

PHOTOFACT[®] with CIRCUITRACE[®]

For Supplier Address See PHOTOFACT Index

NOTE

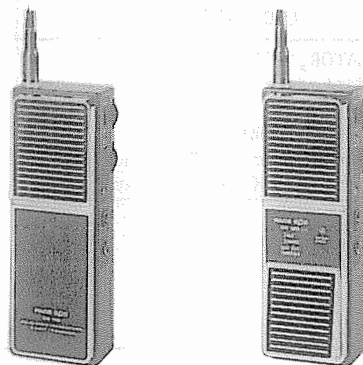
Repair or adjustment of transmitter circuits must be under supervision of a person with first-or second-class radiotelephone license.

(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.



MODELS CB-115 (2W)
CB-125 (3W)

ALIGNMENT INSTRUCTIONS

Suggested Alignment Tools:

GC ELECTRONICS

L1, L7, L9 #9440

ALL other tunable coils and transformers #8290, 5000

RECEIVER

Connect an AC VTVM or AF Wattmeter across speaker voice coil.

Adjustments made with 12-volt DC input.

Adjust volume control to obtain suitable reading.

SIGNAL GENERATOR	GEN FREQ	CHANNEL	ADJUST	REMARKS
High side thru .01uF to base of TR2, low side to ground.	455kHz, 1000Hz @ 30% modulation.	Any	IFTA IFTB IFTC	Set generator to maintain 0.5V output across voice coil. Adjust for maximum.
High side thru .01uF to external Antenna jack, low side to ground	27.085MHz, 1000Hz 30% modulation, output 2uV.	11	L2, L3	Adjust for maximum.

RECEIVER ADJUSTMENTS

Connect an AC VTVM or AF Wattmeter across speaker voice coil.

These adjustments made with 12-volt DC input.

Adjust volume control to obtain a suitable reading.

SIGNAL GENERATOR	GEN FREQ	CHANNEL	ADJUST	REMARKS
RF GAIN High side thru .01uF to external antenna jack, low side to ground.	27.085MHz, 1000Hz, @ 30% modulation, output 1uV.	11	VR3	Adjust for best signal/noise ratio.

