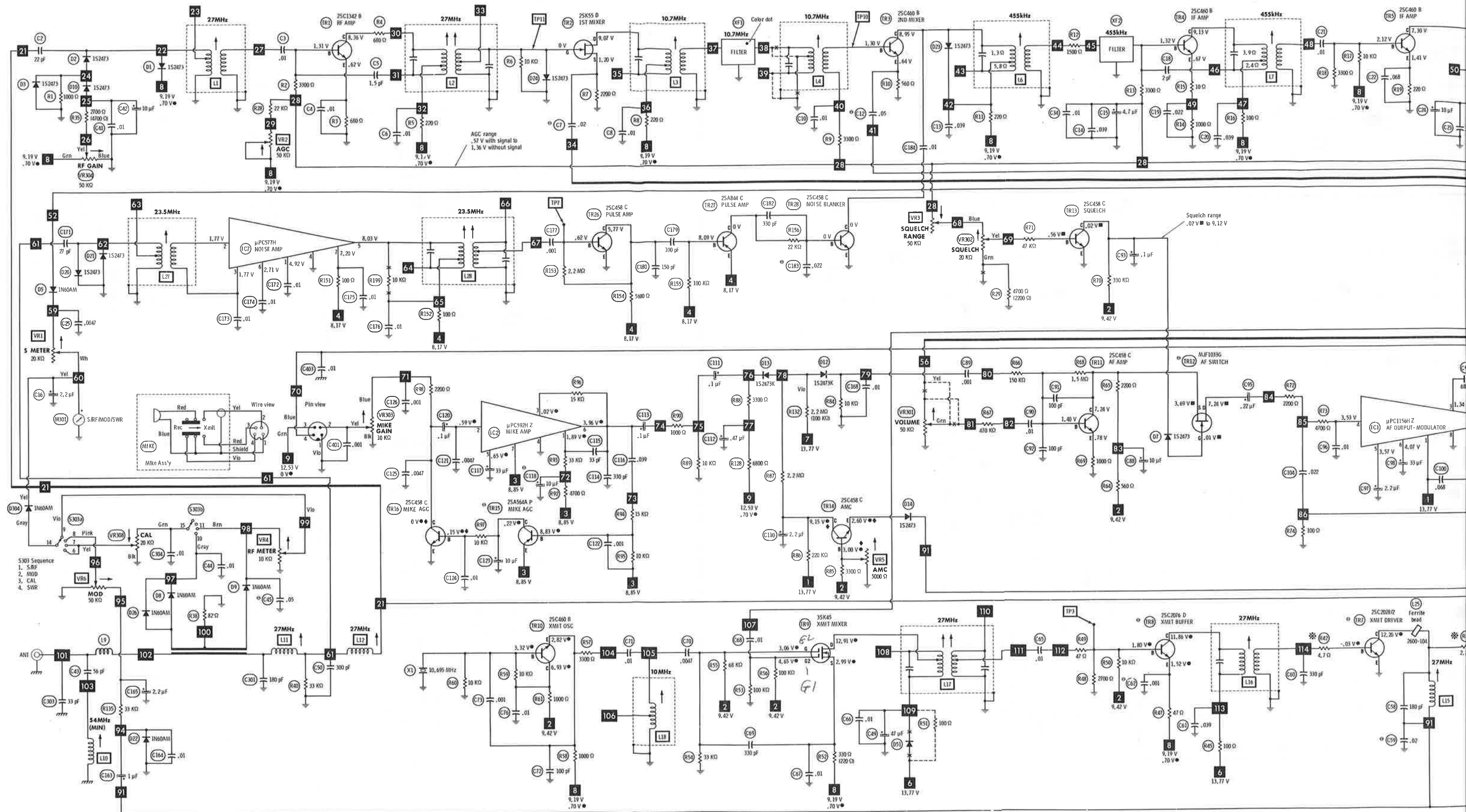
SEMICONDUCTORS (Select replacement transistor for best results)

