



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 GTX-5000

MANUFACTURER'S SPECIFICATIONS

GENERAL

Dimensions

12"W × 5"H × 8-1/4"D

Net Weight

17 lbs

Power Supply

105 — 120 volt, 50/60 Hz AC;

12 volt DC

Power Consumption

AC — 80 watts

DC — 6.2A REC; 7A TX. (13.6 volt)

Channels

40

RECEIVER

Input Impedance

50 — 52 ohms

Sensitivity

0.8uV for 10dB S + N to N ratio

Selectivity

6 KHz bandwidth — 6dB

Intermediate Frequency

1st IF 9.785 MHz; 2nd IF 455 kHz

Image Rejection

— 75 dB

Audio Output

4 watts

External Speaker Impedance

8 ohms

TRANSMITTER

RF Power Output

4 watts

Modulation

AM

Harmonic Suppression

Better than 60 dB down

Frequency Stability

Better than 0.005%

Output Impedance

50 — 52 ohms

Courtesy of the Manufacturer

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

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GEMTRONICS MODEL GTX-5000

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. 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:

L181.....9440
VC901,VC902.....8276,5000
L302,L303.....5009,8728A,8728
L102,L201,L401,L402,L702,L703,L801,L904.....9440,8282,8606,9302

SYNTHESIZER ALIGNMENT

TEST EQUIPMENT	TRANSCIEVER	ADJUST	REMARKS
Input of frequency counter to TP1 (Q1, Collector).	Ch. 19, Fine Tune Detent	L181	Check for 10.240MHz.
Input of frequency counter to TP2 (Q14, Emitter).	Ch. 19, Fine Tune Detent		Check for 15.250MHz.
Input of DC meter to TP3 (Q12, pin 6).	Ch. 1, Fine Tune Detent		Adjust for 1.80 volts.
Input of frequency counter to TP5 (V7, pin 2).	Ch. 1, Fine Tune Detent		Check for 17.180MHz. Check all channels. (See Truth Chart for correct frequencies).
Input of frequency counter to TP4 (Q17, Emitter).	Ch. 19, XMT		Check for 9.785MHz.

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. Fine Tune Detent, Squelch MINIMUM.

TEST EQUIPMENT	TRANSCIEVER	ADJUST	REMARKS
Output of signal generator thru .01uF to TP6 (V2, pin 2). 455kHz,1000Hz @ 30% modulation.	Ch. 19	L402,L401 L301	Adjust for maximum output.
Output of signal generator thru .01uF to antenna jack. 27.185MHz,1000Hz @ 30% modulation.	Ch. 19	L201,L102	Adjust for maximum output. If necessary, readjust L301, L401, and L402.

RECEIVER ADJUSTMENTS

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

TEST EQUIPMENT	TRANSCIVER	ADJUST	REMARKS
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	TRANSCIVER	ADJUST	REMARKS
Input of spectrum analyzer or harmonic meter to antenna jack.	Ch. 19	L703, L702, L801, VC901 VC902	Adjust for maximum.
	Ch. 19	L702 (Top)	Adjust for 4 watts maximum.
	Ch. 19	L904	Adjust for MINIMUM at 54MHz.

GEMTRONICS MODEL GTX-5000

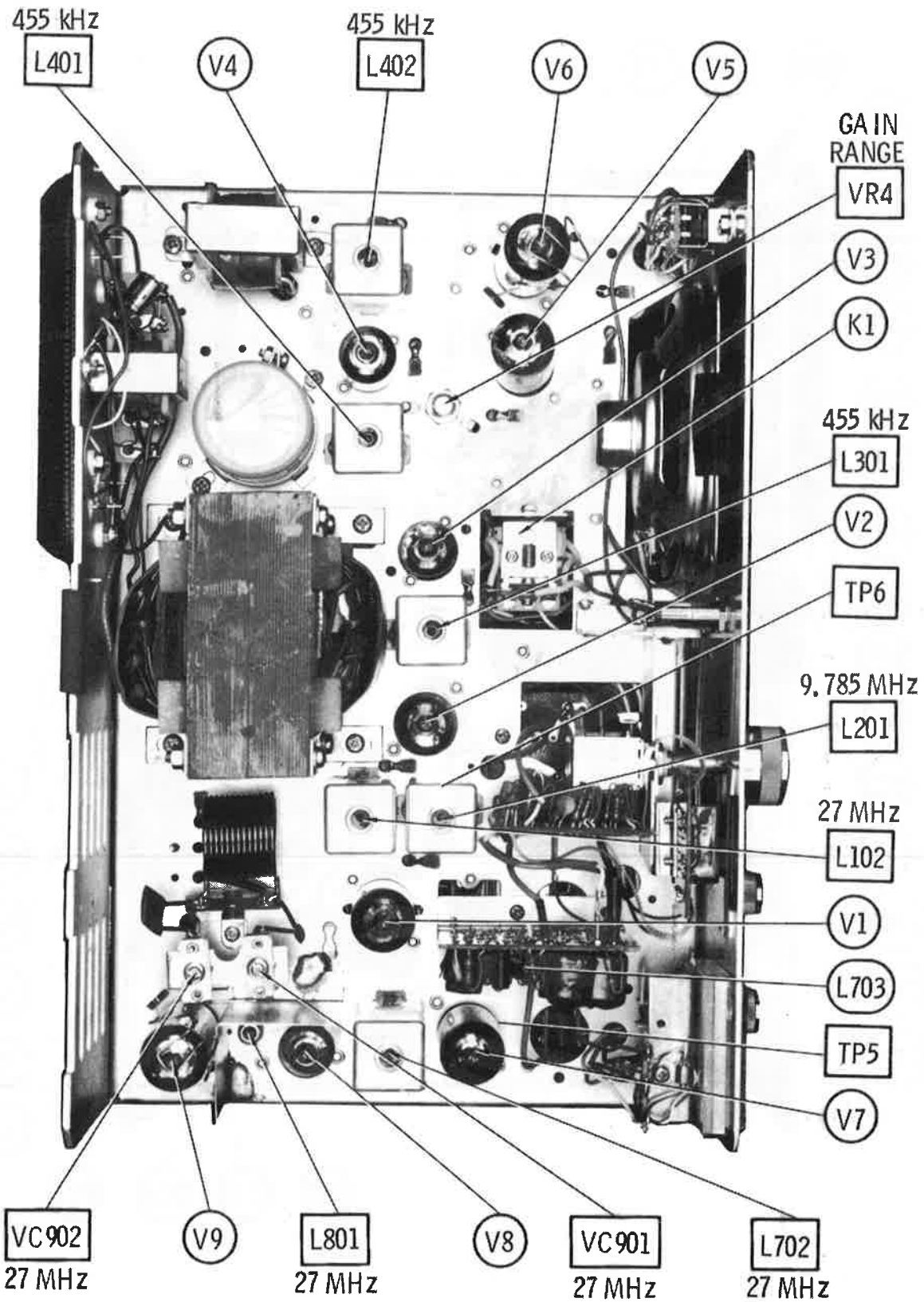
TRANSMITTER ADJUSTMENTS

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

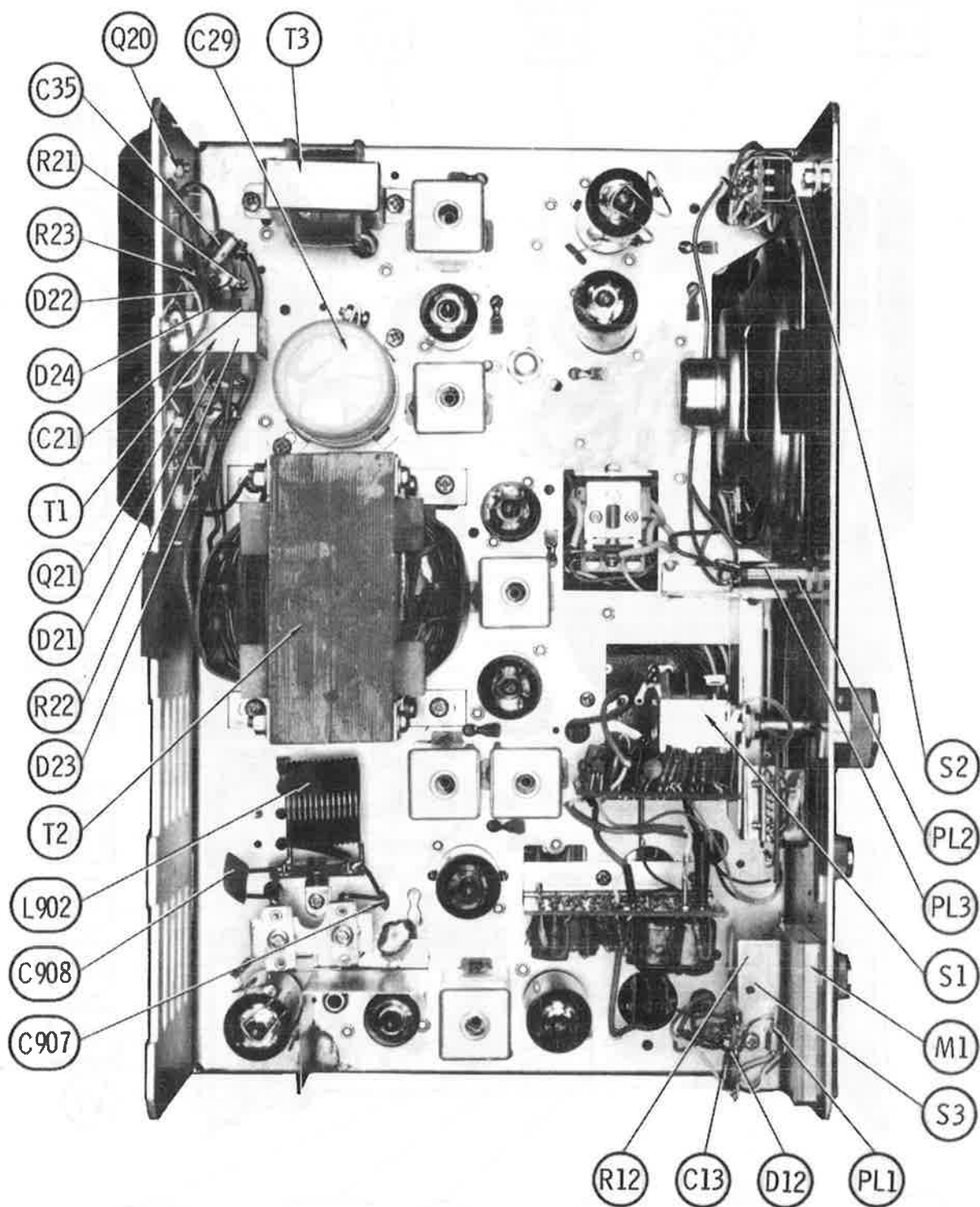
TEST EQUIPMENT	TRANSCIVER	ADJUST	REMARKS
Input of oscilloscope or modulation meter to antenna jack. Inject a 1000Hz, 100mV signal at MIC input.	Ch. 19	VR4	AMC (MIC) Adjust for 100% modulation maximum.
Connect an RF wattmeter and 50-ohm, 25-watt dummy load to antenna connector.	Ch. 19	VR7B	RF METER Adjust so that RF panel meter agrees with RF wattmeter.

