

PHOTOFACT[®] with

CIRCUITRACE[®]

For Supplier Address See PHOTOFACT Index

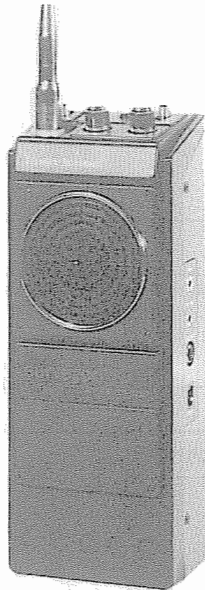
NOTE

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.



SURVEYOR MODEL 1250

MODEL 1250

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 12-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
L1, L2, L3, L7, L8, T1, T2, T3 8728
L4 9440

SYNTHESIZER ALIGNMENT

TEST EQUIPMENT	TRANSCIVER	ADJUST	REMARKS
Input of frequency counter and RF VTVM to L4 secondary.	Ch. 1	L4	Adjust for 26.630MHz at maximum output.

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 TR2 base. 455kHz, 1000Hz @ 30% modulation.	Ch. 1	T3,T2,T1	Adjust for maximum output.
Output of signal generator thru .01uF to antenna jack. 27.085MHz, 1000Hz @ 30% modulation.	Ch. 1	L3,L2	Adjust for maximum output. Repeat above steps, if necessary.

TRANSMITTER ALIGNMENT

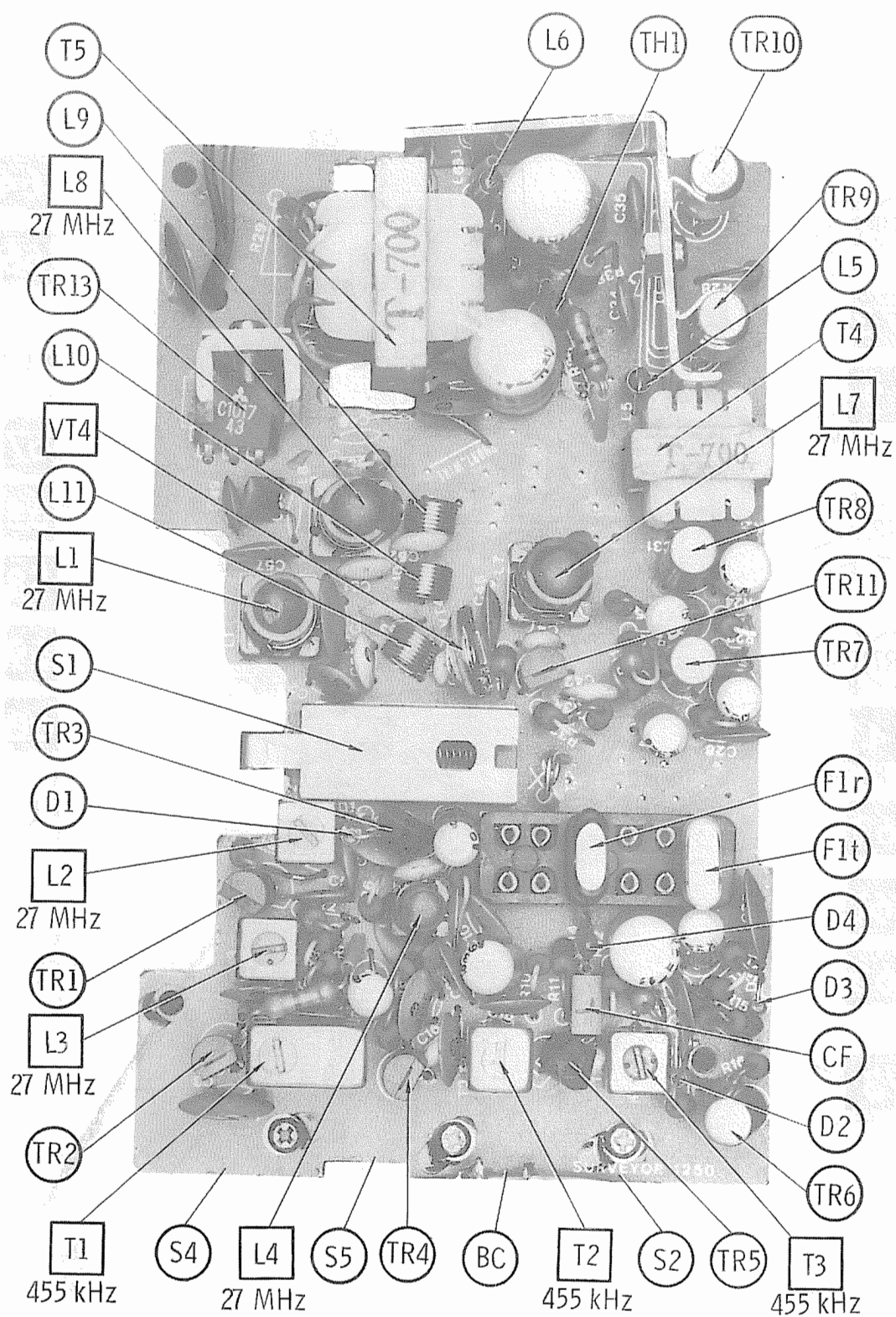
Connect an RF wattmeter and 50-ohm, 25-watt dummy load to antenna connector.
NOTE: Be sure to check transmit frequency and power on all active channels after alignment of transmitter.