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

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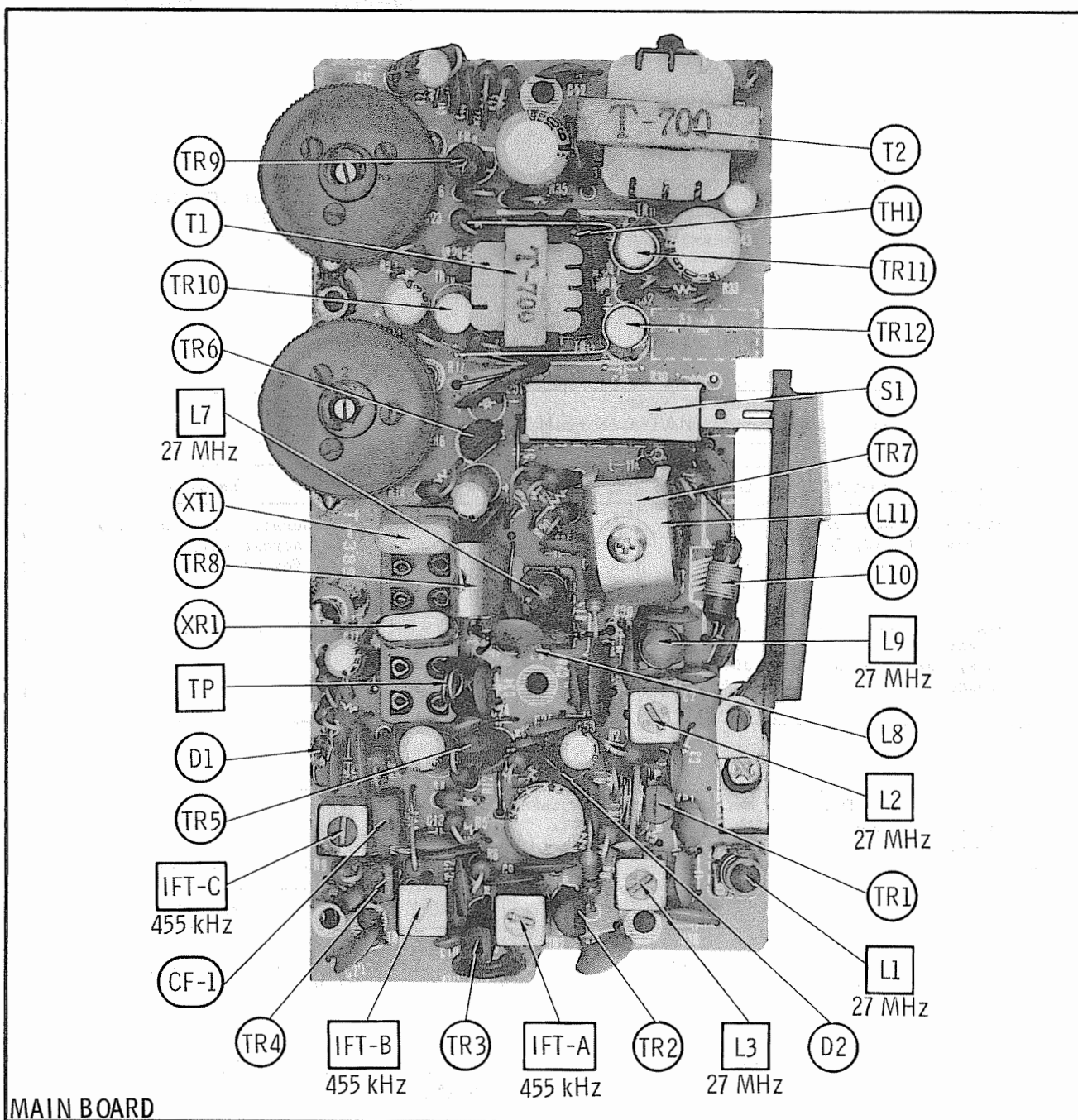
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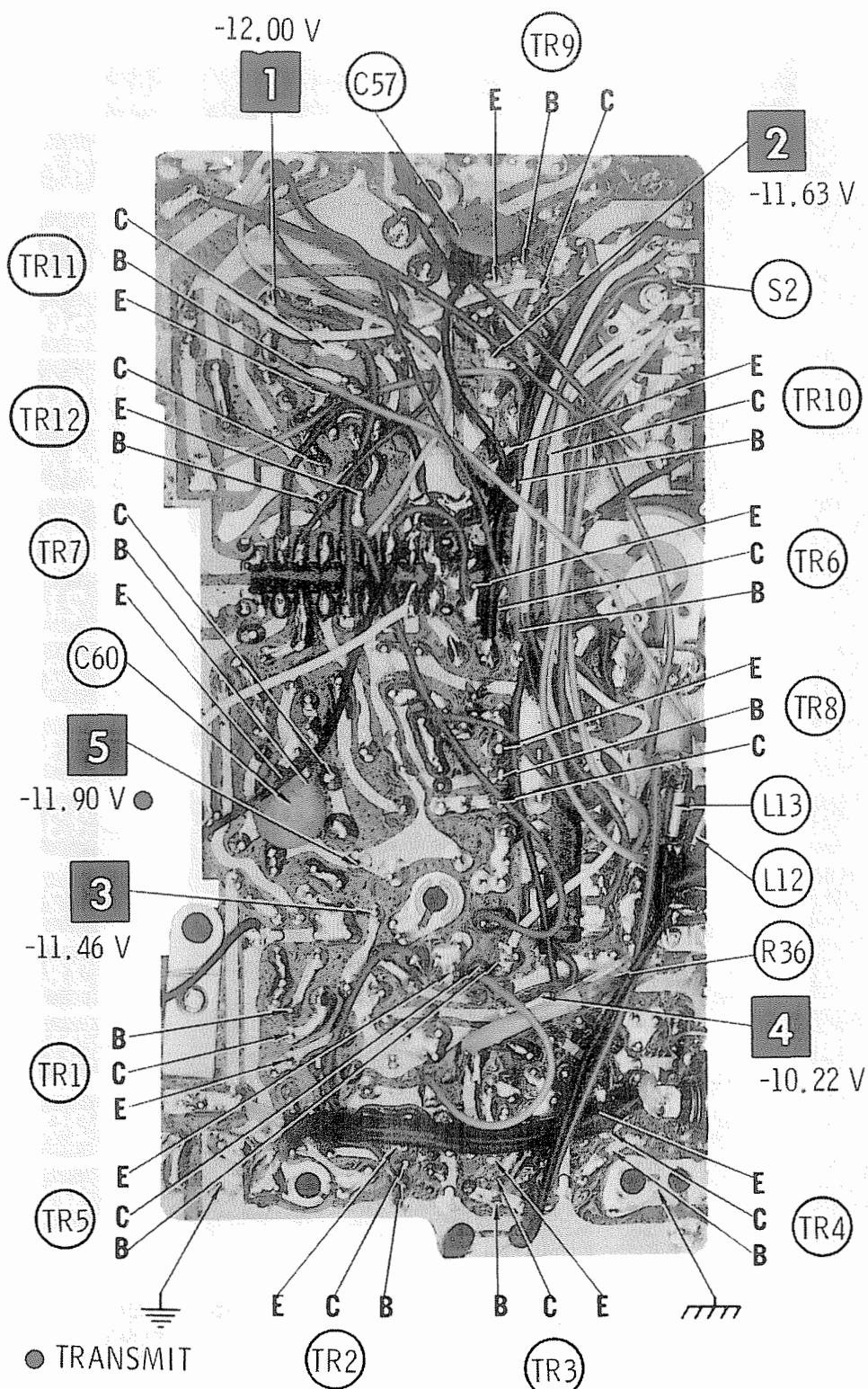
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TRANSMITTER