TRUTH CHART

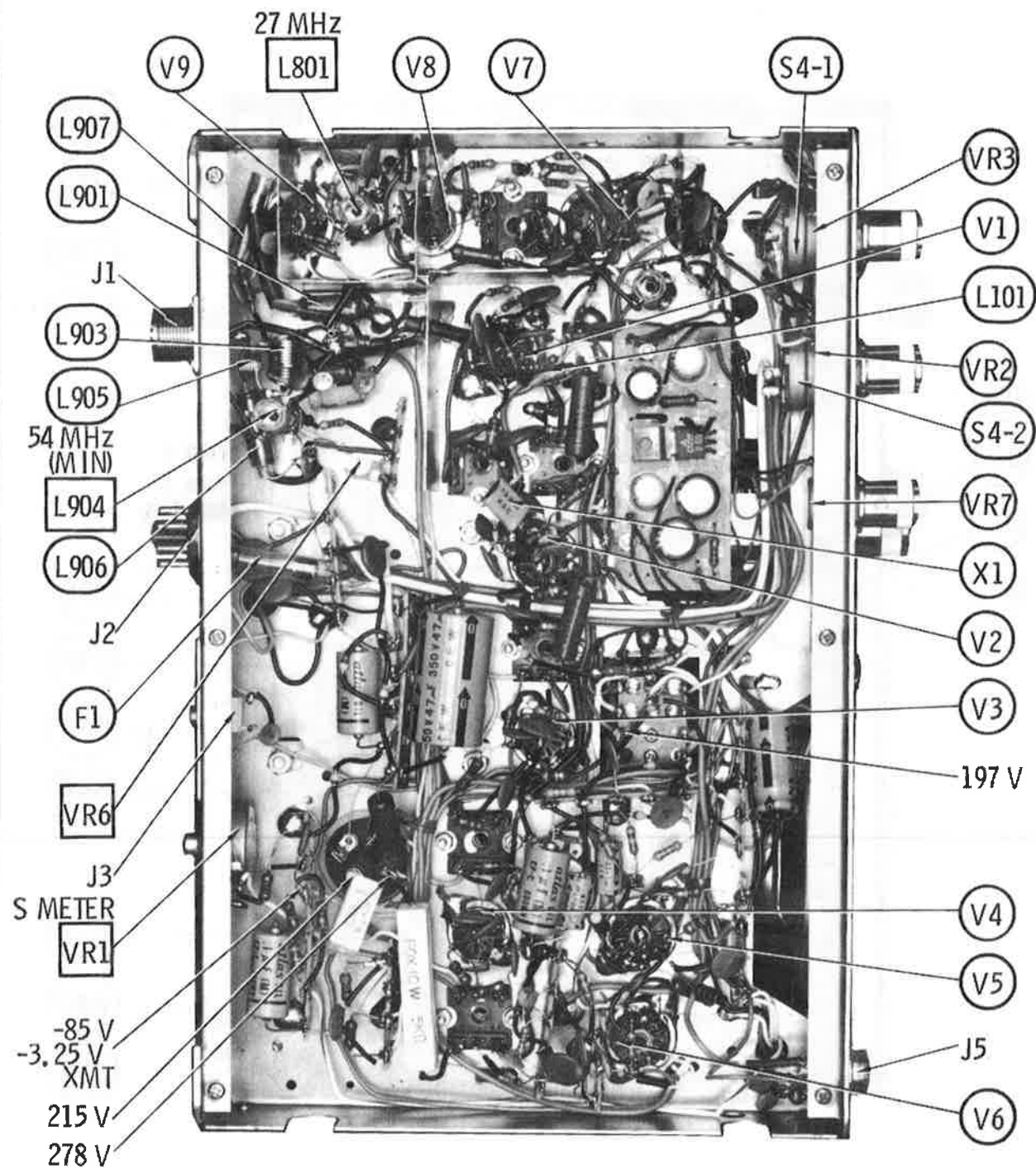
C H A N N E L	1 = 5.46 Volts 0 = 0 Volts 						
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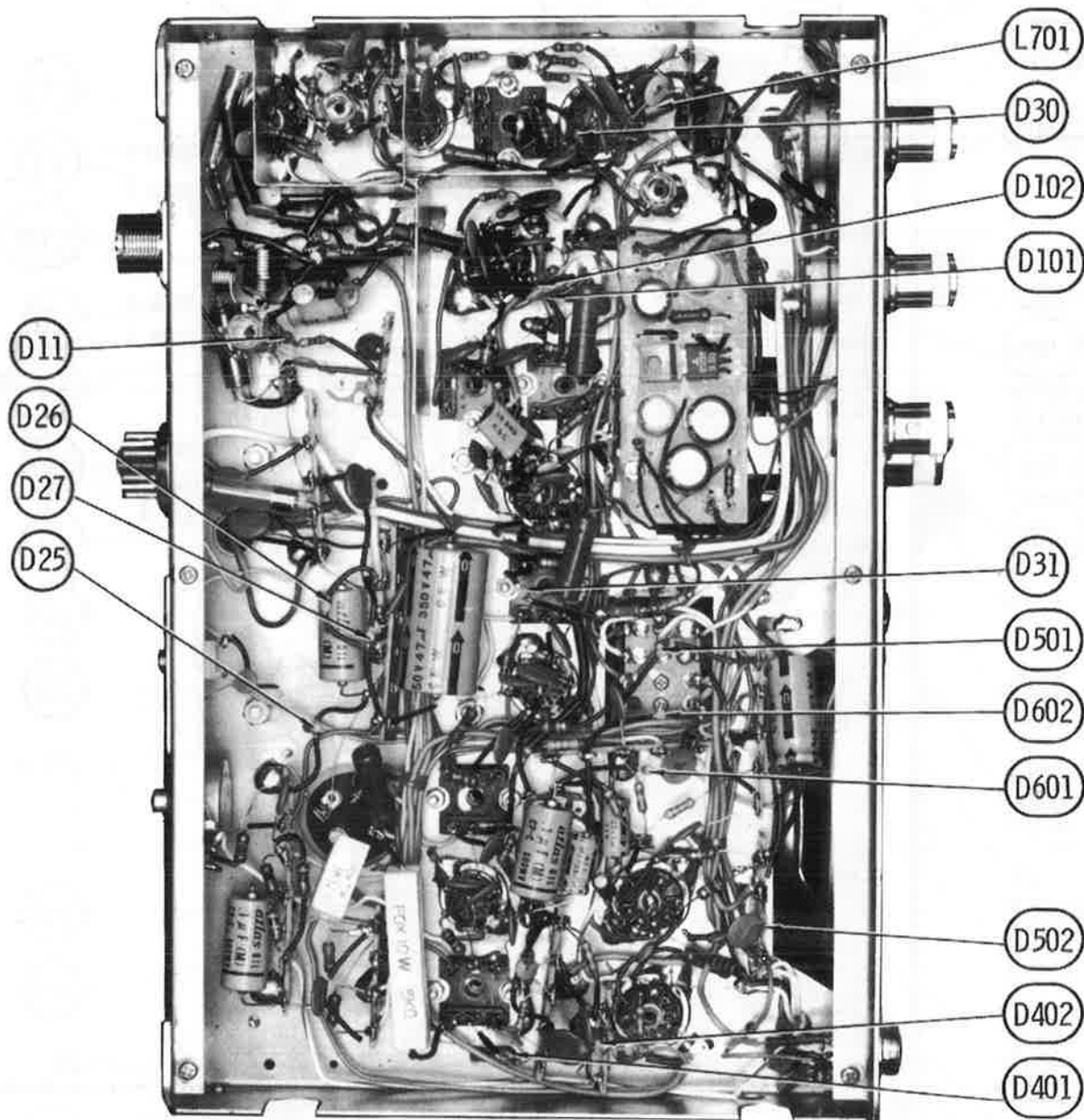
CHASSIS - TOP