TEST EQUIPMENT	TRANSCIVER	ADJUST	REMARKS
Input of frequency counter to antenna jack.	Ch. 1	L7,L8,L1	Adjust for maximum output at 27.085MHz.
	Ch. 1 Battery saver in HI position.	L1,L8	Adjust for 2.5 watts maximum output.

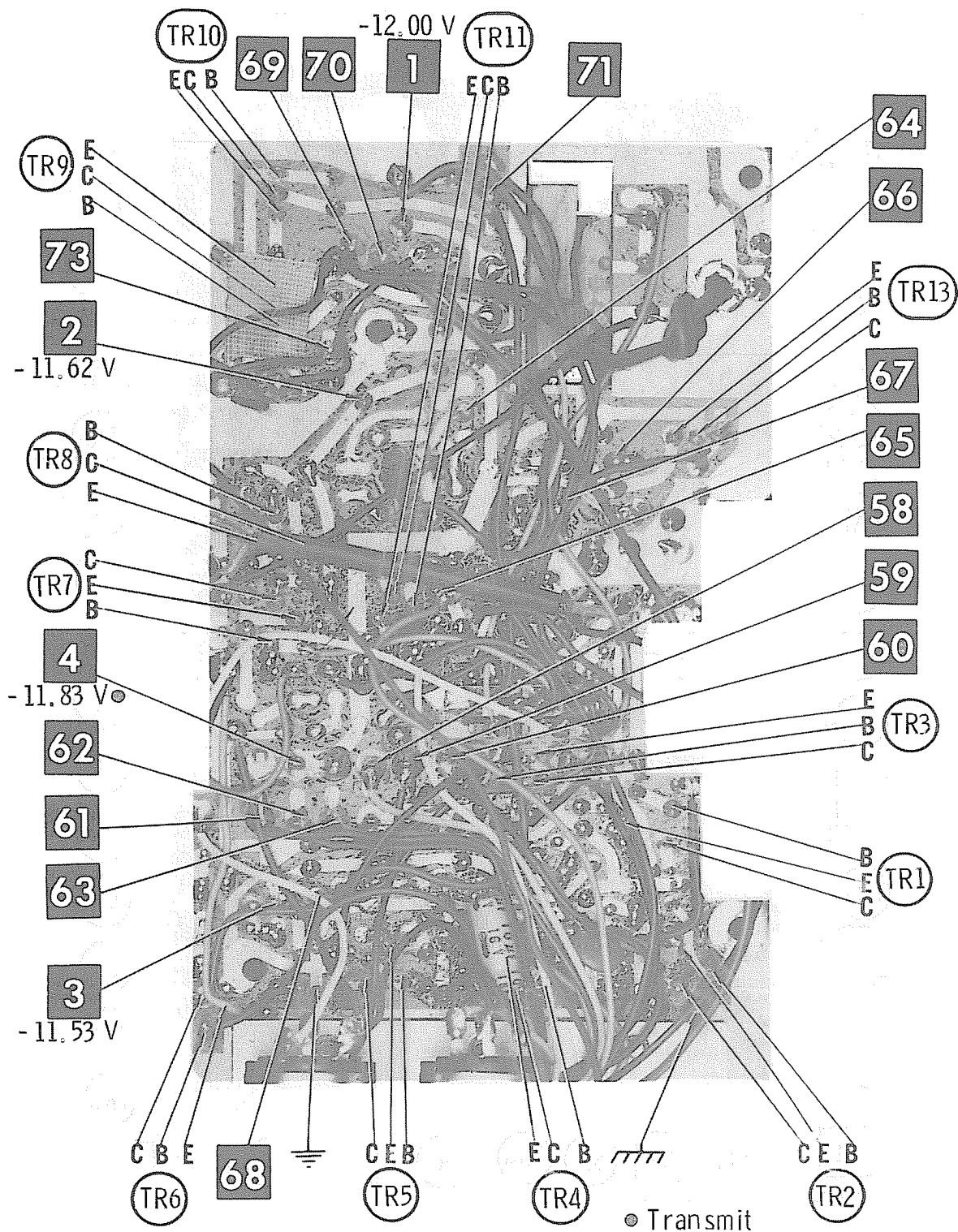