Connect an RF Wattmeter or 50-ohm, 25-watt dummy load to antenna connector.
Adjustments made with 12-volt DC input.

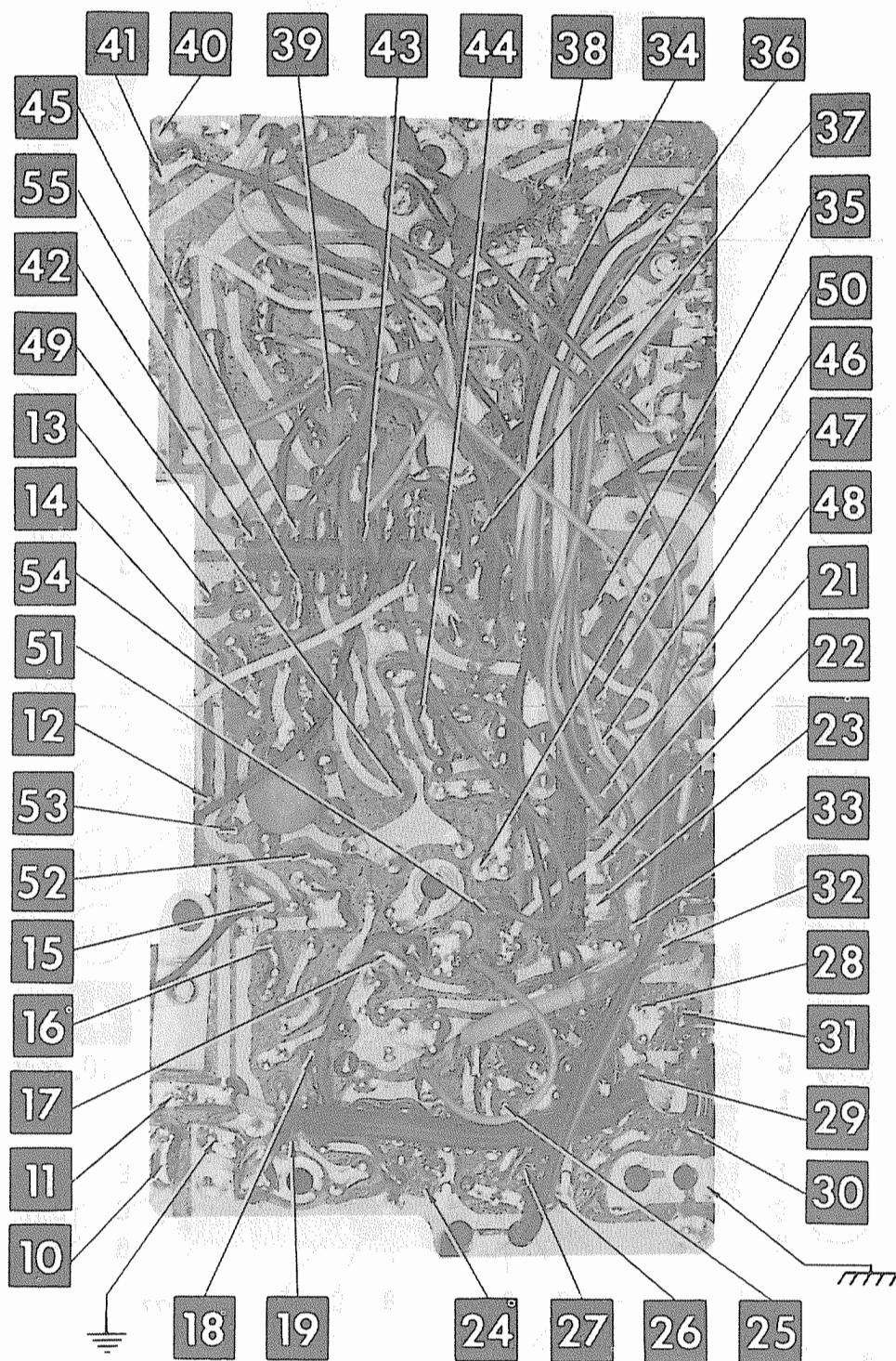
INDICATOR	ADJUST	REMARKS
OSCILLATOR, FINAL RF Wattmeter	L7, L9, L1	Channel selector to CH. 11 Key transmitter. Adjust for maximum.
FINAL INPUT POWER Remove jumper at TP3 and connect 0-500 DC milliammeter.	L7	Adjust for 3 watts maximum. (CB-125) Adjust for 2 watts maximum. (CB-115)