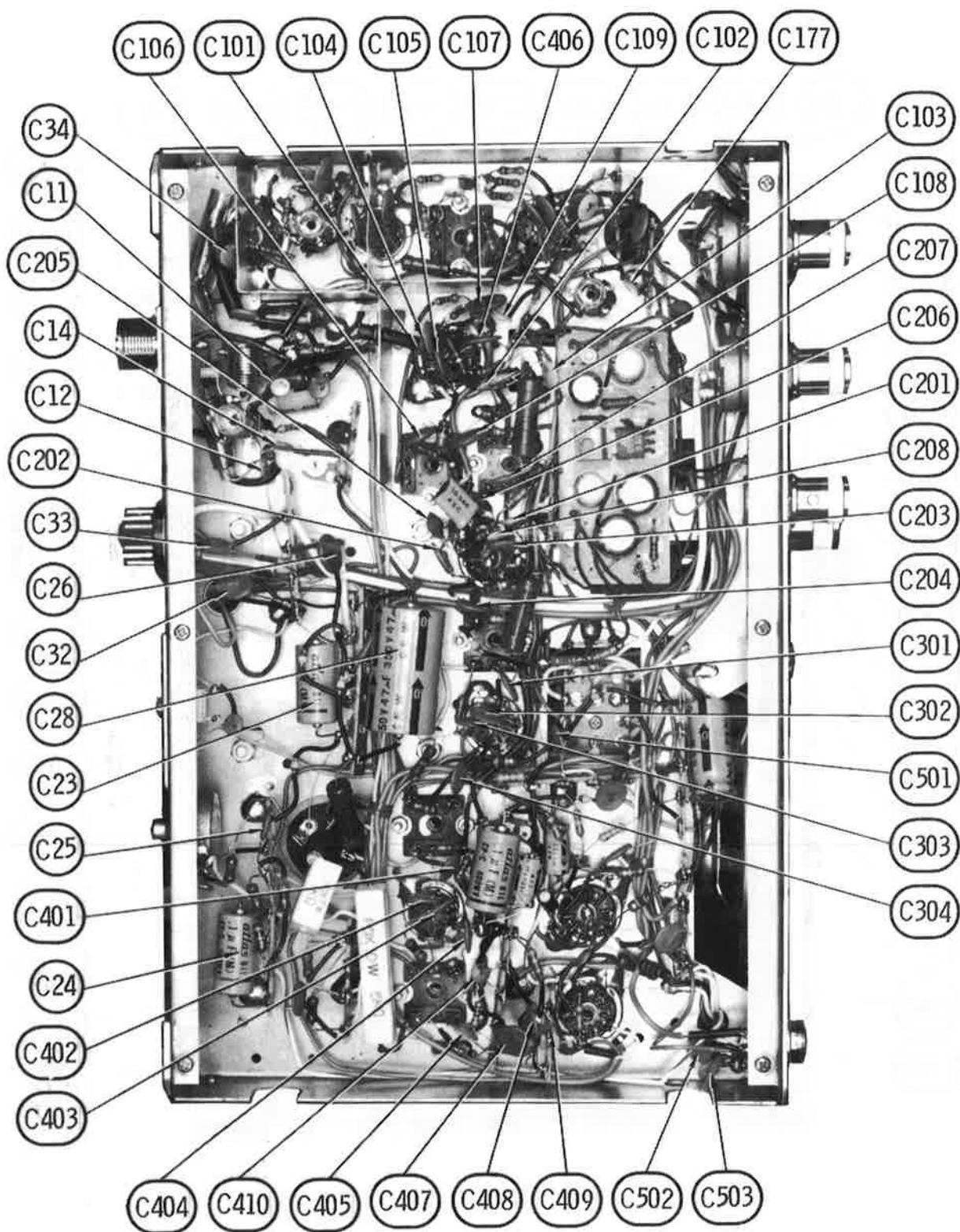
CHASSIS - TOP



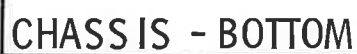
CHASSIS - BOTTOM

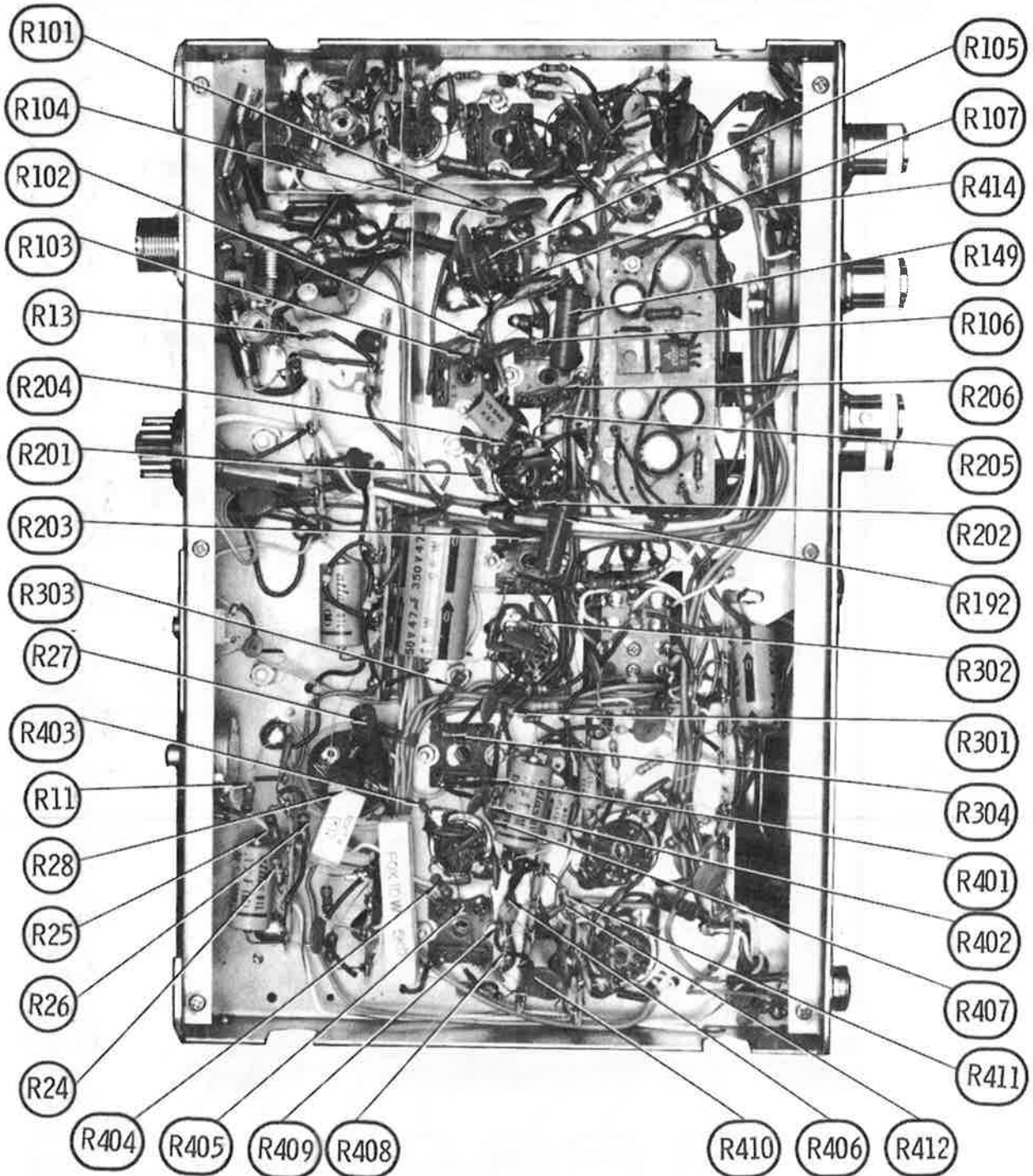


CHASSIS - BOTTOM

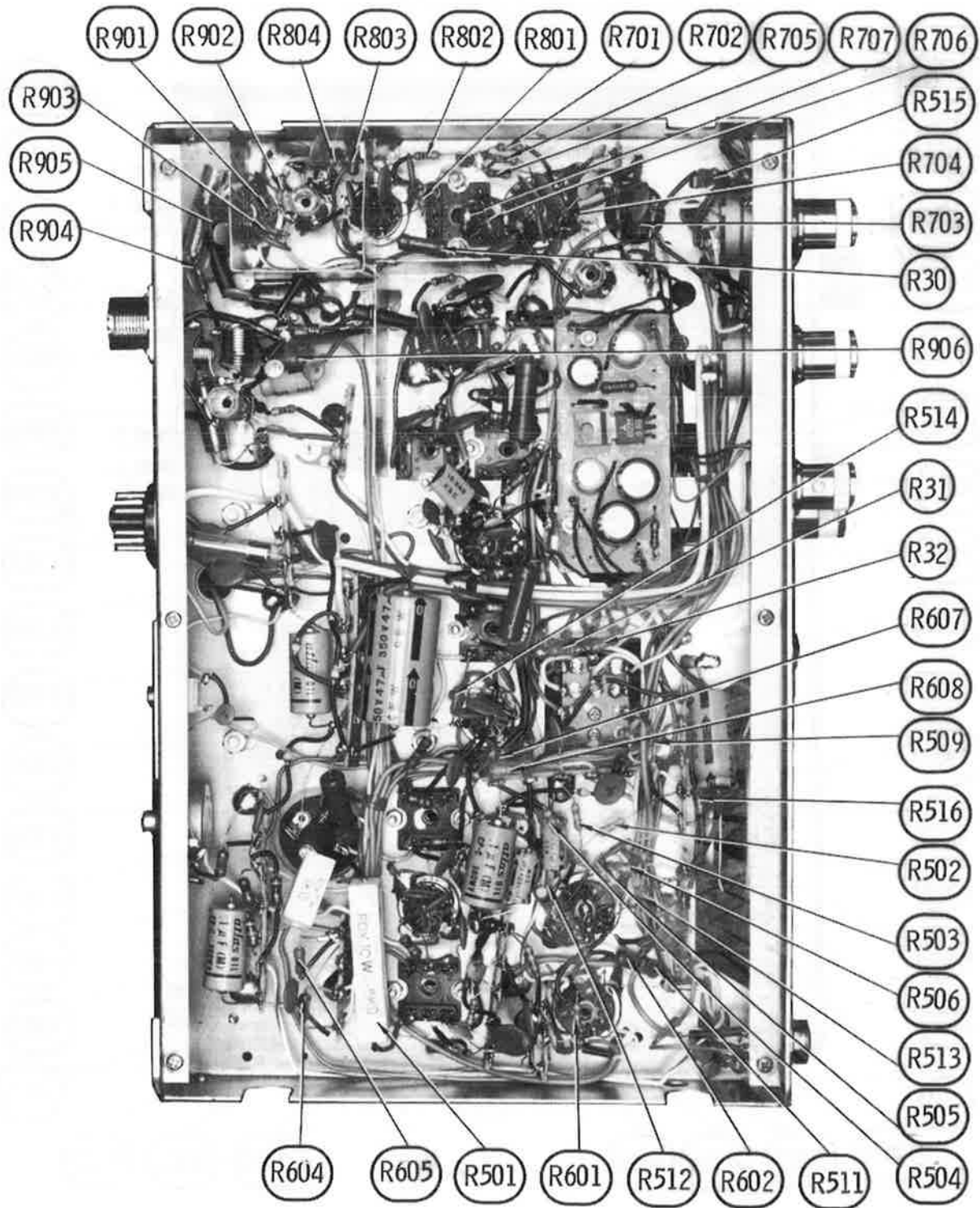


CHASSIS - BOTTOM

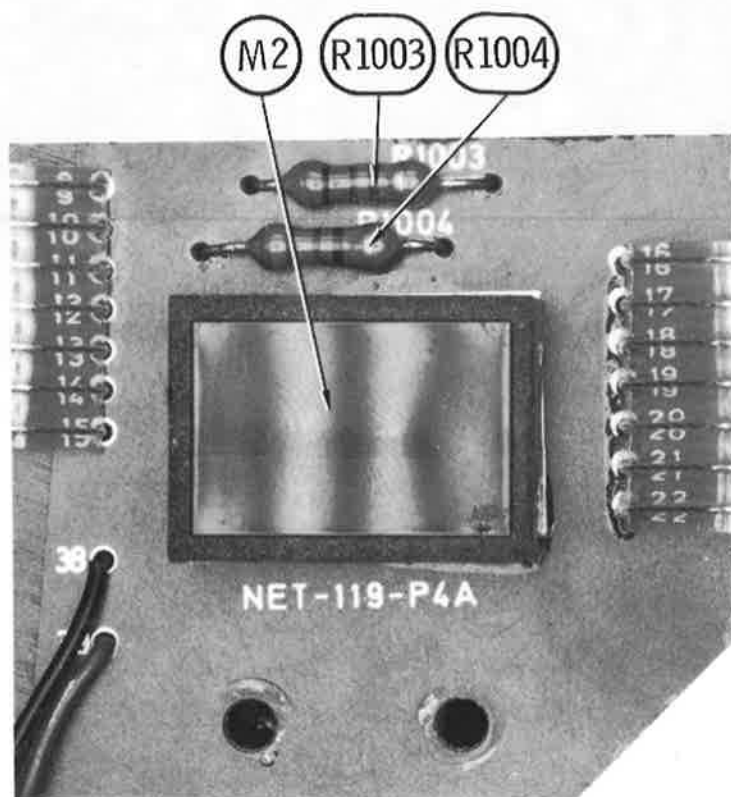
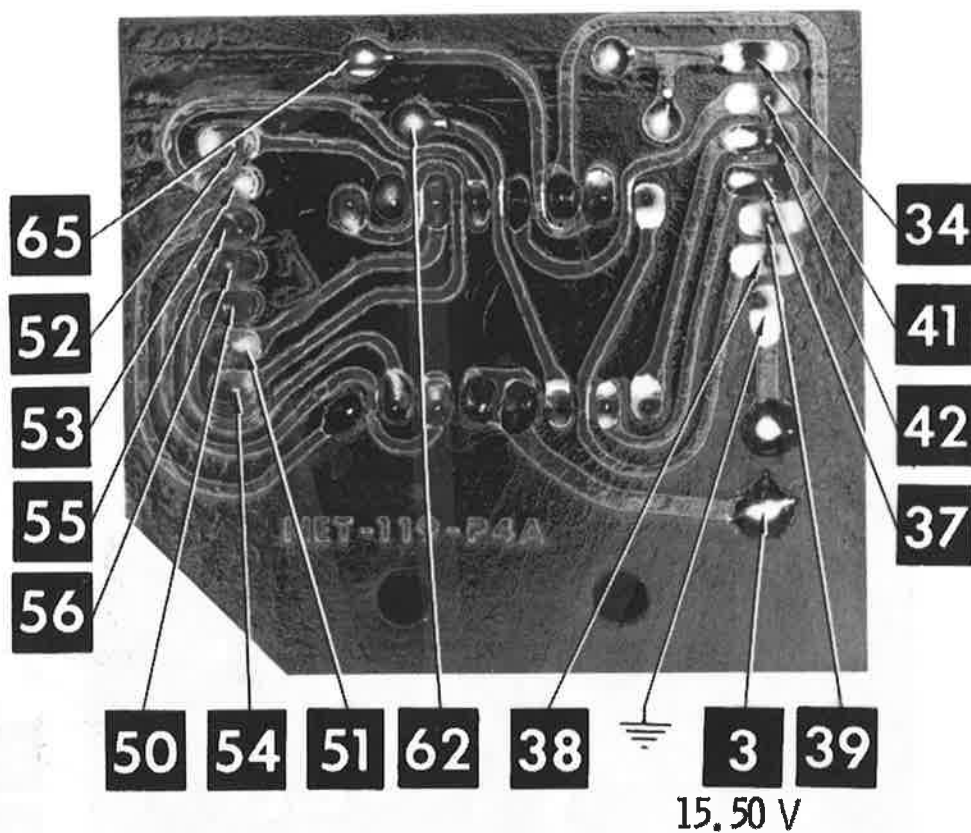




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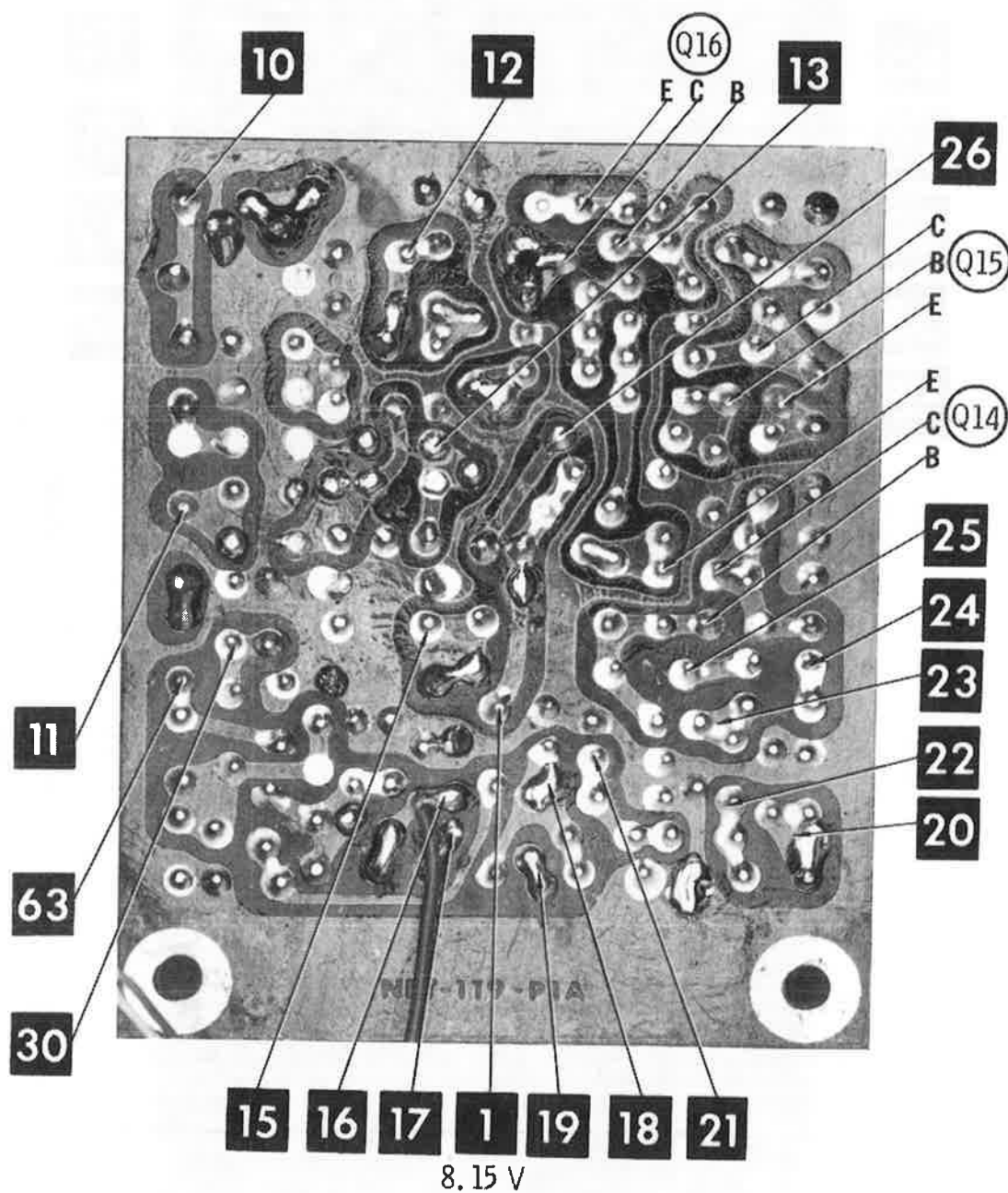