TRANSMITTER ADJUSTMENTS

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

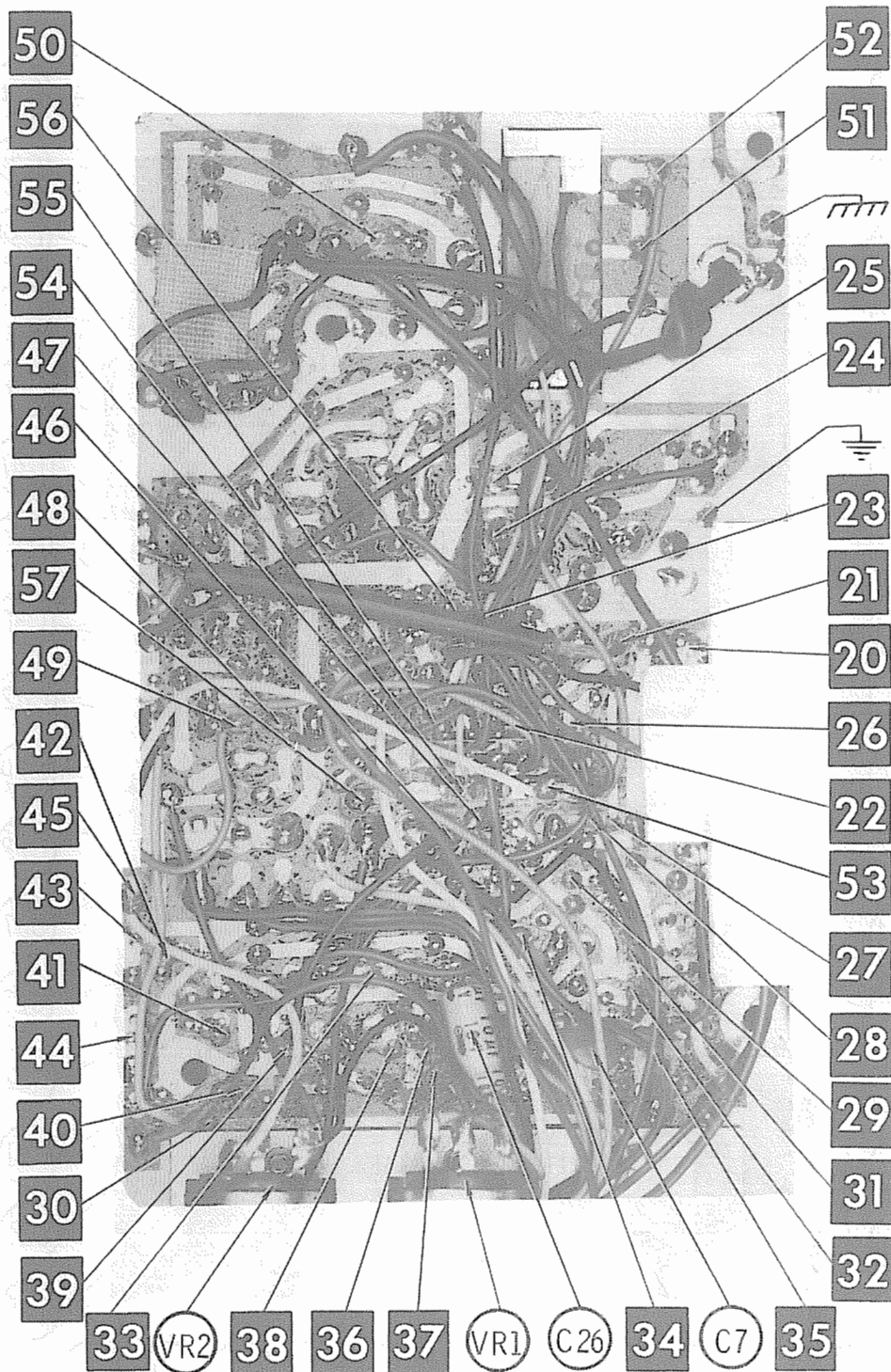
TEST EQUIPMENT	TRANSCIVER	ADJUST	REMARKS
	Ch. 1. Battery saver in LOW position.	VT4	Adjust for 1 watt output.