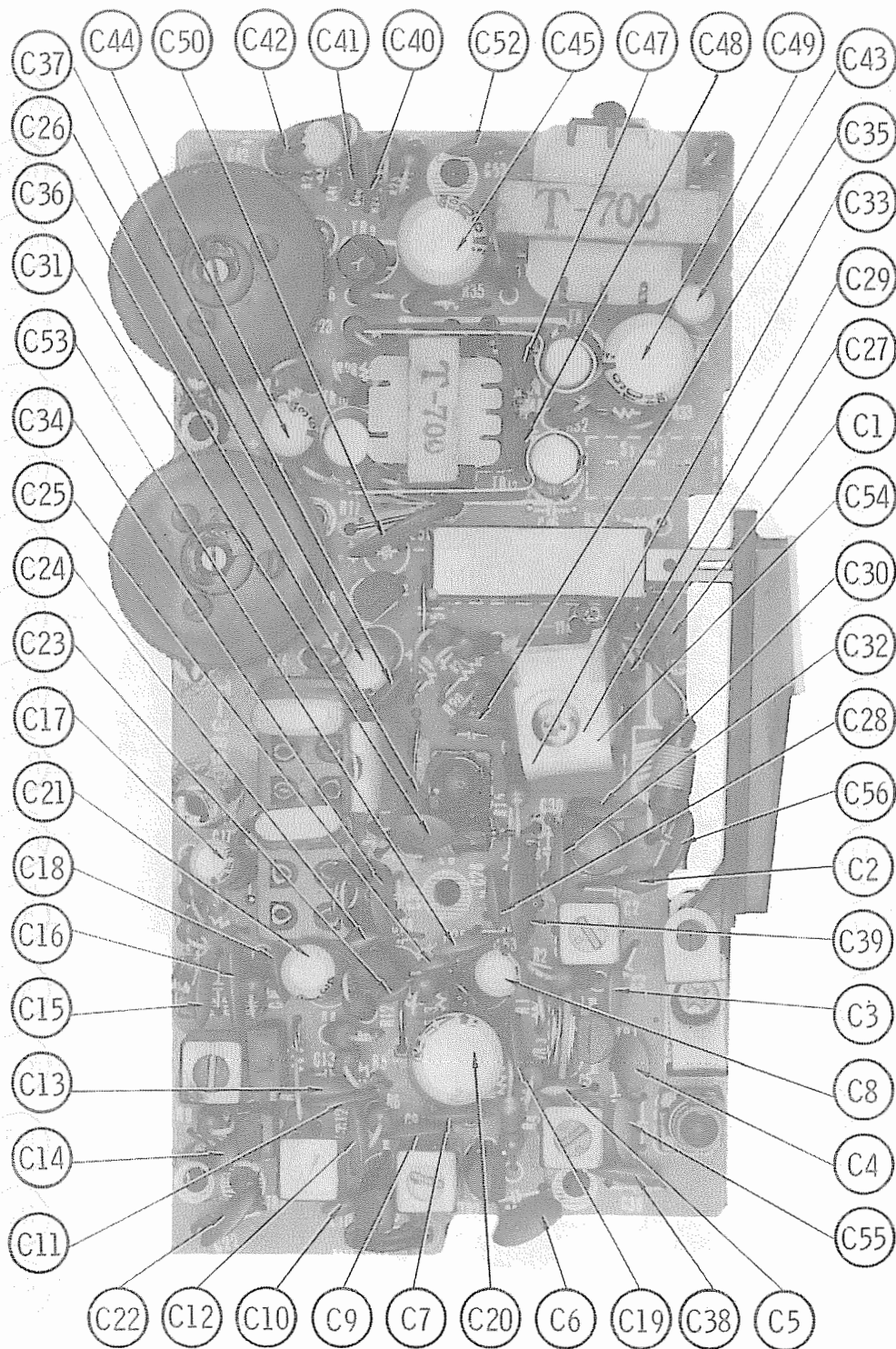


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