CHASSIS - BOTTOM

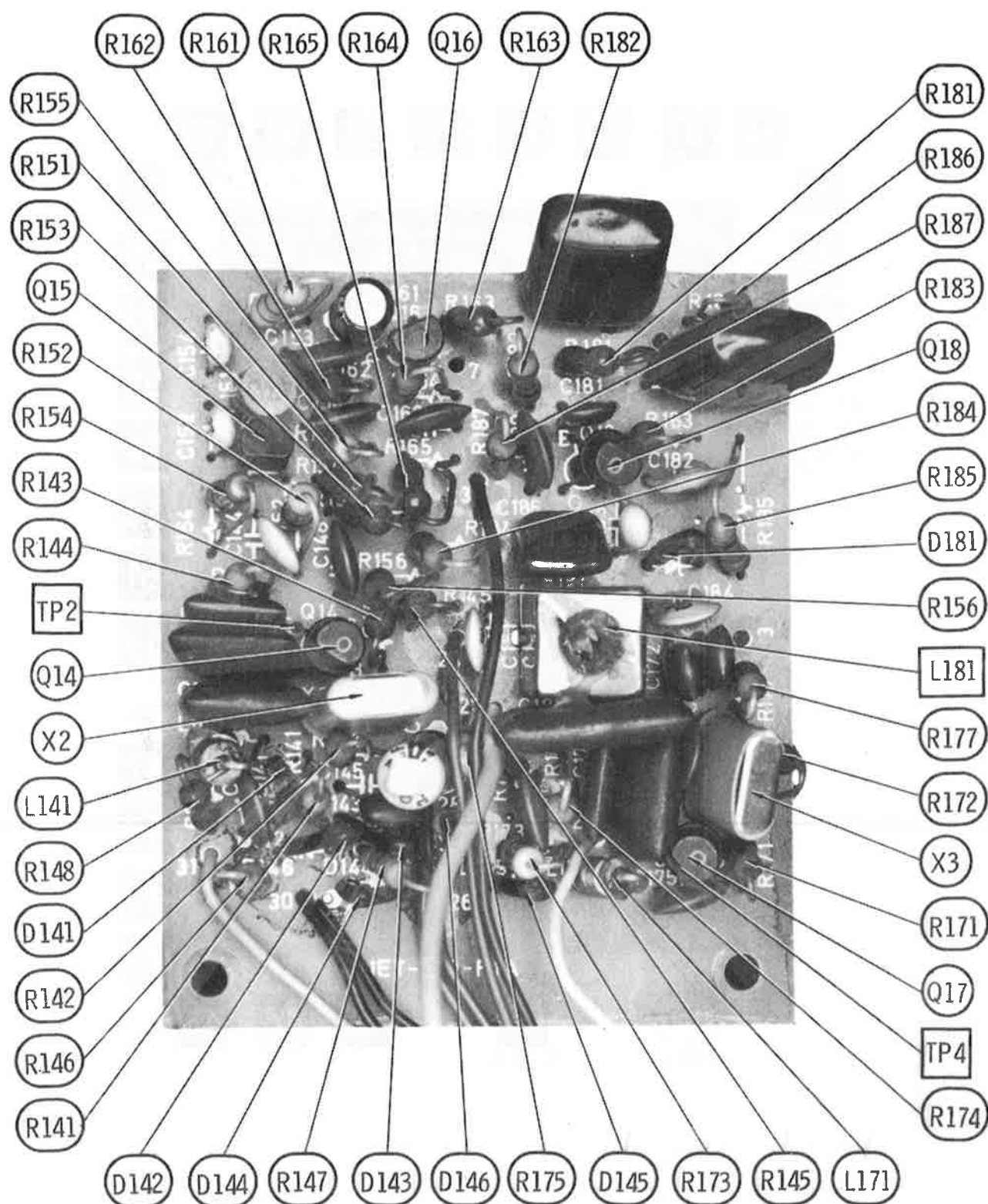


GEMTRONICS MODEL GTX-5000

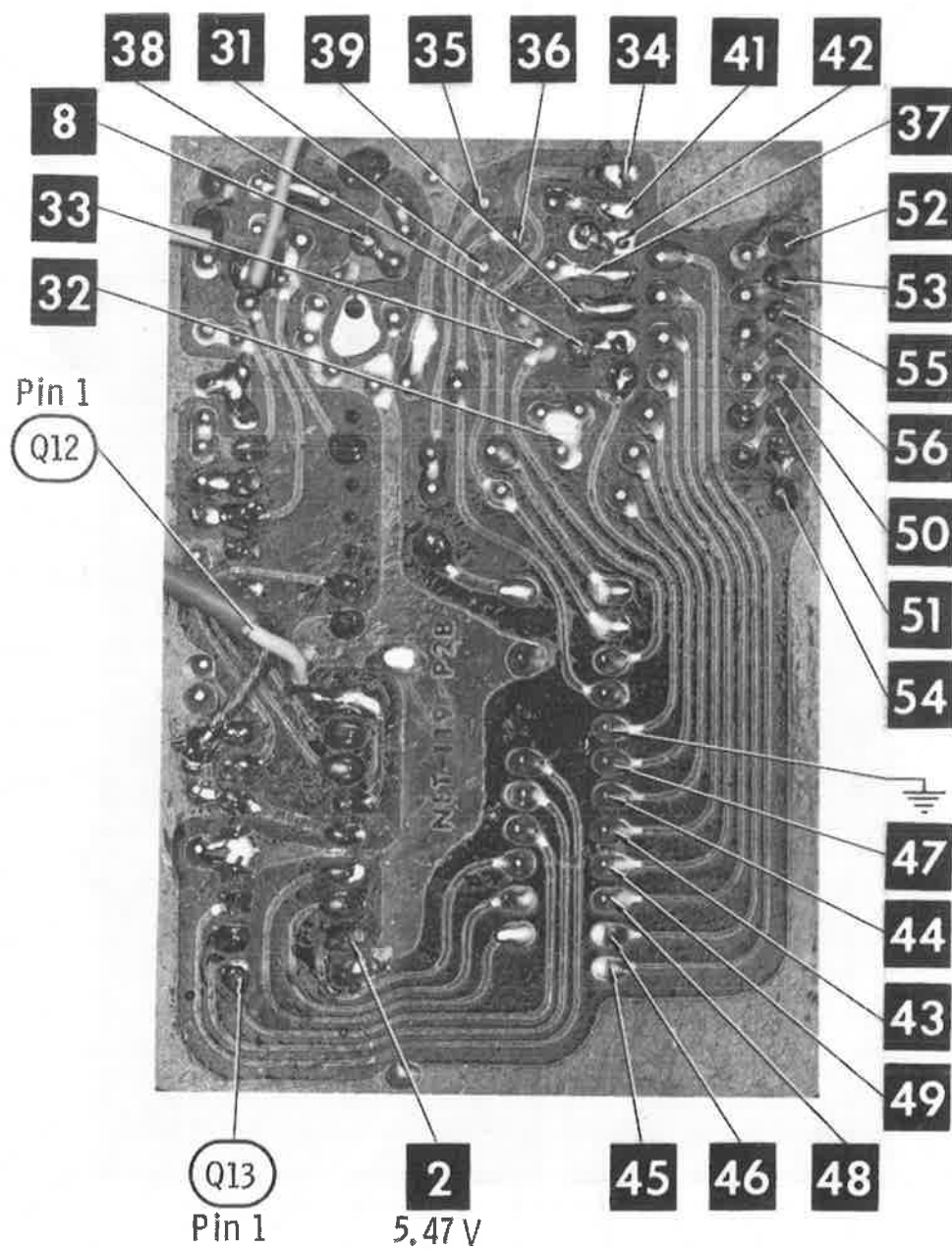
LED BOARD



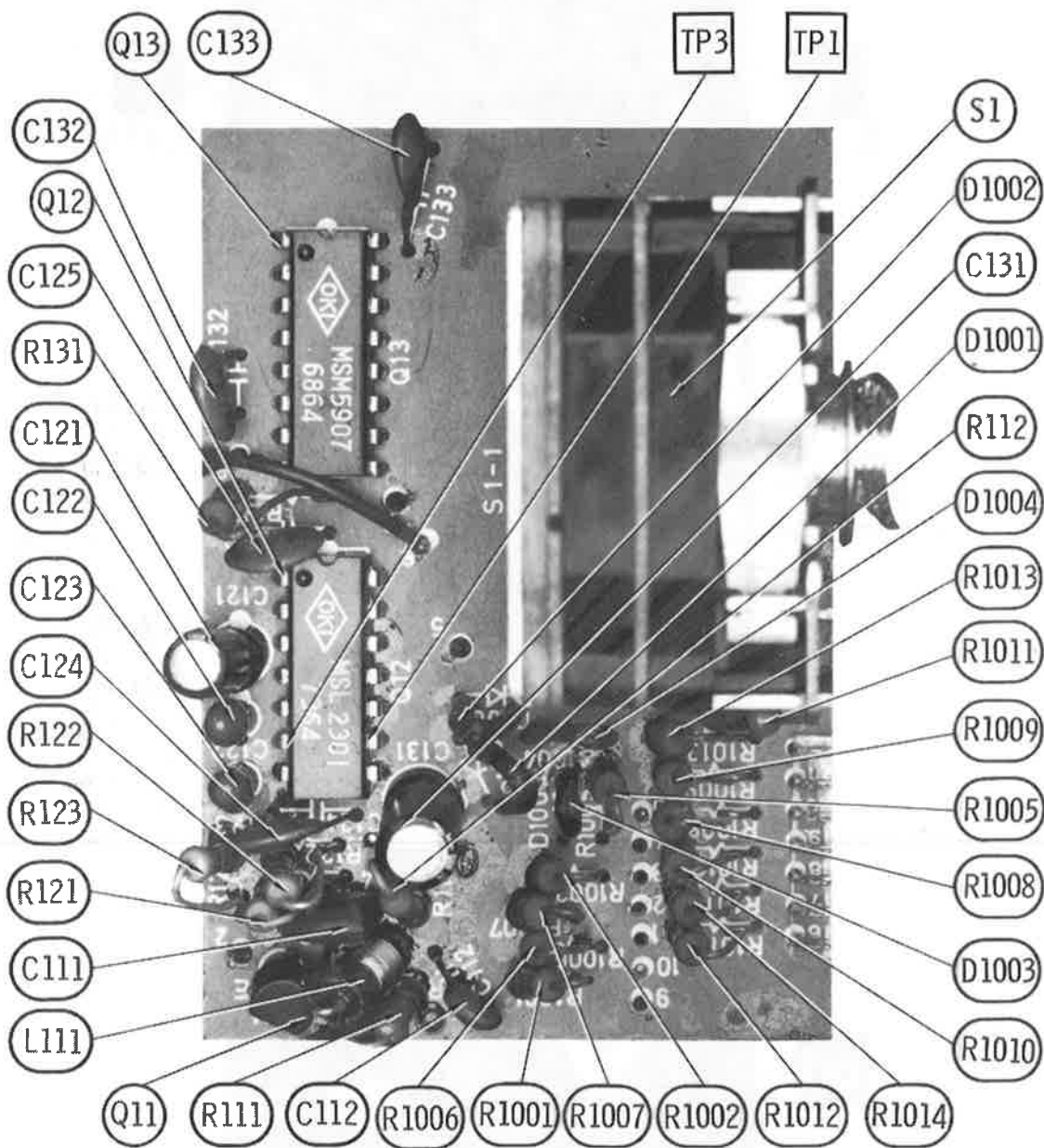
PLL BOARD



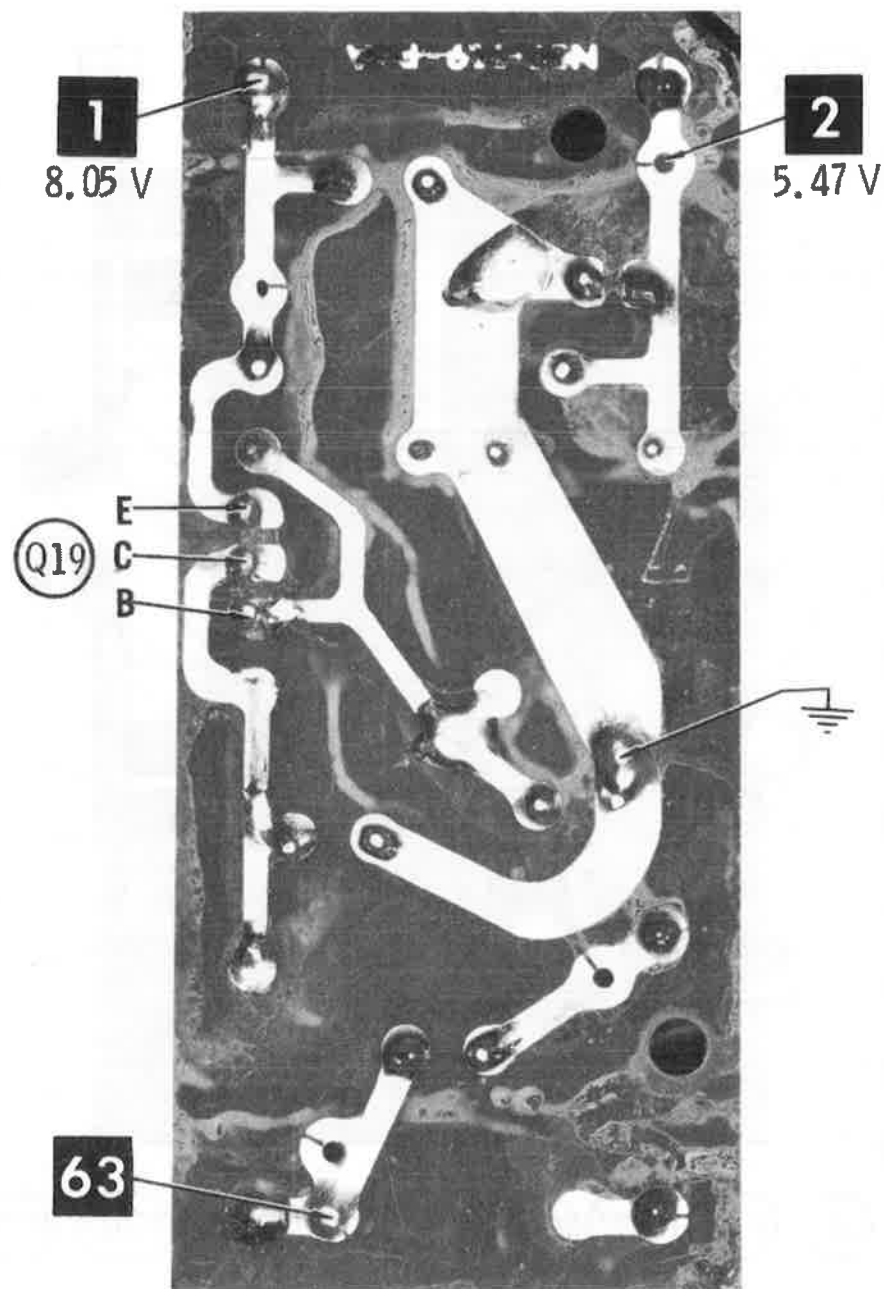
PLL BOARD



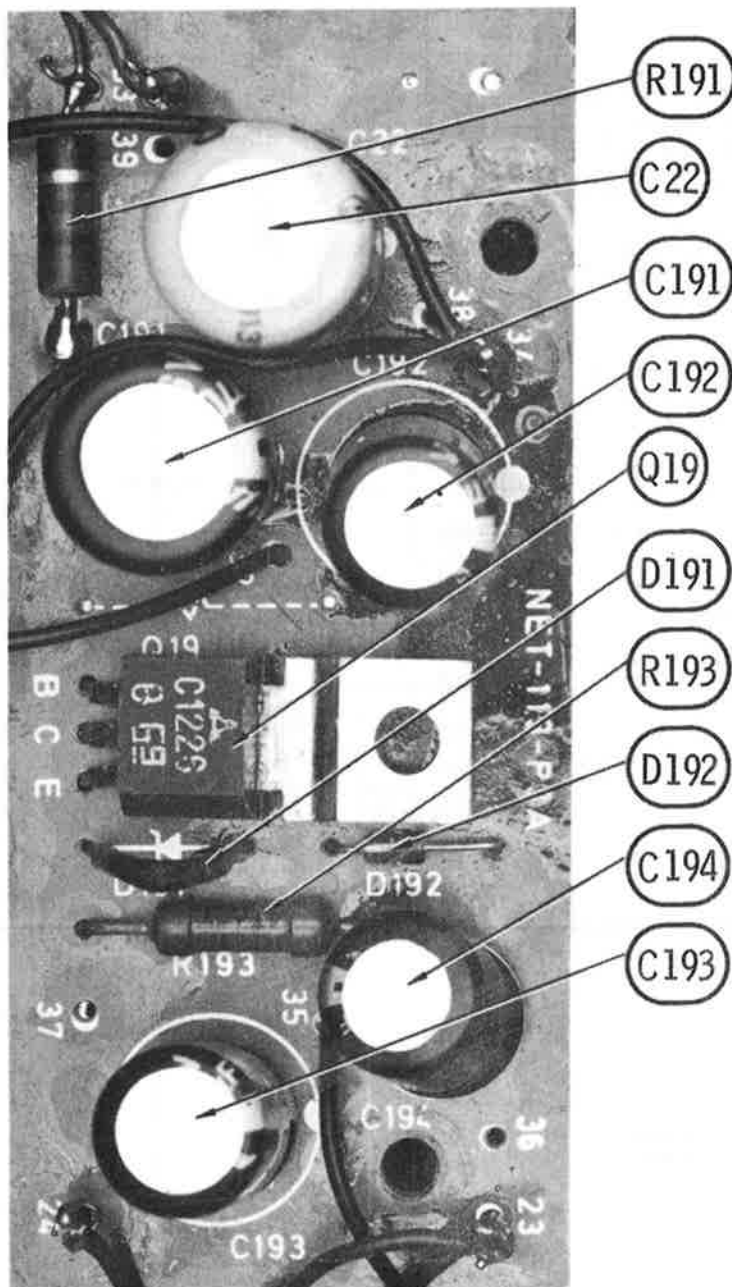
CH. SELECTOR BOARD



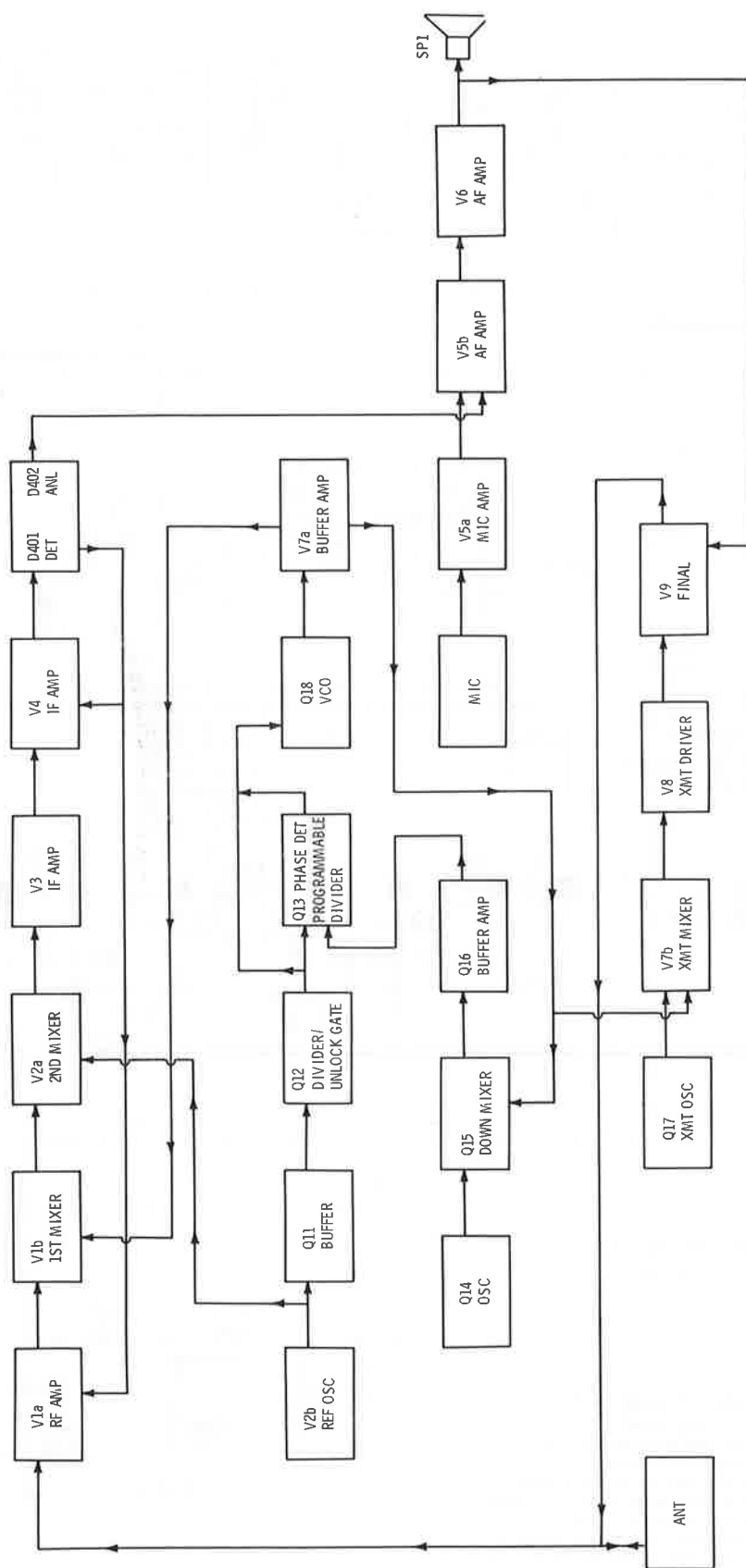