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.
D1	1S2473	2000-302	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D2	1S2473	2000-302	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D3	1S2473	2000-302	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D4	1N60AM	2000-301	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D5	1N60AM	2000-301	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D6	1S2473K	2000-303	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D7	1S2473	2000-302	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D8	1N60AM	2000-301	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D9	1N60AM	2000-301	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D10	1S2473	2000-302	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D11	SR1K-1	2000-304	GE-504A	5A4D	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116
D12	1S2473K	2000-303	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D13	1S2473K	2000-303	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D14	1S2473	2000-302	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D15	1S2339G	2000-309	GE-90	D201		HEPR2503	RE 195	SK3126	RT-262	
D16	1S2473	2000-302	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D17	CZ-092	2000-308	GEZD-9.1	Z1209	ZB9.1A	HEPZ0412	RE 114	SK3060	RT-240	ECG139
D18	CZ-092	2000-308	GEZD-9.1	Z1209	ZB9.1A	HEPZ0412	RE 114	SK3060	RT-240	ECG139
D19	SR1K-1	2000-304	GE-504A	5A4D	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116
D20	1S2473	2000-302	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D21	1S2473	2000-302	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D22	1N60AM	2000-301	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D23	1S2473	2000-302	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D24	1S2473	2000-302	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D26	1N60AM	2000-301	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D51			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D304	1N60AM	2000-301	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
IC-1	UPC1156HZ	2000-005								
IC-2	UPC592HZ	2000-006								
IC-3	UPC858C	2000-001								
IC-4	MB84011U	2000-002								
IC-5	UHC-004	2000-003								
IC-6	NJM78L05A	2000-004								
IC-7	UPC577H	2000-007					RE 341-M			ECG1082
TR-1	2SC1342B	2000-205	GE-61 *	TR-24 *	PTC136 *	HEPS0014 *	RE 9 *	SK3018 *	RT-108A *	ECG229 *
TR-2	2SK55D	2000-101	GE-FET-2	FE-100	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312
TR-3	2SC460B	2000-204	GE-61 *	(IR)2SC460B	PTC136 *	HEPS0014 *	RE 9	SK3018 *	RT-134	ECG107
TR-4	2SC460B	2000-204	GE-61 *	(IR)2SC460B	PTC136 *	HEPS0014 *	RE 9	SK3018 *	RT-134	ECG107
TR-5	2SC460B	2000-204	GE-61 *	(IR)2SC460B	PTC136 *	HEPS0014 *	RE 9	SK3018 *	RT-134	ECG107
TR-6	2SC2029/1		GE-215	WEP1306	PTC186		RE 203	SK3197	RT-146	ECG235
	2SC2092	2000-208	GE-215	WEP1306	PTC186		RE 203	SK3197	RT-146	ECG235
	2SC1816		GE-215	WEP1306	PTC186		RE 203	SK3197	RT-146	ECG235
	2SC1678		GE-215	WEP1306	PTC186		RE 203	SK3197	RT-146	ECG235
	2SC1909		GE-215	WEP1306	PTC186		RE 203	SK3197	RT-146	ECG235
TR7	2SC2028/2		GE-270	WEP913	PTC180		RE 209			ECG295
	2SC2091	2000-207	GE-270	WEP913	PTC180		RE 209			ECG295
	2SC1760		GE-276						RT-310	ECG306
	2SC1957		GE-270	WEP913	PTC180		RE 209			ECG295
	2SC495T		GE-270	WEP913	PTC180		RE 209		RT-162	ECG295
	2SC1846		GE-336				RE 209			ECG306
TR8	2SC1974		GE-337	WEP1306	PTC186		RE 203	SK3197	RT-146	ECG235
	2SC2076D		GE-210	(IR)2SC829B	PTC121	HEPS0015	RE 13	SK3122	RT-308	ECG123A
	2SC2076CD	2000-206	GE-210	(IR)2SC829B	PTC121	HEPS0015	RE 13	SK3122	RT-308	ECG123A
	2SC2076		GE-210	(IR)2SC829B	PTC121	HEPS0015	RE 13	SK3122	RT-308	ECG123A
	2SC735		GE-210 *	TR-21 *	PTC123 *	HEPS0014 *	RE 13 *	SK3122	RT-308 *	ECG289
	2SC1364		GE-210	(IR)2SC829B	PTC121	HEPS0015	RE 13	SK3122	RT-308	ECG123A
	2SC933		GE-210	(IR)2SC829B	PTC121	HEPS0015	RE 13	SK3122	RT-308	ECG123A
TR9	3SK45	2000-102	GE-FET-4	WEP905	PTC181	HEPF2004	RE 199	SK3050	RT-181	ECG222
TR10	2SC460B	2000-204	GE-61 *	(IR)2SC460B	PTC136 *	HEPS0014 *	RE 9	SK3018 *	RT-134	ECG107
TR11	2SC458C	2000-203	GE-210 *	(IR)2SC458B	PTC121 *	HEPS0009 *	RE 13 *	SK3124	RT-187	ECG123A *
TR12	MJF1033G		GE-FET-2	FE-100	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312
	2SK55D	2000-101	GE-FET-2	FE-100	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312
	2SK55		GE-FET-2	FE-100	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312
	2SK19		GE-FET-2	FE-100	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312
	JF1033		GE-FET-2	FE-100	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312
TR13	2SC458C	2000-203	GE-210 *	(IR)2SC458B	PTC121 *	HEPS0009 *	RE 13 *	SK3124	RT-187	ECG123A *
TR14	2SC458C	2000-203	GE-210 *	(IR)2SC458B	PTC121 *	HEPS0009 *	RE 13 *	SK3124	RT-187	ECG123A *
TR15	2SA564AP		GE-65	(IR)2SA564A	PTC103 *	HEPS0019 *	RE 193	SK3114	RT-303	ECG234
	2SA844C	2000-202	GE-21	TR-54	PTC103	HEPS0019	RE 18	SK3114	RT-126A	ECG129
	2SA844		GE-21	TR-54	PTC103	HEPS0019	RE 18	SK3114	RT-126A	ECG129
	2SA733		GE-65	TR-31	PTC103	HEPS0022	RE 26	SK3025	RT-303	ECG159
	2SA495		GE-221 *	(IR)2SA495	PTC103 *	HEPS0013 *	RE 26 *	SK3114	RT-303	ECG159 *
	2SA564		GE-65	(IR)2SA564A	PTC103 *	HEPS0019 *	RE 193	SK3114	RT-303	ECG234
	2SA659		GE-221	TR-88	PTC103	HEPS0019	RE 18	SK3025	RT-115	ECG129
TR16	2SC458C	2000-203	GE-210 *	(IR)2SC458B	PTC121 *	HEPS0009 *	RE 13 *	SK3124	RT-187	ECG123A *
TR17	2SC458C	2000-203	GE-210 *	(IR)2SC458B	PTC121 *	HEPS0009 *	RE 13 *	SK3124	RT-187	ECG123A *
TR18	3SK45		GE-FET-4	WEP905	PTC181	HEPF2004	RE 199	SK3050	RT-181	ECG222
	3SK45B-09	2000-102	GE-FET-4	WEP905	PTC181	HEPF2004	RE 199	SK3050	RT-181	ECG222
	3SK41		GE-FET-4	WEP905	PTC181	HEPF2004	RE 199	SK3050	RT-181	ECG222
	3SK49		GE-FET-4	WEP905	PTC181	HEPF2004	RE 199	SK3050	RT-181	ECG222

PRESIDENT MODEL TEDDY R.