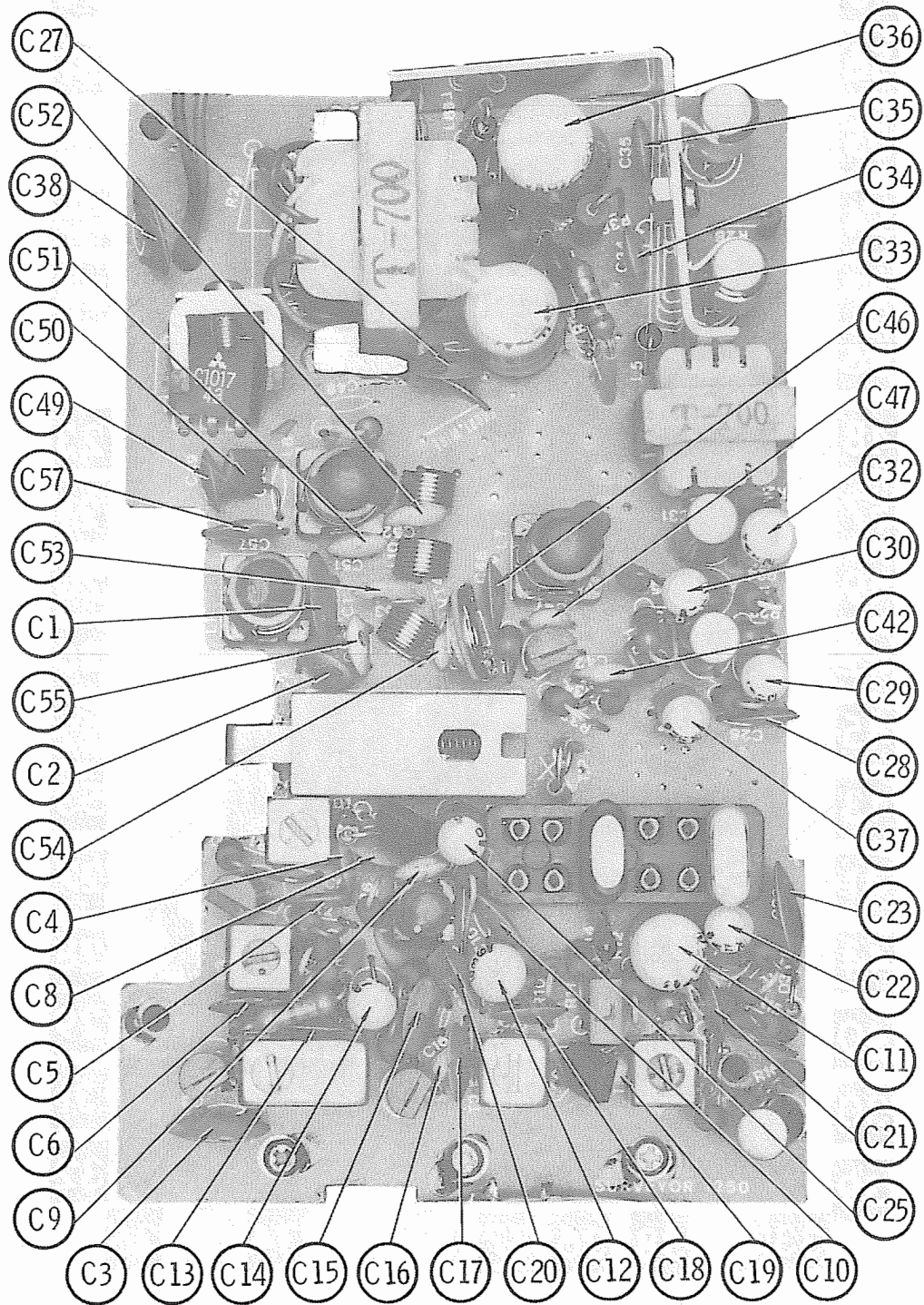
MAIN BOARD



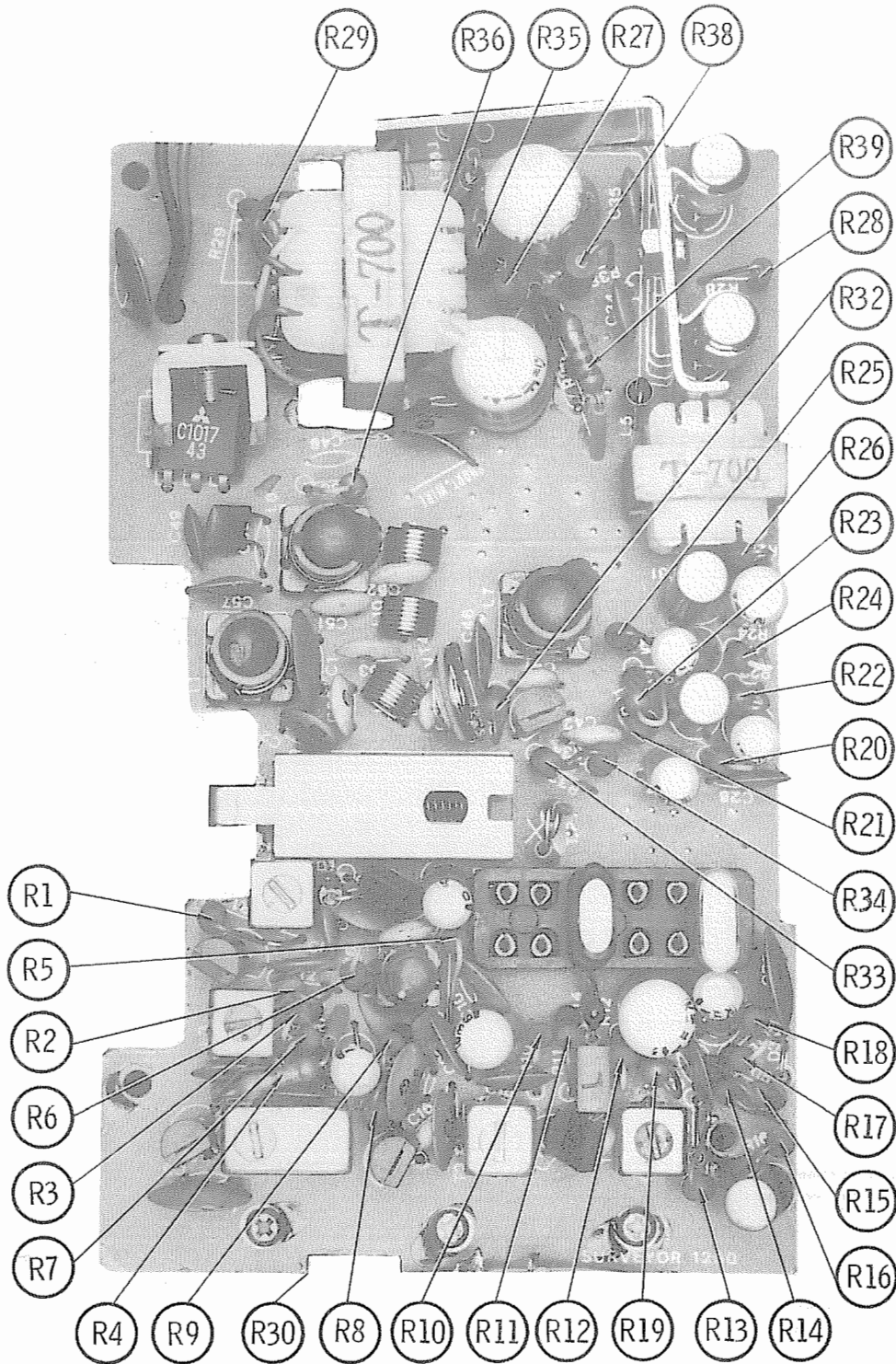
MAIN BOARD



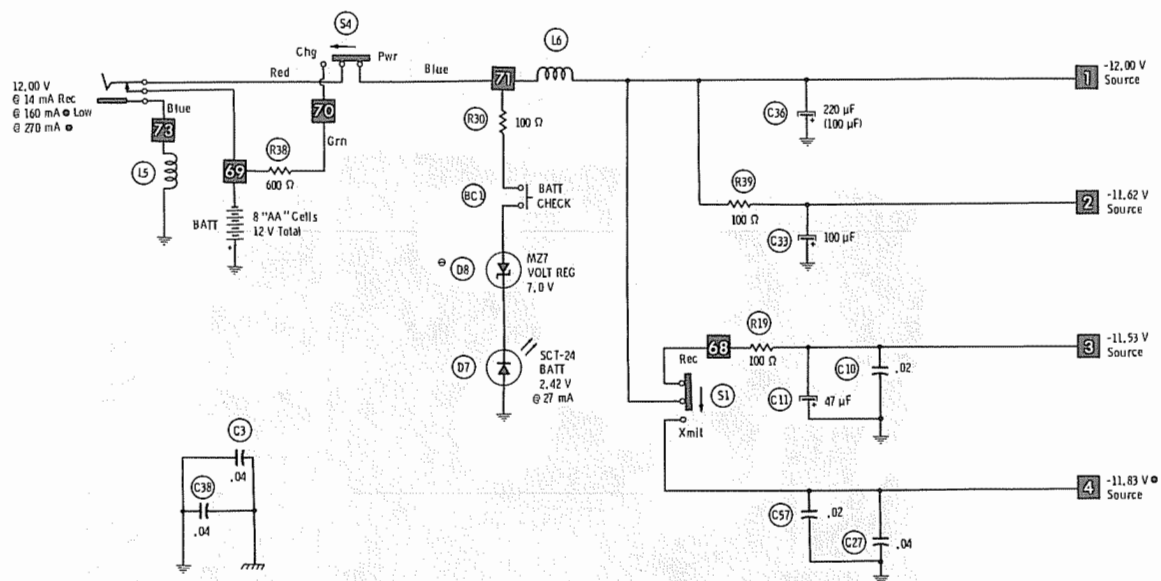
MAIN BOARD