CH. SELECTOR BOARD



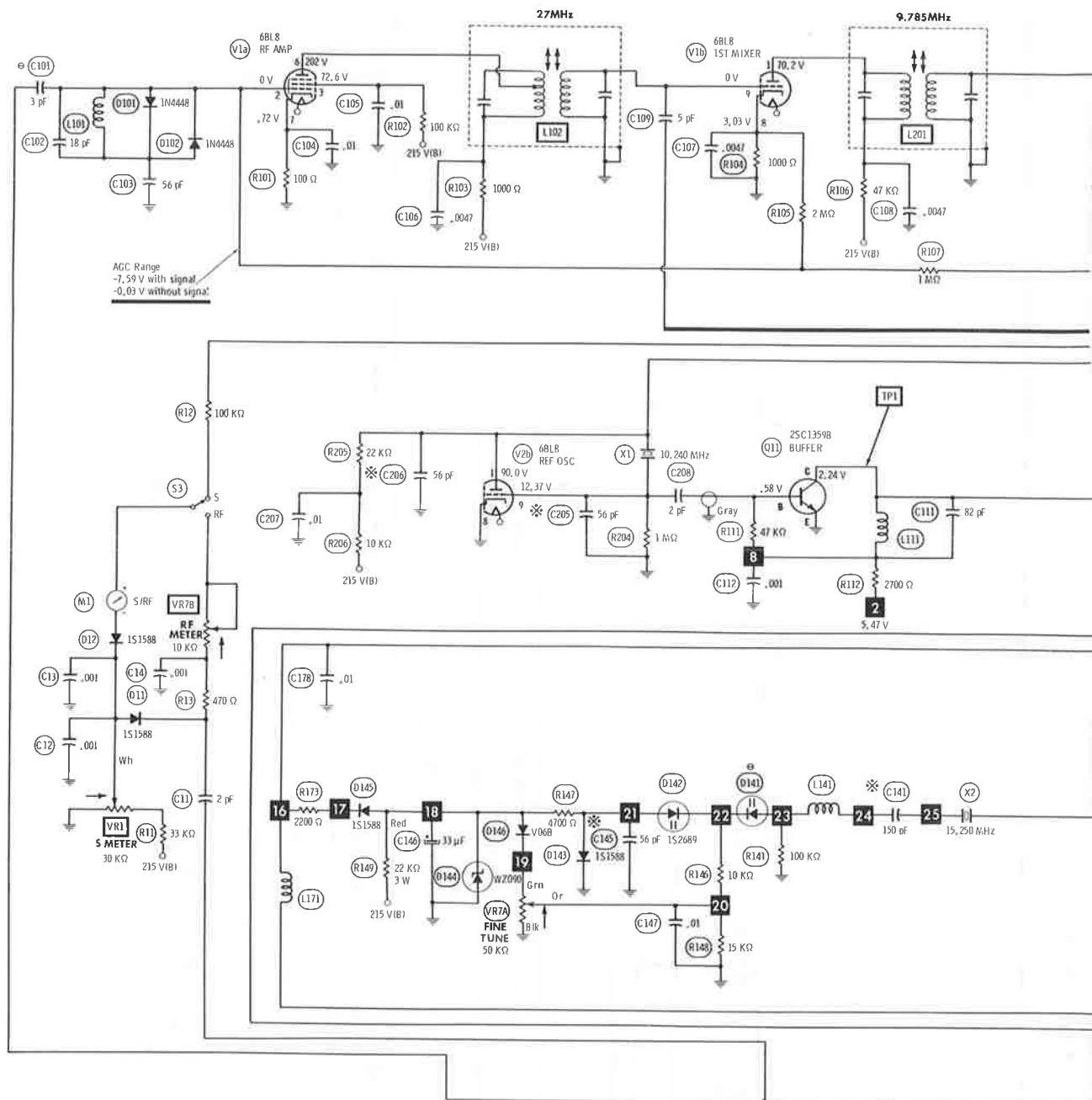
POWER SUPPLY BOARD



POWER SUPPLY BOARD



BLOCK DIAGRAM



✖ Circuitry not used in some versions

--- Circuitry used in some versions

⊙ See parts list

✱ Nominal value

⊥ Ground

⏏ Chassis

▽ Common tie point

Measurements made in Channel 1 with switching as shown unless noted.