- 112





SEMICONDUCTORS (S

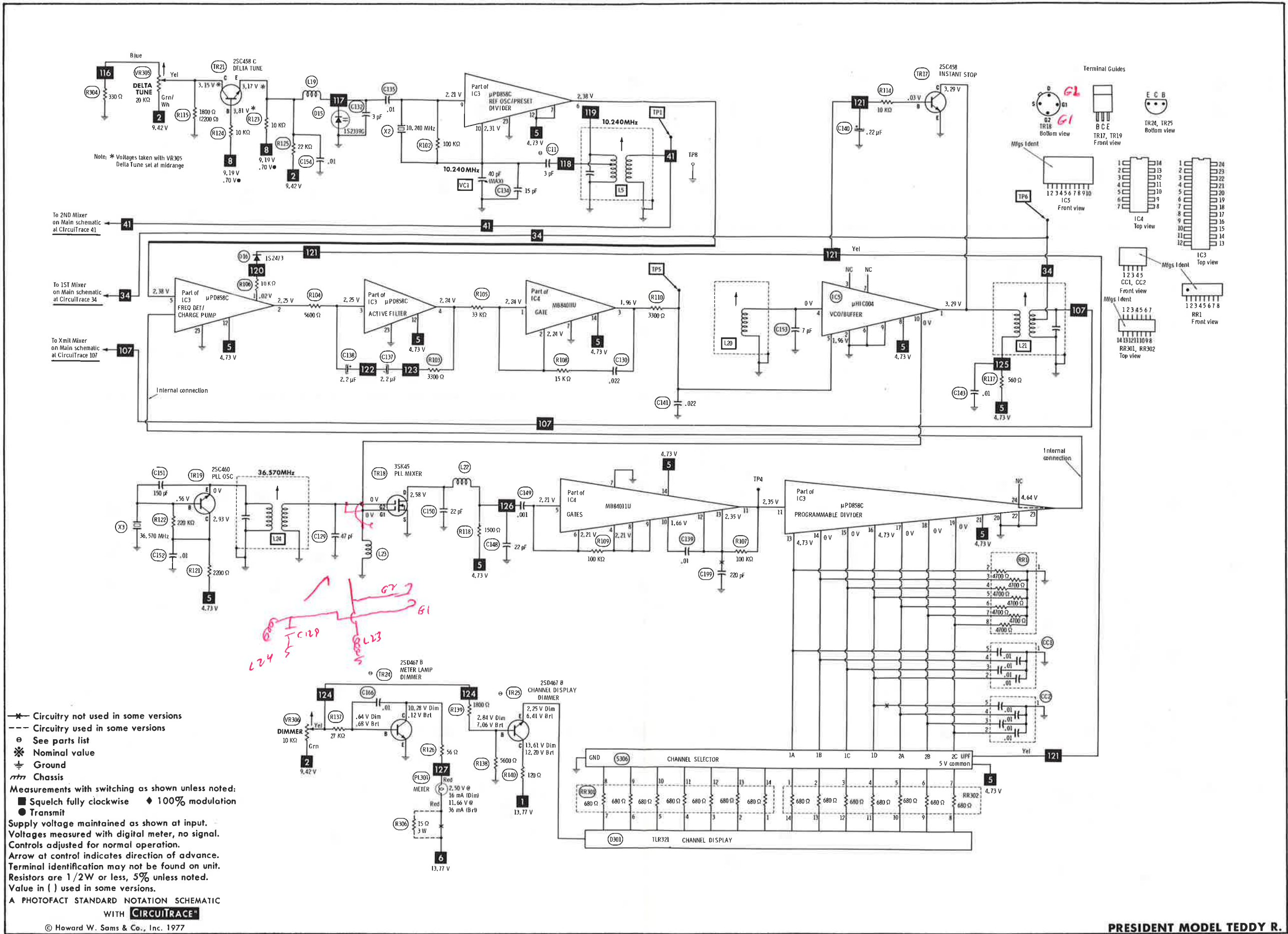
ITEM No.	TYPE No.	MFR. PART No.	GE ELE PAK
TR19	2SC4608	2000-204	GE-
TR20	2SA719R		GE-
	2SA673C	2000-201	GE-
	2SA673		GE-
	2SA562		GE-
	2SA719		GE-
TR21	2SC458C	2000-203	GE-
TR22	2SC458C	2000-203	GE-
TR24	2SD467B		GE-
	2SD467C	2000-209	GE-
	2SC1788		GE-
	2SC1851		GE-
	2SC1166		GE-
	2SD545		GE-
TR25	2SD467B	2000-209	GE-
	2SC467C		GE-
	2SC1788		GE-
	2SC1851		GE-
	2SC1166		GE-
	2SD545		GE-
TR26	2SC458C	2000-203	GE-
TR27	2SA844C	2000-202	GE-
TR28	2SC458C	2000-203	GE-