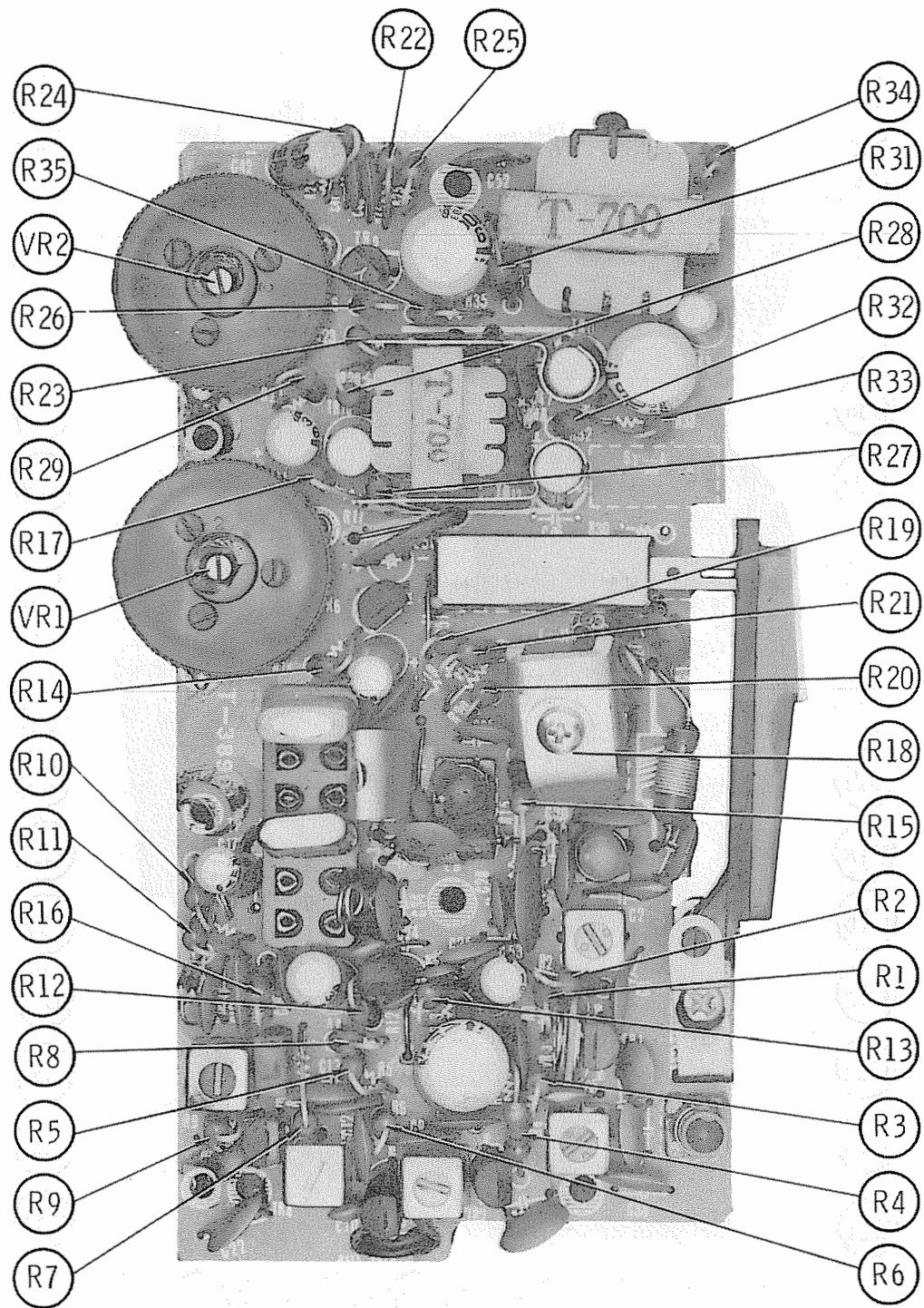
MAIN BOARD