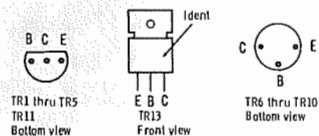
MAIN BOARD



MAIN BOARD



Terminal Guides



—X— Circuitry not used in some versions

--- Circuitry used in some versions

⊙ See ports list

✱ Nominal value

⊕ Ground

⏏ Chassis

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.

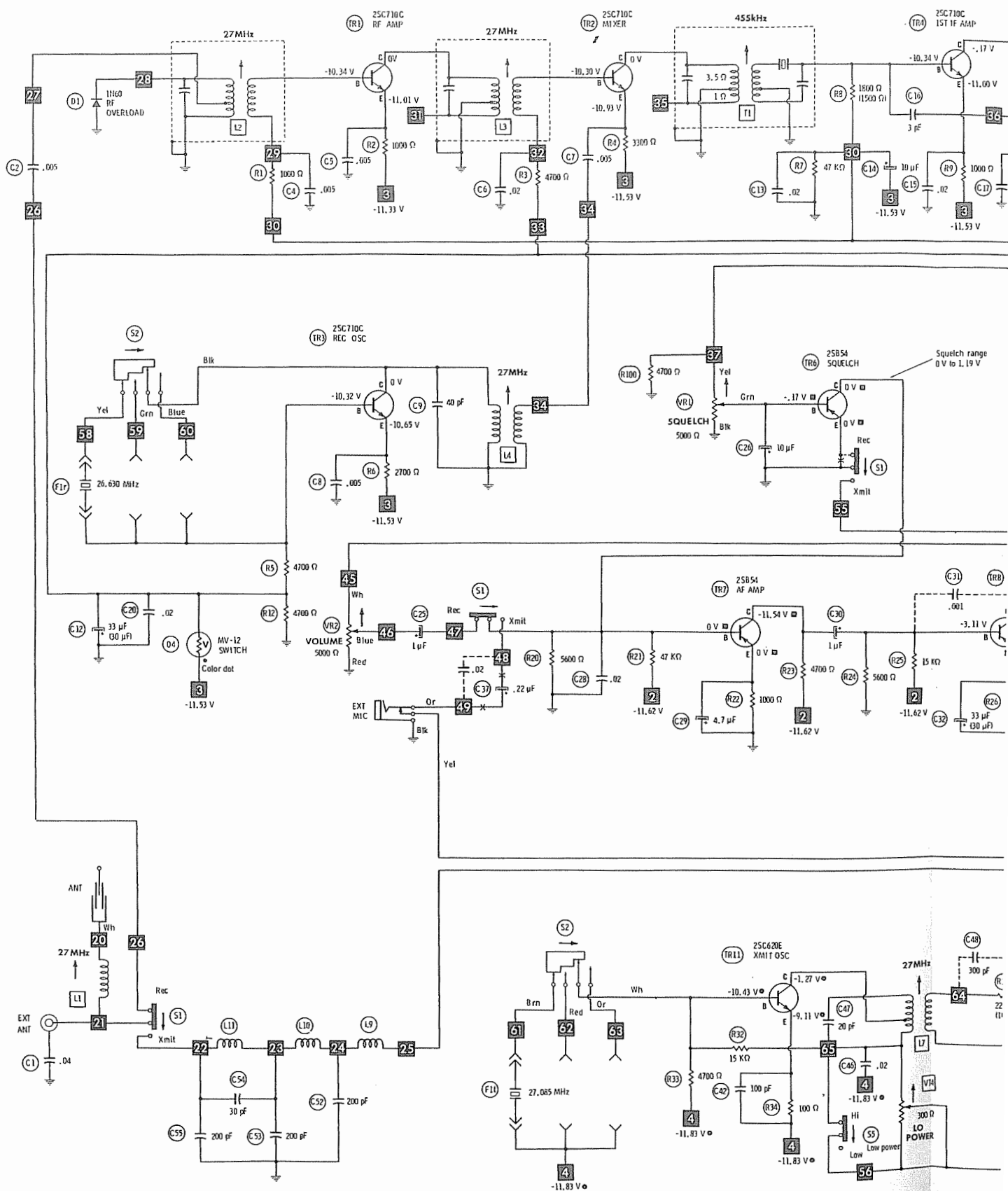
Resistors are 1/2W or less, 5% unless noted.