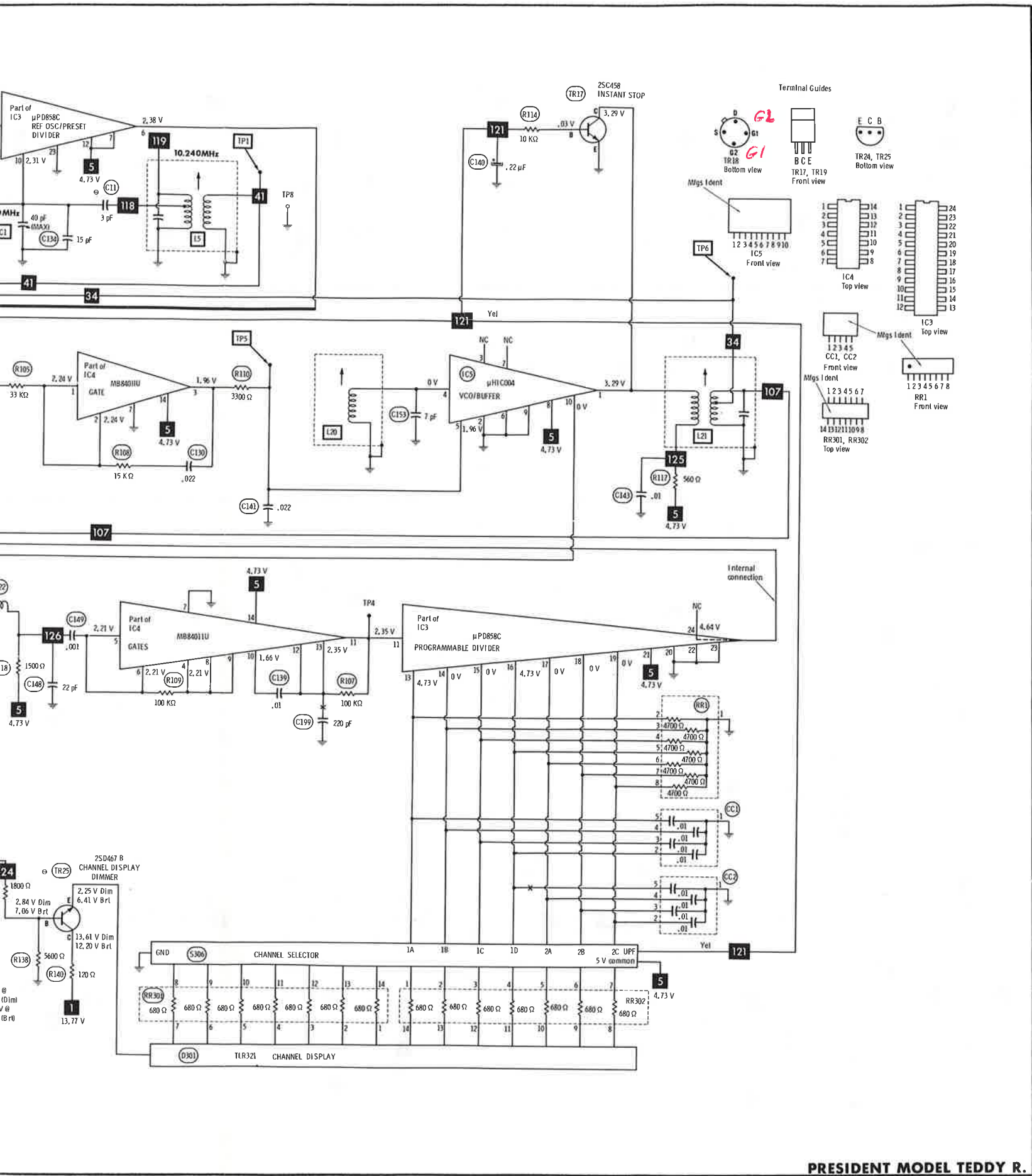
* Lead configuration

ELECTROLYTIC CAPAC

ITEM No.	RATING	
C15	4.7 25V	1800
C16	2.2 25V	1800
C24	10 16V	1800
C27	1 50V	1800
C42	10 16V	1800
C49	47 16V	1800
C88	10 16V	1800
C93	.1 16V	1800
C95	.22 16V	1800
C97	2.2 25V	1800
C98	33 16V	1800
C101	33 16V	1800
C105	220 16V	1800
C106	220 16V	1800
C110	2.2 25V	1800
C111	.1 16V	1800
C112	.47 50V	1800
C113	.1 16V	1800
C117	33 16V	1800
C118	10 16V	1800
C119	470 16V	1800
C120	.1 16V	1800
C123	10 16V	1800
C127	33 16V	1800
	10	1800
C137	2.2 16V	1800
C138	2.2 16V	1800
C140	.22 16V	1800
C142	470 6.3V	1800
C147	220 16V	1800
C158	100 16V	1800
C159	100 16V	1800
C162	100 25V	1800
C163	1 50V	1800
C165	2.2 25V	1800

(1) Used in some versions.





PRESIDENT MODEL TEDDY R.