MAIN BOARD



MAIN BOARD



MAIN BOARD

PARTS LIST AND DESCRIPTION

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

WIRING DATA

General-use Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in 12 Colors 8524 (Stranded) Available in 12 Colors
Shielded Antenna Lead	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)

SEMICONDUCTORS (Select replacement transistor for best results)

ITEM No.	TYPE No.	MFR. PART No.	REPLACEMENT DATA							
			GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	MALLORY PART No.	MOTOROLA PART No.	RAYTHEON PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.
D1	1N60		1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D2	KB-265, MV-12									
D4	W0-61 (6.1 Volt Zener)	(11)	GEZD-6.2	Z1204	PTC503	HEPZ0408	RE 108	SK3058	RT-237	ECG5070
D5	SCT-24	(11)								
TR1	2SC710D		GE-20	TR-24	PTC121	HEPS0016	RE 13	SK3018	RT-105	ECG123A
TR2	2SC710C		GE-20	TR-24	PTC121	HEPS0016	RE 13	SK3018	RT-105	ECG123A
TR3	2SC710B		GE-20	TR-24	PTC121	HEPS0016	RE 13	SK3018	RT-105	ECG123A
TR4	2SC710B		GE-20	TR-24	PTC121	HEPS0016	RE 13	SK3018	RT-105	ECG123A
TR5	2SC710D		GE-20	TR-24	PTC121	HEPS0016	RE 13	SK3018	RT-105	ECG123A
TR6	2SA628		GE-22	TR-30	PTC103	HEPS0013	RE 26	SK3118	RT-115	ECG159
TR7	2SC1018	(10)	GE-215							ECG299
	2SC1017	(1)(10)	GE-215							ECG299
TR8	2SC1017	(10)	GE-215							ECG299
	2SC620	(12)	GE-20	TR-24	PTC125	HEPS0014	RE 13	SK3020	RT-172	ECG123A
TR9	2SA495Y		GE-21	TR-24	PTC103	HEPS0013	RE 26	SK3118	RT-106	ECG159
TR10	2SB54		GE-52	TR-85	PTC109	HEPG0007	RE 4	SK3004	RT-123	ECG102A
TR11	2SB415		GE-53	(1R) 2SB405	PTC156	HEPG6011	RE 25	SK3004	RT-123	ECG158
	2SB405	(1)	GE-53	(1R) 2SB405	PTC156	HEPG6011	RE 25	SK3004	RT-123	ECG158
	2SA562-0	(1)	GE-21	TR-54	PTC103	HEPS0012	RE 26	SK3114	RT-115	ECG290
TR12	2SB415		GE-53	(1R) 2SB405	PTC156	HEPG6011	RE 25	SK3004	RT-123	ECG158
	2SB405	(1)	GE-53	(1R) 2SB405	PTC156	HEPG6011	RE 25	SK3004	RT-123	ECG158
	2SA562-0	(1)	GE-21	TR-54	PTC103	HEPS0012	RE 26	SK3114	RT-115	ECG290