Value in () used in some versions.

A PHOTOFAC STANDARD NOTATION SCHEMATIC

WITH **CIRCUITACE**

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PARTS LIST AND DESCRIPTION

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

SEMICONDUCTORS (Select replacement transistor for best results)

ITEM No.	TYPE No.	MFGR. 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	1N60	(1)	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D2	1N60		1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D3	1S1588		GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D4	MV-12				PTC301					
D7	SCT-24									
D8	NZ7		GEZD-6.8	Z1206	ZM6.8B	HEP20409	RE 110		RT-230	ECG5071
	W0-61		GEZD-5.6	Z1204	ZM6B	HEP20407	RE 107	SK3057	RT-236	ECG136
TR1	2SC710C		GE-211	(IR)2SC710	PTC115	HEPS0016	RE 13	SK3018	RT-308	ECG123A
TR2	2SC710C		GE-211	(IR)2SC710	PTC115	HEPS0016	RE 13	SK3018	RT-308	ECG123A
TR3	2SC710C		GE-211	(IR)2SC710	PTC115	HEPS0016	RE 13	SK3018	RT-308	ECG123A
TR4	2SC710C	(10)	GE-211	(IR)2SC710	PTC115	HEPS0016	RE 13	SK3018	RT-308	ECG123A
TR5	2SC710C		GE-211	(IR)2SC710	PTC115	HEPS0016	RE 13	SK3018	RT-308	ECG123A
TR6	2SB54		GE-52	TR-85	PTC109	HEPG6011	RE 25	SK3004	RT-123	ECG102A
TR7	2SB54		GE-52	TR-85	PTC109	HEPG6011	RE 25	SK3004	RT-123	ECG102A
TR8	2SB54		GE-52	TR-85	PTC109	HEPG6011	RE 25	SK3004	RT-123	ECG102A
TR9	2SB415		GE-53	(IR)2SB405	PTC156	HEPG6011	RE 25	SK3004	RT-123	ECG158
TR10	2SB415		GE-53	(IR)2SB405	PTC156	HEPG6011	RE 25	SK3004	RT-123	ECG158
TR11	2SC620E		GE-88	(IR)2SC644	PTC136	HEPS0014	RE 13	RE 13	RT-107A	ECG123A
TR13	2SC1017		GE-236		PTC180		RE 212		RT-143	ECG299

(1) Used in some versions.

(10) Rating, 4.0 Watts @ 1.0 Amp.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA			
		MFGR. PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.
C11	47 16V	(1)	PC50-16	VTT47D16	EV-1226
C12	33 16V		PC30-25	VTT33025	EV-1325
C14	10 16V		PC10-25	VTT10A25	EV-1222
C22	1 50V		PC1-50	VTT1863	EV-1615
C25	1 50V		PC1-50	VTT1863	EV-1615
C26	10 16V		PC10-25	VTT10A25	EV-1222
C29	4.7 25V		PC5-50	VTT4R7A50	EV-1319
C30	1 50V		PC1-50	VTT1863	EV-1615
C32	33 16V		PC30-25	VTT33025	EV-1325
C33	100 16V		PC100-16	VTT100F16	EV-1230
C36	220 16V		PC250-25	VTT220G16	EV-1240
	100		PC100-16	VTT100F16	EV-1230
C37	.22 50V			TDC224M050EL	SD50-R229

(1) Used in some versions.

CAPACITORS

ITEM No.	RATING	MFG. PART No.	REPLACEMENT DATA					
			CENTRALAB PART No.	CORNELL- DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.		
C1	.04		DC-502	MGP005	TA250	TG-D50		
C2	.005							
C3	.04					5GA-039		
C4	.004		DC-502	HGP005	TA250	TG-D50		
C5	.005							
C6	.02							
C7	.005		DC-502	MGP005	TA250	TG-D50		
C8	.005		DC-502	MGP005	TA250	TG-D50		
C9	.40		UK50-223	NP03P3	MAG5012	10TCC-V33		
C10	.02							
C13	.02							
C15	.02		UK50-223	GP1000	MAG5012	5GA-D10		
C16	.3		DTZ-3R3		CN0533			
C17	.02		UK50-223		MAG5012			
C18	.02		UK50-223	GP1000	MAG5012	5GA-D10		
C19	.5		UK50-223		MAG5012			
C20	.02							
C21	.02							
C23	.04		UK50-223	GP1000	MAG5012	5GA-D10		
C28	.02							
C31	.001							
C34	.01		DD-102G	GP1000	GP210	5GA-D10		
C35	.01		UK50-103		MAG5011			
C38	.04		UK50-103		MAG5011			