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.
TR19	2SC460B	2000-204	GE-61 *	(IR)2SC460B	PTC136 *	HEPS0014 *	RE 9	SK3018 *	RT-134	ECG107
TR20	2SA719R	2000-201	GE-21	TR-28	PTC103	HEPS0012	RE 197	SK3114	RT-305	ECG290
	2SA673C		GE-269	TR-30	PTC103	HEPS0013	RE 26	SK3114	RT-126A	ECG159
	2SA673		GE-269	TR-30	PTC103	HEPS0013	RE 26	SK3114	RT-126A	ECG159
	2SA562		GE-82	TR-30	PTC103	HEPS0012	RE 197	SK3114	RT-106	ECG290
	2SA719		GE-21	TR-28	PTC103	HEPS0012	RE 197	SK3114	RT-305	ECG290
TR21	2SC458C	2000-203	GE-210 *	(IR)2SC458B	PTC121 *	HEPS0009 *	RE 13 *	SK3124	RT-187	ECG123A *
TR22	2SC458C	2000-203	GE-210 *	(IR)2SC458B	PTC121 *	HEPS0009 *	RE 13 *	SK3124	RT-187	ECG123A *
TR24	2SD467C	2000-209	GE-88 *	TR-87 *	PTC178	HEPS0001 *	RE 17 *	SK3020 *	RT-114 *	ECG128 *
	2SC1788		GE-88 *	TR-87 *	PTC178	HEPS0001 *	RE 17 *	SK3020 *	RT-114 *	ECG128 *
	2SC1851		GE-88 *	TR-87 *	PTC178	HEPS0001 *	RE 17 *	SK3020 *	RT-114 *	ECG128 *
	2SC1166		GE-81 *	TR-63 *	PTC143 *	HEPS0026 *	RE 210	SK3122	RT-141	ECG297
	2SD545		GE-47	TR-87 *	PTC178	HEPS0002 *	RE 17 *	SK3024 *	RT-114 *	ECG128 *
TR25	2SD467B	2000-209	GE-88 *	TR-87 *	PTC178	HEPS0001 *	RE 17 *	SK3020 *	RT-114 *	ECG128 *
	2SC467C		GE-88 *	TR-87 *	PTC178	HEPS0001 *	RE 17 *	SK3020 *	RT-114 *	ECG128 *
	2SC1788		GE-88 *	TR-87 *	PTC178	HEPS0001 *	RE 17 *	SK3020 *	RT-114 *	ECG128 *
	2SC1851		GE-88 *	TR-87 *	PTC178	HEPS0001 *	RE 17 *	SK3020 *	RT-114 *	ECG128 *
	2SC1166		GE-81 *	TR-63 *	PTC143 *	HEPS0026 *	RE 210	SK3122	RT-141	ECG297
	2SD545		GE-47	TR-87 *	PTC178	HEPS0002 *	RE 17 *	SK3024 *	RT-114 *	ECG128 *
TR26	2SC458C	2000-203	GE-210 *	(IR)2SC458B	PTC121 *	HEPS0009 *	RE 13 *	SK3124	RT-187	ECG123A *
TR27	2SA844C	2000-202	GE-21	TR-54	PTC103	HEPS0019	RE 18	SK3114	RT-126A	ECG129
TR28	2SC458C	2000-203	GE-210 *	(IR)2SC458B	PTC121 *	HEPS0009 *	RE 13 *	SK3124	RT-187	ECG123A *

* Lead configuration may vary from original.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA			
			CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	GENERAL LINE
C15	4.7 25V	1800-304	PC5-50	VTT4R7A50	QV1-27	EV-1319
C16	2.2 25V	1800-303	PC2-100	VTT2R2A50	QV1-19	EV-1517
C24	10 16V	1800-306	PC10-25	VTT10A25	QV1-41	EV-1222
C27	1 50V	1800-302	PC1-50	VTT1B63	QV1-11	EV-1615
C42	10 16V	1800-306	PC10-25	VTT10A25	QV1-41	EV-1222
C49	47 16V	1800-315	PC50-16	VTT47D16	QV1-73	EV-1226
C88	10 16V	1800-306	PC10-25	VTT10A25	QV1-41	EV-1222
C93	.1 16V	1800-501		TDC104M050EL	QDT1-2	SD50-R109
C95	.22 16V	1800-503		TDC224M050EL	QDT1-10	SD50-R229
C97	2.2 25V	1800-303	PC2-100	VTT2R2A50	QV1-19	EV-1517
C98	33 16V	1800-307	PC30-25	VTT33D25	QV1-63	EV-1325
C101	33 16V	1800-307	PC30-25	VTT33D25	QV1-63	EV-1325
C105	220 16V	1800-314	PC250-25	VTT220G16	QV1-117	EV-1240
C106	220 16V	1800-314	PC250-25	VTT220G16	QV1-117	EV-1240
C110	2.2 25V	1800-303	PC2-100	VTT2R2A50	QV1-19	EV-1517
C111	.1 16V	1800-501		TDC104M050EL	QDT1-2	SD50-R109
C112	.47 50V	1800-301		VTT47B63	QV1-3	EV-1610
C113	.1 16V	1800-501		TDC104M050EL	QDT1-2	SD50-R109
C117	33 16V	1800-307	PC30-25	VTT33D25	QV1-63	EV-1325
C118	10 16V	1800-306	PC10-25	VTT10A25	QV1-41	EV-1222
C119	470 16V	1800-309	PC500-16	VTT470J16	QV1-151	EV-1250
C120	.1 16V	1800-501		TDC104M050EL	QDT1-2	SD50-R109
C123	10 16V	1800-306	PC10-25	VTT10A25	QV1-41	EV-1222
C127	33 16V	1800-307	PC30-25	VTT33D25	QV1-63	EV-1325
		10	1800-306 (1)	VTT10A25	QV1-41	EV-1222
C137	2.2 16V	1800-202		TDC225M035FL	QDT1-10	SD35-2R29
C138	2.2 16V	1800-202		TDC225M035FL	QDT1-10	SD35-2R29
C140	.22 16V	1800-503		TDC224M050EL	QDT1-10	SD50-R229
C142	470 6.3V	1800-311	PC500-16	VTT470J16	QV1-149	EV-1150
C147	220 16V	1800-314	PC250-25	VTT220G16	QV1-117	EV-1240
C158	100 16V	1800-312	PC100-16	VTT100F16	QV1-95	EV-1230
C159	100 16V	1800-312	PC100-16	VTT100F16	QV1-95	EV-1230
C162	100 25V	1800-313	PC100-25	VTT100G25	QV1-97	EV-1330
C163	1 50V	1800-302	PC1-50	VTT1B63	QV1-11	EV-1615
C165	2.2 25V	1800-303	PC2-100	VTT2R2A50	QV1-19	EV-1517

(1) Used in some versions.