Item numbers in rectangles appear in the alignment/adjustment instructions.

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.

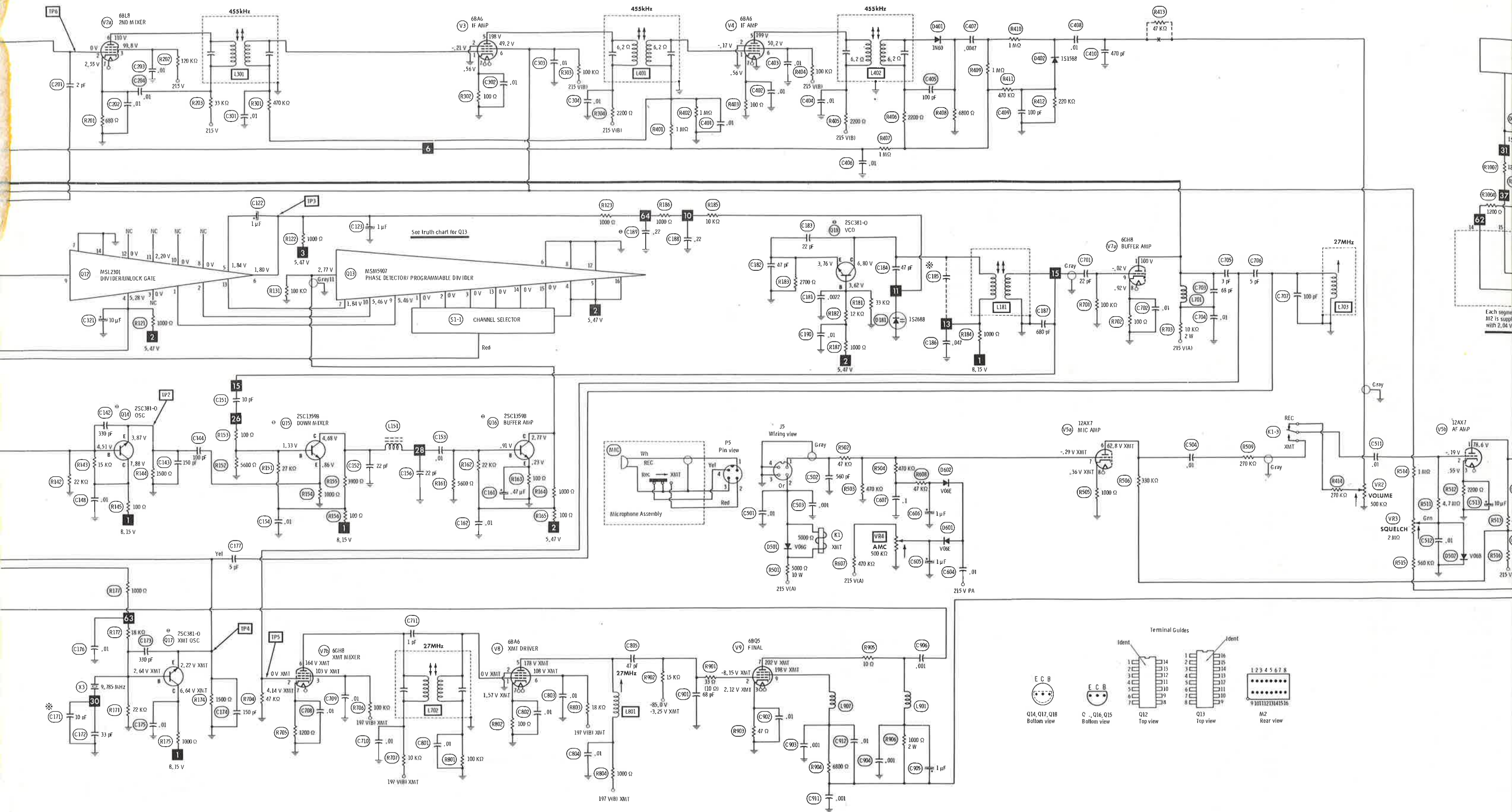
Resistors are 1/2W or less, 5% unless noted.

Value in () used in some versions.

A PHOTOFAC STANDARD NOTATION SCHEMATIC

WITH **CIRCUITRACE**

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

TUBES

AMPEREX			GENERAL ELECTRIC		RCA		SYLVANIA	
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	RF Amp/1st Mixer	6BL8	V6	Output/Modulation	6BQ5			
V2	2nd Mixer/Ref Oscillator	6BL8	V7	Buffer Amp/XMT Mixer	6GH8			
V3	IF Amp	6BA6	V8	XMT Driver	6BA6			
V4	IF Amp	6BA6	V9	Final	6BQ5			

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.	THORDARSON PART No.	WORKMAN PART No.	ZENITH PART No.
D11	1S1588	D010090	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
D12	1S1588	D010090	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
D21	V06E	D000152	GE-504A	PTC201	HEPR0053	REN 116	SK3312	RT-214	ECG116	1N4004	WEP157	212-96
D22	V06E	D000152	GE-504A	PTC201	HEPR0053	REN 116	SK3312	RT-214	ECG116	1N4004	WEP157	212-96
D23	V06B	D000149	GE-504A	PTC201	HEPR0052	REN 116	SK3030	RT-213	ECG116	1N4004	WEP156	212-76
D24	V06B	D000149	GE-504A	PTC201	HEPR0052	REN 116	SK3030	RT-213	ECG116	1N4004	WEP156	212-76
D25	V06G	D000165	GE-504A	PTC202	HEPR0054	REN 116	SK3313	RT-215	ECG116	1N4007	WEP158	212-76
D26	V06G	D000165	GE-504A	PTC202	HEPR0054	REN 116	SK3313	RT-215	ECG116	1N4007	WEP158	212-76
D27	V06G	D000165	GE-504A	PTC202	HEPR0054	REN 116	SK3313	RT-215	ECG116	1N4007	WEP158	212-76
D30	V06G	D000165	GE-504A	PTC202	HEPR0054	REN 116	SK3313	RT-215	ECG116	1N4007	WEP158	212-76
D31	V06G	D000165	GE-504A	PTC202	HEPR0054	REN 116	SK3313	RT-215	ECG116	1N4007	WEP158	212-76
D101	1N4448	D090052	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
D102	1N4448	D090052	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
D141	1S2689	D260028	GE-90	PTC214	HEPR2503	REN 614	SK3056	RT-262	ECG614		WEP200	ZEN-453
D142	1S2689	D260028	GE-90	PTC214	HEPR2503	REN 614	SK3056	RT-262	ECG614		WEP200	ZEN-453
D143	1S1588	D010090	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
D144	WZ090	D160092	GEZD-9.1	ZM9.1B		REN 139	SK3060	RT-240	ECG5018	1N4739A	WEP1419	103-279-18
D145	1S1588	D010090	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
D146	V06B	D000149	GE-504A	PTC201	HEPR0052	REN 116	SK3030	RT-213	ECG116	1N4004	WEP156	212-76
D181	1S2688	D260015	GE-90	PTC121*	HEPR2503	REN 614	SK3056	RT-262	ECG614		WEP200	ZEN-453
D191	WZ090	D160092	GEZD-9.1	ZM9.1B		REN 139	SK3060	RT-240	ECG5018	1N4739A	WEP1419	103-279-18
D192	WZ058		GEZD-5.1		HEPZ0406		SK3056	RT-235	ECG5018	1N4733A	WEP1103	
D401	1N60	D010045	GE-514	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D402	1S1588	D010090	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
D501	V06G	D000165	GE-504A	PTC202	HEPR0054	REN 116	SK3313	RT-215	ECG116	1N4007	WEP158	212-76
D502	V06B	D000149	GE-504A	PTC201	HEPR0052	REN 116	SK3030	RT-213	ECG116	1N4004	WEP156	212-76
D601	V06E	D000152	GE-504A	PTC201	HEPR0053	REN 116	SK3312	RT-214	ECG116	1N4004	WEP157	212-96
D602	V06E	D000152	GE-504A	PTC201	HEPR0053	REN 116	SK3312	RT-214	ECG116	1N4004	WEP157	212-96
D1001	1S1588	D010090	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
D1002	1S1588	D010090	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
D1003	1S1588	D010090	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
D1004	1S1588	D010090	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
Q11	2SC1359B		GE-212	PTC121*	HEPS0014*	REN 199	SK3122	RT-308	ECG229*	2SC710	WEP66	121-Z9000
	2SC1675	Q331614	GE-213	PTC139*	HEPS0025*	REN 123A*	SK3124	RT-308	ECG229*		WEP956*	ZEN-127
	2SC1359	Q321323	GE-212	PTC121*	HEPS0014*	REN 199	SK3122	RT-308	ECG229*	2SC710	WEP66	121-Z9000
	2SC381	Q310347	GE-61*	PTC132*	HEPS0009*	REN 107	SK3039*	RT-107A	ECG107	2SC380	WEP535	ZEN-127
Q12	MSL2301	Q840121										
Q13	MSM5907	Q840134										
Q14	2SC381-0	Q310347	GE-61*	PTC132*	HEPS0009*	REN 107	SK3039*	RT-107A	ECG107	2SC380	WEP535	ZEN-127
	2SC381	Q310347	GE-61*	PTC132*	HEPS0009*	REN 107	SK3039*	RT-107A	ECG107	2SC380	WEP535	ZEN-127
	2SC1675	Q331614	GE-213	PTC139*	HEPS0025*	REN 123A*	SK3124	RT-308	ECG229*	2SC710	WEP66	121-Z9000
Q15	2SC1359	Q321323	GE-212	PTC121*	HEPS0014*	REN 199	SK3122	RT-308	ECG229*	2SC710	WEP66	121-Z9000
	2SC1675	Q331614	GE-213	PTC139*	HEPS0025*	REN 123A*	SK3124	RT-308	ECG229*	2SC710	WEP66	121-Z9000
	2SC1359	Q321323	GE-212	PTC121*	HEPS0014*	REN 199	SK3122	RT-308	ECG229*	2SC710	WEP66	121-Z9000
Q16	2SC381	Q310347	GE-61*	PTC132*	HEPS0009*	REN 107	SK3039*	RT-107A	ECG107	2SC380	WEP535	ZEN-127
	2SC1359B		GE-212	PTC121*	HEPS0014*	REN 199	SK3122	RT-308	ECG229*	2SC710	WEP66	121-Z9000
	2SC1359	Q321323	GE-213	PTC139*	HEPS0025*	REN 123A*	SK3124	RT-308	ECG229*	2SC710	WEP66	121-Z9000
	2SC1675	Q331614	GE-212	PTC121*	HEPS0014*	REN 199	SK3122	RT-308	ECG229*	2SC710	WEP66	121-Z9000
Q17	2SC381	Q310347	GE-61*	PTC132*	HEPS0009*	REN 107	SK3039*	RT-107A	ECG107	2SC380	WEP535	ZEN-127
	2SC381-0	Q310347	GE-61*	PTC132*	HEPS0009*	REN 107	SK3039*	RT-107A	ECG107	2SC380	WEP535	ZEN-127
	2SC1675	Q331614	GE-213	PTC139*	HEPS0025*	REN 123A*	SK3124	RT-308	ECG229*	2SC710	WEP66	121-Z9000
	2SC1359	Q321323	GE-212	PTC121*	HEPS0014*	REN 199	SK3122	RT-308	ECG229*	2SC710	WEP66	121-Z9000
Q18	2SC381	Q310347	GE-61*	PTC132*	HEPS0009*	REN 107	SK3039*	RT-107A	ECG107	2SC380	WEP535	ZEN-127
	2SC1675	Q331614	GE-213	PTC139*	HEPS0025*	REN 123A*	SK3124	RT-308	ECG229*	2SC710	WEP66	121-Z9000
	2SC1359	Q321323	GE-212	PTC121*	HEPS0014*	REN 199	SK3122	RT-308	ECG229*	2SC710	WEP66	121-Z9000
Q19	2SC381	Q310347	GE-61*	PTC132*	HEPS0009*	REN 107	SK3039*	RT-107A	ECG107	2SC380	WEP535	ZEN-127
	2SC1675	Q331614	GE-213	PTC139*	HEPS0025*	REN 123A*	SK3124	RT-308	ECG229*	2SC710	WEP66	121-Z9000
	2SC1226Q (14)		GE-215	PTC186		REN 186A	SK3197	RT-166	ECG186A	2SC1226	WEP751	
	2SC1226		GE-28	PTC110	HEPS3041	REN 186	SK3197	RT-166	ECG186A	2SC1096	WEP1096	
Q20	2SB471B (15)	Q200415	GE-25	PTC105A	HEPG6005	RE 11	SK3009	RT-127A	ECG121		WEP235	ZEN-326
	2SB471B		GE-25	PTC105A	HEPG6005	RE 11	SK3009	RT-127A	ECG121		WEP235	ZEN-326
Q21	2SB471B (15)	Q200415	GE-25	PTC105A	HEPG6005	RE 11	SK3009	RT-127A	ECG121		WEP235	ZEN-326
	2SB471B		GE-25	PTC105A	HEPG6005	RE 11	SK3009	RT-127A	ECG121		WEP235	ZEN-326

* Lead configuration may vary from original.
(14) Rating, 10 WATT @ 3.0 AMP.
(15) Rating, 12 WATT @ 3.0 AMP.