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.
C42	100		DD-101	GP100	GP310	10TS-T10
C46	.02		UK50-223		MAG5012	
C47	20		OTZ-20	HP020	CN0420	10TCC-Q20
C48	300		DD-301	GP300	GP330	10TS-T30
C49	.02				MAG5012	
C50	30			CD15ED300J03	SX430	MMA-300
C51	125					
C52	200		DD-201	GP200	GP320	10TS-T20
C53	200		DD-201	GP200	GP320	10TS-T20
C54	30			CD15ED300J03	SX430	MMA-300
C55	200					
C57	.02		UK50-223		MAG5012	

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.
VR1	Squelch	5000					
VR2	Volume	5000					
VT4	Lo Power	300					

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.
TH1	210 Cold NTC						

COILS (RF-IF)

ITEM No.	FUNCTION	REPLACEMENT DATA			REMARKS
		PART No.	OTHER IDENTIFICATION	MILLER PART No.	
L1	Ant Load (27MHz)				
L2	Rec Ant (27MHz)		DEF		
L3	Rec RF (27MHz)		DEF-1102		
L4	Rec Osc (27MHz)				
L5	RF Choke				
L6	RF Choke				
L7	Xmit Osc (27MHz)				
L8	Xmit Final (27MHz)				
L9	Xmit Matching				
L10	Pi Filter				
L11	Pi Filter				
T1	IF (455kHz)		4A-25F		
T2	IF (455kHz)		2E-48012		
T3	IF (455kHz)		2F-48012		

TRANSFORMER (Driver)

ITEM No.	TURNS RATIO			REPLACEMENT DATA			NOTES
	PRI.	SEC. 1	SEC. 2	MFR. PART No.	THORDARSON PART No.	TRIAD PART No.	
T4	1	1		T-700 (1)			(1) Number on Unit.

PARTS LIST AND DESCRIPTION (CONTINUED)

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

TRANSFORMER (Audio Output)

ITEM No.	IMPEDANCE		REPLACEMENT DATA			NOTES
	PRI.	SEC.	MFR. PART No.	THORDARSON PART No.	TRIAD PART No.	
T5	288	8	T-700 (1)			(1) Number on Unit.

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		MFR. PART No.	QUAM PART No.	
SP	2 1/4" PM 8 Ohms		22A05ZB	

CRYSTALS

CHANNEL	CTS KNIGHTS PART No.		CHANNEL	CTS KNIGHTS PART No.		CHANNEL	CTS KNIGHTS PART No.	
	RECEIVE	TRANSMIT		RECEIVE	TRANSMIT		RECEIVE	TRANSMIT
1	B20M26510	A20M26965	9	B20M26610	A20M27065	17	B20M26710	A20M27165
2	B20M26520	A20M26975	10	B20M26620	A20M27075	18	B20M26720	A20M27175
3	B20M26530	A20M26985	11 *	B20M26630	A20M27085	19	B20M26730	A20M27185
4	B20M26550	A20M27005	12	B20M26650	A20M27105	20	B20M26750	A20M27205
5	B20M26560	A20M27015	13	B20M26660	A20M27115	21	B20M26760	A20M27215
6	B20M26570	A20M27025	14	B20M26670	A20M27125	22	B20M27770	A20M27225
7	B20M26580	A20M27035	15	B20M26680	A20M27135	23	B20M27800	A20M27255
8	B20M26600	A20M27055	16	B20M26700	A20M27155			

* In set.

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
CF1	Filter		455kHz
BC1	Switch		Battery Check
S1	Switch		Rec/Xmit
S2	Switch		Channel Selector
S4	Switch		Charger (On-Off)
S5	Switch		Hi/Low (Battery Saver)

WIRING DATA

General-use Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in 12 Colors
Shielded Antenna Lead	8524 (Stranded) Available in 12 Colors
	Use BELDEN No. 8240 (Solid) Miniature (RG-58/U)
	8259 (Stranded) Miniature (RG-58A/U)
Shielded Cable	Use BELDEN No. 8499 Single-conductor Shielded (Neoprene)

SURVEYOR MODEL 1250

INDEX

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"CITIZENS BAND MANUALS" AND "PHOTOFACT CB RADIO SERIES"

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		& up)	81	Comet 23	48	IC-5000	25	CB-9	8
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A-2561 (21B5561)	35	CAPITOL		CWT-30	29	T-606	41	HALLMARK	
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A-2567 (17B6435X)	22	ND-309	3	CWT-50	30	T-707	43	1250B	10
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