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.	
						Q-LINE	GENERAL LINE
C1	.01 25V	1800-007	UK25-103	MGP01	MAG2511	QC2-141	TG-S10
C2	22 N220 10%						10TCR-Q22
C3	.01 25V		UK25-103	MGP01	MAG2511	QC2-141	TG-S10
C4	.01 25V		UK25-103	MGP01	MAG2511	QC2-141	TG-S10
C5	1.5 NPO		DTZ-1R5	NPO1P5	CN0515		10TCC-V15
C6	.01 25V		UK25-103	MGP01	MAG2511	QC2-141	TG-S10
C7	.02 25V		UC-203	MGP02	TA120	QC2-157	TG-S20
C8	.01 25V		UK25-103	MGP01	MAG2511	QC2-141	TG-S10
C9	.01 25V		UK25-103	MGP01	MAG2511	QC2-141	TG-S10
C10	.01 25V		UK25-103	MGP01	MAG2511	QC2-141	TG-S10
C11	3		DTZ-3R3	NPO3P3	CN0533		10TCC-V33
	5		DTZ-4R7	NPO4P7	CN0547		10TCC-V47
C12	.05 25V	(1)	DC-503	MGP05	TA150	QC2-207	TG-S50
C13	.039 25V	1800-034					
C14	.039 25V	1800-034					
C18	2 N220	1800-004					
C19	.022 10%	1800-034		DPMS2S22	EWFA1A22	QF1-127	1PB-S22
C20	.039 25V						
C21	.01 25V		UK25-103	MGP01	MAG2511	QC2-141	TG-S10
C22	.068 10%			WMF1S68	EWFA1A168	QF1-195	1PB-S68
C23	.039 25V						
C25	.0047 25V 10%						
C26	.0047 25V 10%						
C29	.0047 25V 10%						
C30	.0047 10%			WMF1D47	EWFA1A247	QF1-57	1PB-D47
C34	.01 25V		UK25-103	MGP01	MAG2511	QC2-141	TG-S10
C40	.001 25V		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C41	.01 25V	1800-043	UK25-103	MGP01	MAG2511	QC2-141	TG-S10
C43	56 NPO 10%		DC-503	MGP05	TA150	QC2-207	TG-S50
C44	.01 25V		UK25-103	MGP01	MAG2511	QC2-141	TG-S10
C45	.05		DC-503	MGP05	TA150	QC2-207	TG-S50
C50	300		DD-301	GP300	GP330		10TS-T30
C51	.0047 25V 10%	1800-043					
C52	.04 25V	1800-034					
C53	100	1800-034	DD-101	GP100	GP310		10TS-T10
C57	180		DD-181		GP318		10TS-T18
C58	180		DD-181		GP318		10TS-T18
C59	.02 25V		DC-203	MGP02	TA120	QC2-157	TG-S20
C60	330		DD-331	GP330	GP333		10TS-T33
C61	.039 25V						
C62	.001		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C63	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C64	.01 25V		UK25-103	MGP01	MAG2511	QC2-141	TG-S10
C65	.01 25V		UK25-103	MGP01	MAG2511	QC2-141	TG-S10
C66	.01 25V		UK25-103	MGP01	MAG2511	QC2-141	TG-S10
C67	.01 25V 10%	1800-035					
C68	.01 25V	1800-010	UK25-103	MGP01	MAG2511	QC2-141	TG-S10
C69	330 N220 10%				*		10TCR-T33
C70	.0047 10%						
C71	.01 25V 10%		UK25-103	MGP01	MAG2511	QC2-141	TG-S10
C72	100 NPO 5%		DTZ-100	NPO100	CN0310		10TCC-T10
C73	.001 25V		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C74	.01 25V		UK25-103	MGP01	MAG2511	QC2-141	TG-S10
C76	.01 25V		UK25-103	MGP01	MAG2511	QC2-141	TG-S10
C77	.01 25V		UK25-103	MGP01	MAG2511	QC2-141	TG-S10
C78	.039 25V	1800-034					
C79	.01 25V		UK25-103	MGP01	MAG2511	QC2-141	TG-S10
C80	.01 25V		UK25-103	MGP01	MAG2511	QC2-141	TG-S10
C83	.01 25V		UK25-103	MGP01	MAG2511	QC2-141	TG-S10
C85	.039 25V						
C86	.001 25V		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C87	.001 25V		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C89	.001 10%			DPMS6D1	EWFA1A210	QF1-1	1PB-D10
C90	.01 10%			WMF1S1	EWFA1A110	QF1-91	1PB-S10
C91	100		DD-101	GP100	GP310		10TS-T10
C92	100		DD-101	GP100	GP310		10TS-T10
C96	.01 10%	1800-043		WMF1S1	EWFA1A110	QF1-91	1PB-S10
C99	68		DD-680	GP68	GP468		10TS-Q68
C100	.068 10%			WMF1S68	EWFA1A168	QF1-195	1PB-S68
C102	.068 10%			WMF1S68	EWFA1A168	QF1-195	1PB-S68
C103	220				GP322		10TS-T22
C104	.022		DD-221	DPMS2S22	EWFA1A22	QF1-127	1PB-S22
C107	.01 25V		UK25-103	MGP01	MAG2511	QC2-141	TG-S10
C114	330		DD-331	GP330	GP333		10TS-T33
C115	33		DTZ-33	NPO33	CN0433		10TCC-Q33
C116	.039				MT92P3939R8		192P3939R8
C121	.0047 25V 10%		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C122	.001 25V		UK25-103	MGP01	MAG2511	QC2-141	TG-S10
C124	.01 25V	1800-043					
C125	.0047 25V		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C126	.001 25V		UK25-103	MGP01	MAG2511	QC2-141	TG-S10
C128	.01 25V		DTZ-47	NPO47	CN0447		10TCC-Q47
C129	47 NPO 10%			DPMS2S22	EWFA1A22	QF1-127	1PB-S22
C130	.022			GP1000	GP210	QC2-81	5GA-D10
C131	.001 25V		DD-102G	NPO3P3	CN0533		10TCC-V33
C132	3		DTZ-3R3				