(1) Used in some versions.

(10) Rating 4.0 watts @ 1.0 amps.

(11) Used in Model CB-125 only.

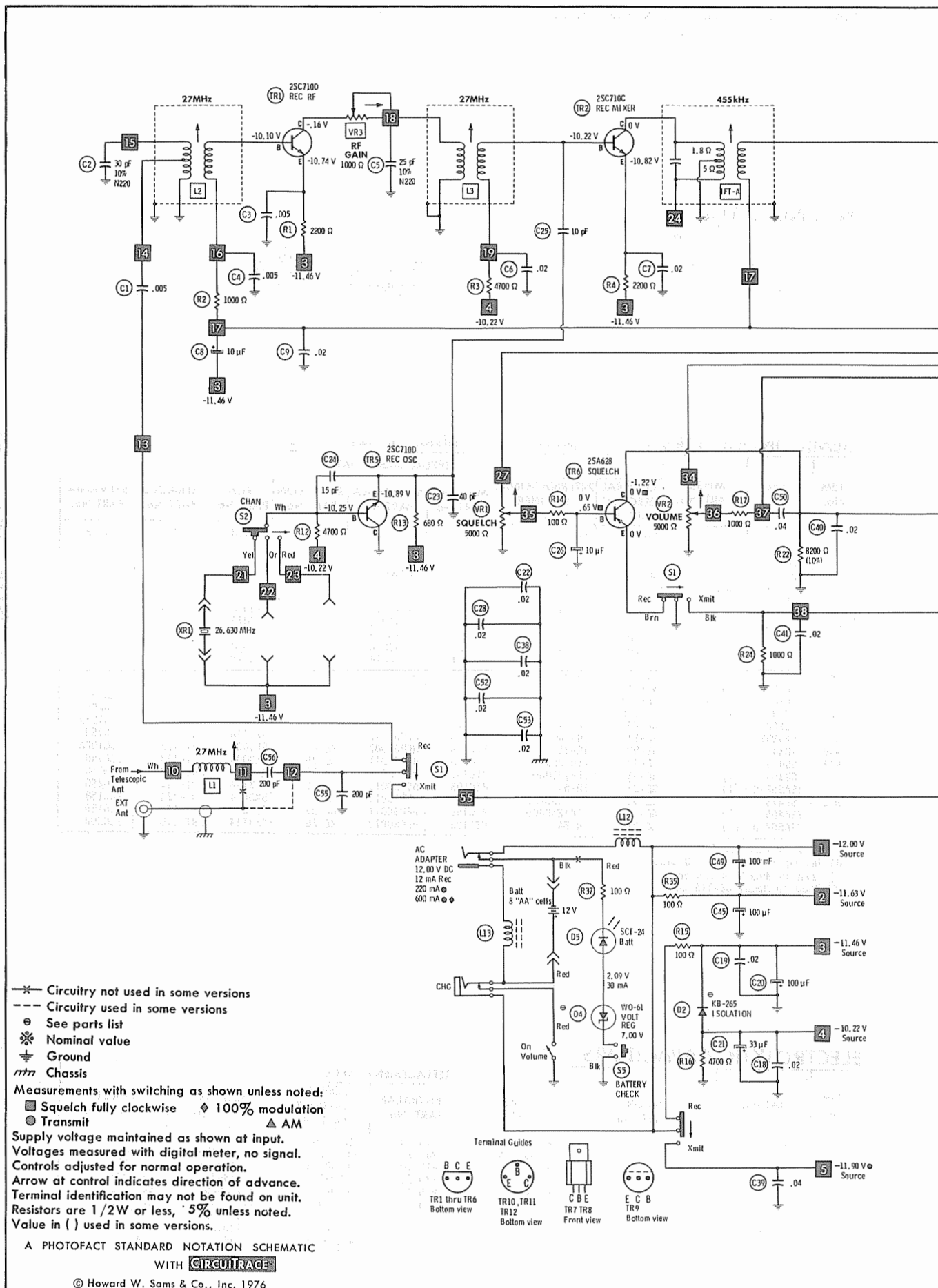
(12) Used in Model CB-115 only.