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

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA				
		MFR. PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	Q-LINE
C21	22 50V	C640062	WBR25-50	TT50X25A	QEI-295	TVA-1306
C22	470 16V	C620171	PC500-16	VTT470K16	QV1-151	EV-1250
C28	47 350V	C760104	WBR50-450	TC79B		TVA-1713
C29a	47 350V	C960014	CC0236A	PPF330.8A		TVLU-3530
b	47 350V					
c	47 350V					
C35	10 50V	C640059	PC10-50	VTT10063	QV1-45	EV-1622
C121	10 16V	C620079	PC10-25	VTT10B25	QV1-41	EV-1222
C122	1 25V	C530017		TDC105M035EL		SD35-19
C123	1 25V	C530017		TDC105M035EL		SD35-19
C131	33 6.3V	C600044	PC30-25	VTT33B10	QV1-61	EV-1125
C146	33 16V	C620095	PC30-25	VTT33D25	QV1-63	EV-1325
C161	47 50V	C640017	PC1-50	VTT47A63	QV1-3	EV-1610
C191	470 16V	C620171	PC500-16	VTT470K16	QV1-151	EV-1250
C192	470 10V	C610209	PC500-16	VTT470K16	QV1-149	EV-1150
C193	470 10V	C610209	PC500-16	VTT470K16	QV1-149	EV-1150
C194	220 10V	C610092	PC250-10	VTT220F10	QV1-115	EV-1140
C513	10 16V	C620079	PC10-25	VTT10B25	QV1-41	EV-1222
C514	10 350V	C760078	PC10-25	VTT10B25	QV1-43	EV-1322
C605	1 160V	C750017	WBR1-450	TC56A		TVA-1500
C606	1 160V	C750017	WBR1-450	TC56A		TVA-1500
C905	1 160V	C750017	WBR1-450	TC56A		TVA-1500

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	
C11	2 500V	C070056	DTZ-2R2	NP02P2	CN0522		10TCC-V22	
C12	.001 500V		DD-102G	GP1000	GP210	QC2-81	5GA-D10	
C13	.001 500V		DD-102G	GP1000	GP210	QC2-81	5GA-D10	
C14	.001 500V		DD-102G	GP1000	GP210	QC2-81	5GA-D10	
C23	.1 600V				DPMS6P1	EW6010	6PS-P10	
C24	.1 600V				DPMS6P1	EW6010	6PS-P10	
C25	.01 500V			DD-1032	GP10000	GP110	5GA-S10	
C26	.0047 500V			DD-472	GP4700	GP247	5GA-D47	
C32	.0047 500V			DD-472	GP4700	GP247	5GA-D47	
C33	.0047 500V			DD-472	GP4700	GP247	5GA-D47	
C34	.001 500V			DD-102G	GP1000	GP210	5GA-D10	
C101	3 500V			DTZ-3R3	NP03P3	CN0533		10TCC-V33
	5 500V			DTZ-4R7	NP04P7	CN0547		10TCC-V47
	18 500V					CN0418		10TCC-Q18
C103	56 500V			DD-560		GP456		10TS-Q56
C104	.01 500V			DD-1032	GP10000	GP110		5GA-S10
C105	.01 500V			DD-1032	GP10000	GP110		5GA-S10
C106	.0047 500V			DD-472	GP4700	GP247		5GA-D47
C107	.0047 500V			DD-472	GP4700	GP247		5GA-D47
C108	.0047 500V			DD-472	GP4700	GP247		5GA-D47
C109	5 + .5 500V			DTZ-4R7	NP04P7	CN0547		10TCC-V47
C111	82 50V			DD-102G	CD15ED820J03	SX482	QW1-25	MMA-820
C112	.001 50V			DC-103	MGPO1	TA110	QC2-81	5GA-D10
C124	.01 50V			DC-103	MGPO1	TA110	QC2-141	TG-S10
C125	.01 50V			DC-103	MGPO1	TA110	QC2-141	TG-S10
C132	.01 50V			DC-103	MGPO1	TA110	QC2-141	TG-S10
C133	.01 50V			DC-103	MGPO1	TA110	QC2-141	TG-S10
C141	150 50V				CD15FD151J03	SX315	QW1-31	MMA-151
C142	330 50V				CD15FD331J03	SX333	QW1-39	MMA-331
C143	150 50V				CD15FD151J03	SX315	QW1-31	MMA-151
C144	100 50V			DD-101	GP100	GP310		10TS-T10
C145	56 50V				CD15ED560J03	SX456	QW1-21	MMA-560
C147	.01 50V			DC-103	MGPO1	TA110	QC2-141	TG-S10
C148	.01 50V			DC-103	MGPO1	TA110	QC2-141	TG-S10
C151	10 500V			DTZ-10	NP010	CN0410		10TCC-Q10
C152	22 50V			DTZ-22	NP022	CN0422		10TCC-Q22
C153	.01 50V			DC-103	MGPO1	TA110	QC2-141	TG-S10
C154	.01 50V			DC-103	MGPO1	TA110	QC2-141	TG-S10
C156	22 50V			DTZ-22	NP022	CN0422		10TCC-Q22
C162	.01 50V			DC-103	MGPO1	TA110	QC2-141	TG-S10
C171	10 50V				CD15CD100J03		QW1-6	MMA-100
C172	33 50V				CD15ED330J03	SX433	QW1-15	MMA-330
C173	330 50V				CD15FD331J03	SX333	QW1-39	MMA-331
C174	150 50V				CD15FD151J03	SX315	QW1-31	MMA-151
C175	.01 50V			DC-103	MGPO1	TA110	QC2-141	TG-S10
C176	.01 50V			DC-103	MGPO1	TA110	QC2-141	TG-S10
C177	5 N470 500V					*		10TCT-V50
C178	.01 50V			DC-103	MGPO1	TA110	QC2-141	TG-S10
C181	.0022 50V				DPMS6D22	EW6222		6PS-D22
C182	47 50V			DTZ-47	NP047	CN0447		10TCC-Q47
C183	22 50V		DTZ-22	NP022	CN0422		10TCC-Q22	
C184	47 50V		DTZ-47	NP047	CN0447		10TCC-Q47	
C186	.047 50V			DPMS2S47	EW61A147	QF1-171	1PB-S47	
C187	680 50V			CD19FD681J03	SX368		MWC-681	
C188	.22 50V			DPMS2P22	EW61A022	QF1-253	1PB-P22	
C189	.02 50V			DPMS2S2	PVC212		2PS-S20	
C190	.01 50V		DC-103	MGPO1	TA110	QC2-141	TG-S10	
C201	2 500V		DTZ-2R2	NP02P2	CN0522		10TCC-V22	
C202	.01 500V		DD-1032	GP10000	GP110		5GA-S10	
C203	.01 500V		DD-1032	GP10000	GP110		5GA-S10	
C204	.01 500V		DD-1032	GP10000	GP110		5GA-S10	
C205	56 500V			CD15ED560J03	SX456	QW1-21	MMA-560	
C206	56 500V			CD15ED560J03	SX456	QW1-21	MMA-560	
C207	.01 500V		DD-1032	GP10000	GP110		5GA-S10	
C208	2 500V		DTZ-2R2	NP02P2	CN0522		10TCC-V22	
C301	.01 500V		DD-1032	GP10000	GP110		5GA-S10	
C302	.01 500V		DD-1032	GP10000	GP110		5GA-S10	
C303	.01 500V		DD-1032	GP10000	GP110		5GA-S10	
C304	.01 500V		DD-1032	GP10000	GP110		5GA-S10	
C401	.01 500V		DD-1032	GP10000	GP110		5GA-S10	

PARTS LIST AND DESCRIPTION (CONTINUED)

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

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA				
		MFG. PART No.	CORNELL- DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
					Q-LINE	GENERAL LINE
C21	22 50V	C640062	WBR25-50	TT50X25A	QE1-295	TVA-1306
C22	470 16V	C620171	PC500-16	VTT470K16	QV1-151	EV-1250
C28	47 350V	C760104	WBR50-450	TC79B		TVA-1713
C29a	47 350V	C960014	CC0236A	PPF330.8A		TVLU-3530
b	47 350V					
c	47 350V					
C35	10 50V	C640059	PC10-50	VTT10063	QV1-45	EV-1622
C121	10 16V	C620079	PC10-25	VTT100B25	QV1-41	EV-1222
C122	1 25V	C530017		TDC105M035EL		SD35-19
C123	1 25V	C530017		TDC105M035EL		SD35-19
C131	33 6.3V	C600044	PC30-25	VTT33B10	QV1-61	EV-1125
C146	33 16V	C620095	PC30-25	VTT33D25	QV1-63	EV-1325
C161	47 50V	C640017	PC1-50	VTT47A63	QV1-3	EV-1610
C191	470 16V	C620171	PC500-16	VTT470K16	QV1-151	EV-1250
C192	470 10V	C610209	PC500-16	VTT470K16	QV1-149	EV-1150
C193	470 10V	C610209	PC500-16	VTT470K16	QV1-149	EV-1150
C194	220 10V	C610092	PC250-10	VTT220F10	QV1-115	EV-1140
C513	10 16V	C620079	PC10-25	VTT100B25	QV1-41	EV-1222
C514	10 350V	C760078	PC10-25	VTT100B25	QV1-43	EV-1322
C605	1 160V	C750017	WBR1-450	TC56A		TVA-1500
C606	1 160V	C750017	WBR1-450	TC56A		TVA-1500
C905	1 160V	C750017	WBR1-450	TC56A		TVA-1500