PRESIDENT MODEL TEDDY R.

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 Q-LINE	PART No. GENERAL LINE
C133	.01 25V	1800-006	UK25-103	MGP01	MAG2511	QC2-141	TG-S10
C134	15 N220				*		10TCR-Q15
C135	.01 25V		UK25-103	MGP01	MAG2511	QC2-141	TG-S10
C136	.01 25V		UK25-103	MGP01	MAG2511	QC2-141	TG-S10
C139	.01 25V		UK25-103	MGP01	MAG2511	QC2-141	TG-S10
C141	.022			DPMS2S22	EWFA1A122	QF1-127	1PB-S22
C143	.01 25V		UK25-103	MGP01	MAG2511	QC2-141	TG-S10
C145	.01 25V		UK25-103	MGP01	MAG2511	QC2-141	TG-S10
C146	.022 10%			DPMS2S22	EWFA1A122	QF1-127	1PB-S22
C148	22		DTZ-22	NP022	CN0422		10TCC-Q22
C149	.001 25V 10%		DD-102		GP210		10TS-D10
C150	22		DTZ-22	NP022	CN0422		10TCC-Q22
C151	150		DD-151		GP315		10TS-T15
C152	.01 25V		UK25-103	MGP01	MAG2511	QC2-141	TG-S10
C153	7		DTZ-6R8	NP06P8	CN0568		10TCC-V68
C154	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C155	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C156	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C157	.01 25V		UK25-103	MGP01	MAG2511	QC2-141	TG-S10
C160	.01 25V		UK25-103	MGP01	MAG2511	QC2-141	TG-S10
C161	.01 25V		UK25-103	MGP01	MAG2511	QC2-141	TG-S10
C164	.01 25V		UK25-103	MGP01	MAG2511	QC2-141	TG-S10
C166	.01 25V		UK25-103	MGP01	MAG2511	QC2-141	TG-S10
C167	.01 25V		UK25-103	MGP01	MAG2511	QC2-141	TG-S10
C168	.01			WMF1S1	EWFA1A110		1PB-S10
C171	27 N220 5%	1800-044			*		10TCR-Q27
C172	.01 25V		UK25-103	MGP01	MAG2511	QC2-141	TG-S10
C173	.01 25V		UK25-103	MGP01	MAG2511	QC2-141	TG-S10
C174	.01 25V		UK25-103	MGP01	MAG2511	QC2-141	TG-S10
C175	.01 25V		UK25-103	MGP01	MAG2511	QC2-141	TG-S10
C176	.01 25V		UK25-103	MGP01	MAG2511	QC2-141	TG-S10
C177	.001 25V		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C178	.01 25V		UK25-103	MGP01	MAG2511	QC2-141	TG-S10
C179	100		DD-101	GP100	GP310		10TS-T10
C180	150		DD-151		GP315		10TS-T15
C182	330 25V		DD-331	GP330	GP333		10TS-T33
C183	.022 25V 10%			DPMS2S22	EWFA1A122	QF1-127	1PB-S22
C184	.01 25V		UK25-103	MGP01	MAG2511	QC2-141	TG-S10
C199	220		DD-221		GP322		10TS-T22
C301	180						
C302	.05 25V		DC-503	MGP05	TA150	QC2-207	TG-S50
C303	22		DTZ-22	NP022	CN0422		10TCC-Q22
C304	.01 25V		UK25-103	MGP01	MAG2511	QC2-141	TG-S10
C401	.001 25V		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C402	.01 25V		UK25-103	MGP01	MAG2511	QC2-141	TG-S10
C403	.01 25V		UK25-103	MGP01	MAG2511	QC2-141	TG-S10
C404	.01 25V		UK25-103	MGP01	MAG2511	QC2-141	TG-S10
CC1	.01	1800-103					
CC2	.01	1800-103					
VC1	40	1800-202					GKB40000

* 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	RESIST-ANCE	REPLACEMENT DATA				
			MFR. PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	MALLORY PART No.	TRW PART No.
VR1	S Meter	20K	1900-204				
VR2	AGC	50K	1900-202				
VR3	Squelch Range	50K	1900-202				
VR4	RF Meter	10K	1900-203	T-10K (3)	C-103 (3)	MTC14L1 (3)	X201R103B (3)
VR5	AMC	5000	1900-201				
VR6	MOD	50K	1900-202				
VR301	Squelch	20K	1900-112 (18)				
VR302	Volume/Power Switch	50K					
VR303	RF Gain	50K	1900-109 (19)				
VR304	Mike Gain	10K					
VR305	Delta Tune	20K	1900-106				
VR306	Dimmer	20K	1900-111				
VR308	CAL	20K	1900-110				

(3) For horizontal mounting, bend the two outside terminals to fit PC board. Use jumper to connect center terminal to PC board.

(18) Includes VR301 & VR302.

(19) Includes VR303 & VR304.

PARTS LIST AND DESCRIPTION (CONTINUED)

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

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA		ITEM No.	RATING	REPLACEMENT DATA	
		WORKMAN PART No.	MFGR. PART No.			WORKMAN PART No.	MFGR. PART No.
RR1 RR301	4700 680		1900-401 (1) 1900-402 (2)	RR302	680		1900-402 (2)

(1) Consists of seven 4700-ohm resistors.

(2) Consists of seven 680-ohm resistors.

COILS (RF-IF)

ITEM No.	FUNCTION	REPLACEMENT DATA			REMARKS
		PART No.	OTHER IDENTIFICATION	MILLER PART No.	
L1	Rec. Ant. (27MHz)	2200-001	LA-029		
L2	Rec. RF (27MHz)	2200-014	LA-194-6N14		
L3	Rec. Mixer (10.7MHz)	2200-003			
L4	Rec. Mixer (10.7MHz)	2200-004	LA-181-6N14		
L5	Ref. Osc. (10.240MHz)	2200-005	LA-182-6N14		
L6	IF (455kHz)	2200-002	LA-163-6912		
L7	IF (455kHz)	2200-006	LA-183-6912		
L8	IF (455kHz)	2200-007	LA-184-6912		
L9	RF Choke	2200-018			
L10	TVI Trap (54MHz)	2200-015			
L11	Ant. Match (27MHz)	2200-016			
L12	Final Amp (27MHz)	2200-020			
L13	RF Choke	2200-017			
L15	Xmit Driver (27MHz)	2200-015			
L16	Xmit Buffer (27MHz)	2200-012			
L17	Xmit Mixer (27MHz)	2200-008	LA-185-6N14		
L18	Xmit Osc. (10MHz)	2200-013	LA-193-6N14		
L19	RF Choke (3.3uH)	2200-203			
L20	VCO Buffer	2200-010	LA-187-6034		
L21	VCO Buffer (37MHz)	2200-011	LA-188-6N14		
L22	RF Choke (100uH)	2200-204			
L23	RF Choke (1.5uH)	2200-201			
L24	PLL Osc. (36.570MHz)	2200-009	LA-186-6014		
L27	Noise Amp (23.5MHz)	2200-001	LA-029		
L28	Noise Amp (23.5MHz)	2200-021	LA-155-6N14		
L303	RF Choke	2200-019			
L304	RF Choke				
L305	RF Choke	2200-019			
L307	RF Choke	2200-019			
L309	RF Choke	2200-019			

PRESIDENT MODEL TEDDY R.

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.	
T2	1.45A	.12	1mH	2300-001 TF-083 (1)	TR507		(1) Number on unit.

TRANSFORMER (Audio Output)

ITEM No.	IMPEDANCE		REPLACEMENT DATA			NOTES
	PRI.	SEC.	MFGR. PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	67	1 8 2 54	2600-001 TF-107 (1)			(1) Number on unit.

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		MFGR. PART No.	QUAM PART No.	
SP1	4" PM, 8 Ohms	3100-001	4A0528R	

PARTS LIST AND DESCRIPTION (CONTINUED)

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

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	2A Fast Acting	2800-001		AGC2	HDJ	312002	150145	FG2-2

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
Mike	3200-001	18-032	18-034	18-010	18-092	2	1	3	4	NC	1

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	10.695	2100-002	CC90W10695	XMIT OSC.	X3	36.570	2100-003		PLL OSC.
X2	10.240	2100-001		REF. OSC.					

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
M301	Meter	2900-003	S/Rf/MOD/SWR
S302	Switch	3000-001	NB/Off
S303	Switch	3000-102	S/Rf/MOD/CAL/SWR
S304	Switch	3000-001	CB/PA
S305	Switch	1900-112	On/Off (Part of Volume Control)
S306	Switch	3000-101	Channel Selector
S307	Switch	3000-001	H1 Cut/Off
XF1	Filter	2200-301	10.7MHz
XF2	Filter	2200-303	455kHz
	Flat Cable	2700-101	
	Printed Circuit Board	3500-004	Main (PC-198AA)
	Printed Circuit Board	3500-003	Mike (PC-181AA)
	Flexible Board	3500-002	Channel Selector (PC-209AA)

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

ITEM	PART No.	ITEM	PART No.
Cabinet, Upper	3300-103	Panel, Front	3300-504
Cabinet, Lower	3300-104	Knob, Channel Selector	1300-001
Bracket (Mobile)	3300-202	Push Knob	1300-003
Hanger, Microphone	3300-401		

WIRING DATA

General-use Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in 13 Colors
Shielded Antenna Lead	8524 (Stranded) Available in 13 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. 8497 3-Conductor (1 shielded for Press-to-Talk) Neoprene