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	
C11	2 500V	C070056	DTZ-2R2	NP02P2	CN0522		10TCC-V22	
C12	.001 500V		DD-102G	GP1000	GP210	QC2-81	5GA-D10	
C13	.001 500V		DD-102G	GP1000	GP210	QC2-81	5GA-D10	
C14	.001 500V		DD-102G	GP1000	GP210	QC2-81	5GA-D10	
C23	.1 600V			DPMS6P1	EWF6010		6PS-P10	
C24	.1 600V			DPMS6P1	EWF6010		6PS-P10	
C25	.01 500V			DD-1032	GP10000	GP110	5GA-S10	
C26	.0047 500V			DD-472	GP4700	GP247	5GA-D47	
C32	.0047 500V			DD-472	GP4700	GP247	5GA-D47	
C33	.0047 500V			DD-472	GP4700	GP247	5GA-D47	
C34	.001 500V			DD-102G	GP1000	GP210	5GA-D10	
C101	3 500V			DTZ-3R3	NP03P3	CN0533	QC2-81	10TCC-V33
	5 500V			DTZ-4R7	NP04P7	CN0547		10TCC-V47
C102	18 500V					CN0418		10TCC-Q18
C103	56 500V			DD-560		GP456		10TS-Q56
C104	.01 500V			DD-1032	GP10000	GP110		5GA-S10
C105	.01 500V			DD-1032	GP10000	GP110		5GA-S10
C106	.0047 500V			DD-472	GP4700	GP247		5GA-D47
C107	.0047 500V			DD-472	GP4700	GP247		5GA-D47
C108	.0047 500V			DD-472	GP4700	GP247		5GA-D47
C109	5 +.5 500V			DTZ-4R7	NP04P7	CN0547		10TCC-V47
C111	82 50V				CD15ED820J03	SX482	QW1-25	MMA-820
C112	.001 50V			DD-102G	GP1000	GP210	QC2-81	5GA-D10
C124	.01 50V			DC-103	MGP01	TA110	QC2-141	TG-S10
C125	.01 50V			DC-103	MGP01	TA110	QC2-141	TG-S10
C132	.01 50V			DC-103	MGP01	TA110	QC2-141	TG-S10
C133	.01 50V			DC-103	MGP01	TA110	QC2-141	TG-S10
C141	150 50V				CD15FD151J03	SX315	QW1-31	MMA-151
C142	330 50V				CD15FD331J03	SX333	QW1-39	MMA-331
C143	150 50V				CD15FD151J03	SX315	QW1-31	MMA-151
C144	100 50V			DD-101	GP100	GP310		10TS-T10
C145	56 50V				CD15ED560J03	SX456	QW1-21	MMA-560
C147	.01 50V			DC-103	MGP01	TA110	QC2-141	TG-S10
C148	.01 50V			DC-103	MGP01	TA110	QC2-141	TG-S10
C151	10 500V			DTZ-10	NP010	CN0410		10TCC-Q10
C152	22 50V			DTZ-22	NP022	CN0422		10TCC-Q22
C153	.01 50V			DC-103	MGP01	TA110	QC2-141	TG-S10
C154	.01 50V			DC-103	MGP01	TA110	QC2-141	TG-S10
C156	22 50V			DTZ-22	NP022	CN0422		10TCC-Q22
C162	.01 50V			DC-103	MGP01	TA110	QC2-141	TG-S10
C171	10 50V				CD15CD100J03		QW1-6	MMA-100
C172	33 50V				CD15ED330J03	SX433	QW1-15	MMA-330
C173	330 50V				CD15FD331J03	SX333	QW1-39	MMA-331
C174	150 50V				CD15FD151J03	SX315	QW1-31	MMA-151
C175	.01 50V			DC-103	MGP01	TA110	QC2-141	TG-S10
C176	.01 50V			DC-103	MGP01	TA110	QC2-141	TG-S10
C177	5 N470 500V					*		10TCT-V50
C178	.01 50V			DC-103	MGP01	TA110	QC2-141	TG-S10
C181	.0022 50V				DPMS6022	EWF6222		6PS-D22
C182	47 50V			DTZ-47	NP047	CN0447		10TCC-Q47
C183	22 50V			DTZ-22	NP022	CN0422		10TCC-Q22
C184	47 50V			DTZ-47	NP047	CN0447		10TCC-Q47
C186	.047 50V				DPMS2S47	EWF1A147	QF1-171	1PB-S47
C187	680 50V				CD19FD681J03	SX368		MWC-681
C188	.22 50V				DPMS2P22	EWF1A022	QF1-253	1PB-P22
C189	.02 50V			DPMS2S2	PVC212		2PS-S20	
C190	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10	
C201	2 500V		DTZ-2R2	NP02P2	CN0522		10TCC-V22	
C202	.01 500V		DD-1032	GP10000	GP110		5GA-S10	
C203	.01 500V		DD-1032	GP10000	GP110		5GA-S10	
C204	.01 500V		DD-1032	GP10000	GP110		5GA-S10	
C205	56 500V			CD15ED560J03	SX456	QW1-21	MMA-560	
C206	56 500V			CD15ED560J03	SX456	QW1-21	MMA-560	
C207	.01 500V		DD-1032	GP10000	GP110		5GA-S10	
C208	2 500V		DTZ-2R2	NP02P2	CN0522		10TCC-V22	
C301	.01 500V		DD-1032	GP10000	GP110		5GA-S10	
C302	.01 500V		DD-1032	GP10000	GP110		5GA-S10	
C303	.01 500V		DD-1032	GP10000	GP110		5GA-S10	
C304	.01 500V		DD-1032	GP10000	GP110		5GA-S10	
C401	.01 500V		DD-1032	GP10000	GP110		5GA-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
C402	.01 500V	C070056	DD-1032	GP10000	GP110	5GA-S10
C403	.01 500V		DD-1032	GP10000	GP110	5GA-S10
C404	.01 500V		DD-1032	GP10000	GP110	5GA-S10
C405	100 50V		DD-101	GP100	GP310	10TS-T10
C406	.01 500V		DD-1032	GP10000	GP110	5GA-S10
C407	.0047 500V		DD-472	GP4700	GP247	5GA-D47
C408	.01 500V		DD-1032	GP10000	GP110	5GA-S10
C409	100 500V		DD-101	GP100	GP310	10TS-T10
C410	470 500V		DD-471	GP470	GP347	10TS-T47
C501	.01 500V		DD-1032	GP10000	GP110	5GA-S10
C502	560 500V		DD-561		GP356	10TS-T56
C503	.001 500V		DD-102G	GP1000	GP210	QC2-81 5GA-D10
C504	.01 50V		DD-1032	GP10000	GP110	5GA-S10
C511	.001 500V		DD-102G	GP1000	GP210	QC2-81 5GA-D10
C512	.01 500V		DD-1032	GP10000	GP110	5GA-S10
C601	.001 500V		DD-102G	GP1000	GP210	QC2-81 5GA-D10
C603	.01 500V		DD-1032	GP10000	GP110	5GA-S10
C604	.01 500V		DD-1032	GP10000	GP110	5GA-S10
C607	.1 600V			DPMS6P1	EW6P1	6PS-P10
C608	.001 500V		DD-102G	GP1000	GP210	QC2-81 5GA-D10
C701	22 NPO 500V			DTZ-22	NP022	CN0422 10TCC-Q22
C702	.01 500V			DD-1032	GP10000	GP110 5GA-S10
C703	68 500V			DD-680	GP68	GP468 10TS-Q68
C704	.01 500V			DD-1032	GP10000	GP110 5GA-S10
C705	3 500V			DTZ-3R3	NP03P3	CN0533 10TCC-V33
C706	5 N470 500V					* 10TCT-V50
C707	100 500V				CD15FD101J03	SX310 QW1-27
C708	.01 500V			DD-1032	GP10000	GP110 5GA-S10
C709	.01 500V			DD-1032	GP10000	GP110 5GA-S10
C710	.01 500V			DD-1032	GP10000	GP110 5GA-S10
C711	1 500V					CN0510 10TCC-V10
C712	.01 500V			DD-1032	GP10000	GP110 5GA-S10
C801	.01 500V			DD-1032	GP10000	GP110 5GA-S10
C802	.01 500V			DD-1032	GP10000	GP110 5GA-S10
C803	.01 500V			DD-1032	GP10000	GP110 5GA-S10
C804	.01 500V			DD-1032	GP10000	GP110 5GA-S10
C805	47 500V				CD15ED470J03	SX447 QW1-19
C901	68 500V				CD15ED680J03	SX468 QW1-23
C902	.01 500V			DD-1032	GP10000	GP110 5GA-S10
C903	.001 500V			DD-102G	GP1000	GP210 QC2-81
C904	.001 500V			DD-102G	GP1000	GP210 QC2-81
C906	.001 1KV			DD-102G	GP1000	GP210 QC2-81
C907	22 500V				CD15ED220J03	SX422 QW1-11
C908	330 500V				CD15FD331J03	SX333 QW1-39
C909	68 500V				CD15ED680J03	SX468 QW1-23
C910	.01 500V			DD-1032	GP10000	GP110 5GA-S10
C911	.001 500V			DD-102G	GP1000	GP210 QC2-81
C912	.01 500V		DD-1032	GP10000	GP110 5GA-S10	
VC901	50	C890058				
VC902	350	C890061				

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

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

ITEM No.	FUNCTION	RESISTANCE	REPLACEMENT DATA			
			MFR. PART No.	CENTRALAB PART No.	MALLORY PART No.	TRW PART No.
VR1	S Meter	30K	R890223	F1-50K (1), SRS006	UA34L (1),SK750	BU1 (1),CF12, SS5,DC1
VR2	Volume/Switch	500K	R890249	F1-500K (1), SRS012,KR1	UA55L (1),SK750, US26	BU1 (1),CF16, SS5,GC
VR3	Squelch/Switch	2M	R890252	F1-2Meg (1), SRS012,KR1	UA26L (1),SK750, US26	BU1 (1),CF19, SS5,GC
VR4	AMC	2M 500K	R890320 R890236	F1-500K (1), SRS006	UA55L (1),SK750	BU1 (1),CF16, SS5,DC1
VR6	RF Meter	10K	R890029	T-10K (2)	MTC14L1 (2)	X201R103B (2)
VR7A	Fine Tune	50K	R890142			

- (1) Enlarge mounting hole.
(2) Cut off one of the end terminals and bend to fit PC board.

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA		ITEM No.	RATING	REPLACEMENT DATA	
		WORKMAN PART No.	MFR. PART No.			WORKMAN PART No.	MFR. PART No.
R27	100 3W	20-003	R161017	R192	22K 3W	20-042	R162236
R28	1000 5W	5W-SQ1K	R990110	R501	5000 10W	10W-SQ5K	R990259
R149	22K 3W	20-042	R162236				

PARTS LIST AND DESCRIPTION (CONTINUED)

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

COILS (RF-IF)

ITEM No.	FUNCTION	REPLACEMENT DATA			REMARKS
		PART No.	OTHER IDENTIFICATION	MILLER PART No.	
L101	RF Choke	L085025	L0259		
L102	Rec RF (27MHz)	L215086	L0437		
L111	RF Choke	L083014	L0405		
L141	RF Choke	L083014	L0405		
L151	RF Choke (47uH)	L990026			
L171	RF Choke	L083030	L0539-1		
L181	VCO	L015011	L0593		
L201	IF (9.785MHz)	L215099	L0438		
L301	IF (455kHz)	L215109	L0439		
L401	IF (455kHz)	L215112	L0440		
L402	IF (455kHz)	L215125	L0447		
L701	RF Choke	L085025	L0259		
L702	XMT Mixer (27MHz)	L215138	L0442		
L703	XMT Buffer (27MHz)	L005021	L0586		
L801	XMT Driver (27MHz)	L005034	L0587		
L901	RF Choke	L085041	L0588		
L902	RF Choke	L025043	L0589		
L903	RF Choke	L005050	L0594		
L904	TVI Trap (54MHz)	L005076	L0596		
L905	RF Choke	L005063	L0595		
L906	RF Choke	L085038	L0435		
L907	RF Choke	L085012	L0597		

TRANSFORMER

ITEM No.	TURNS RATIO			REPLACEMENT DATA			NOTES
	PRI.	SEC. 1	SEC. 2	MFGR. PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	2	1		T995021			

TRANSFORMER (Power)

ITEM No.	RATING		REPLACEMENT DATA			NOTES
	PRI.	SEC. 1	MFGR. PART No.	THORDARSON PART No.	TRIAD PART No.	
T2	120V AC @ 780mA AC XMT	105V AC @ 150mA DC XMT	T995034			
	SEC. 2	SEC. 3				
	17V AC CT @ 3.3A DC Tapped @ 1.90V AC @ 2.2A AC					

TRANSFORMER (Audio Output)

ITEM No.	IMPEDANCE		REPLACEMENT DATA			NOTES
	PRI.	SEC.	MFGR. PART No.	THORDARSON PART No.	TRIAD PART No.	
T3	5000	8	T995018			

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		MFGR. PART No.	QUAM PART No.	
SP	4" PM 8 Ohms	A105044 10-618 (1)	4A1Z8	(1) Number on unit.

GEMTRONICS MODEL GTX-5000

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.	
		DEVICE	HOLDER	DEVICE	HOLDER	DEVICE	WORKMAN PART No.
F1	2 Amp Pigtail			GJV2		318002	
F2	8 Amp		B100049	AGC8	HDJ	311008	150145
							FG2-2 & 33-125

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	A015011	18-032	18-034	18-010	18-092	1	3	2	4	NC	3

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
CF1	Ceramic Filter		455kHz
J1	Jack	J190017	Antenna
J2	Jack	J290043	Power
J3	Jack	J090010	External Speaker/PA
J5	Jack	J090023	Microphone
K1	Relay	K005021	XMT/Rec
M1	Meter	M005018	S/R
M2	LED	D310062	Channel Display TLR321
PL1	Lamp		Meter (11,90V AC @ 70mA)
PL2	Lamp	V110013	TX (53,7V)
PL3	Lamp	V110026	RX (62V)
S1	Switch	S005034	Channel Selector
S2	Switch	S465438	CB/PA
S3	Switch		Power (Part of Volume Control)
S4	Switch		Standby (Part of Squelch Control)
S5	Switch	S465438	Meter
X1	Crystal	X002406	10.240MHz
X2	Crystal	X002503	15.250MHz
X3	Crystal	X007854	9.785MHz

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

ITEM	PART No.	ITEM	PART No.
Knob, Channel Selector	F205054	Front Panel	F005050
Knob, Control	F305051	Cabinet, Top	G005076
AC Power Cord	B100036	Cabinet, Bottom	G005089

WIRING DATA

General-use Hook-up Wire (available in 5 colors)	BELDEN No. 8523	Coiled Microphone Cable	
Shielded Hook-up Wire (spiral wrapped)	BELDEN No. 8421	3-conductor (1 shielded)	23AWG BELDEN No. 9471 (5')
(braided)	BELDEN No. 8401		BELDEN No. 8497 (6')
Speaker Cable (available in 4 colors)	BELDEN No. 8782		BELDEN No. 9472 (7-1/2')
Bonding Strap	BELDEN No. 8672		28AWG BELDEN No. 9466 (6')
AC Power Cord	BELDEN No. 17106 (6')		31AWG BELDEN No. 9468 (10')
	BELDEN No. 17109 (9')	4-conductor (unshielded)	23AWG BELDEN No. 8415 (6')
		5-conductor (1 shielded)	28AWG BELDEN No. 9467 (6')
			BELDEN No. 9465 (7-1/2')