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ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA					
		MFR. PART No.	ARCO PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.
C8	10 16V		RME-B-G-010	EP15-10	PC10-25	VTT10A25	EV-1222
C17	4.7 25V		RME-B-J-003	EP50-5	PC5-50	VTT3R3A50	EV-1618
C20	100 16V		RME-E-E-100	EP15-100	PC100-16	VTT100F16	EV-1230
C21	33 16V		ME-4-G-035	EP30-25	PC30-25	VTT33D25	EV-1325
C26	10 16V		RME-B-G-010	EP15-10	PC10-25	VTT10A25	EV-1222
C42	4.7 25V		RME-B-J-003	EP50-5	PC5-50	VTT3R3A50	EV-1618
C43	.22 50V					TDC224M050EL	SD50-R229
C44	33 16V		ME-4-G-035	EP30-25	PC30-25	VTT33D25	EV-1325
C45	100 16V		CTA-1450		WBR50-450	TC79B	TVA-1713
C49	100 16V		CTA-1450		WBR50-450	TC79B	TVA-1713

(CONTINUED ON PAGE 36)



PARTS LIST AND DESCRIPTION (CONTINUED)

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

CAPACITORS

ITEM No.	RATING	MFG. PART No.	REPLACEMENT DATA				
			ARCO PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	.005		CCD-502				10TS-D50
C2	30 10% N220		*			*	10TCR-Q30
C3	.005		CCD-502				10TS-D50
C4	.005		CCD-502				10TS-D50
C5	25 10% N220		*			*	10TCR-Q25
C6	.02		CCD-203			GP120	5GA-S20
C7	.02		CCD-203			GP120	5GA-S20
C9	.02		CCD-203			GP120	5GA-S20
C10	2		CCTO-3R3	DTZ-3R3	NP03P3	CN0533	10TCC-V33
C10	2		CCTO-3R3	DTZ-3R3	NP03P3	CN0533	10TCC-V33
C11	.02		CCD-203			GP120	5GA-S20
C12	.02		CCD-203			GP120	5GA-S20
C13	.02		CCD-203			GP120	5GA-S20
C13	3		CCTO-3R3	DTZ-3R3	NP03P3	CN0533	10TCC-V33
C15	.02		CCD-203			GP120	5GA-S20
C16	.04		CCD-403			GP140	5GA-S40
C18	.02		CCD-203			GP120	5GA-S20
C19	.02		CCD-203			GP120	5GA-S20
C22	.02		CCD-203			GP120	5GA-S20
C23	40		CCTO-390			CN0439	10TCC-Q39
C24	15		CCTO-150	DTZ-15	NP015	CN0415	10TCC-Q15
C25	10		CCTO-100	DTZ-10	NP010	CN0410	10TCC-Q10
C27	30 10% N220		*			*	10TCR-Q30
C28	.02		CCD-203			GP120	5GA-S20
C29	135		CCD-151	DD-151		CN0315	10TCC-T15
C39	200		CCD-201	DD-201	GP200	GP320	10TS-T20
C31	.02		CCD-203			GP120	5GA-S20
C32	250		CCD-271	DD-271	GP270	GP327	10TS-T27
C33	500		CCD-501	DD-501	GP500	GP350	10TS-T50
C34	.02		CCD-203			GP120	5GA-S20
C35	.02		CCD-203			GP120	5GA-S20
C36	20		CCTO-200	DTZ-20	NP020	CN0420	10TCC-Q20
C37	135		CCD-151	DD-151		CN0315	10TCC-T15
C38	.02		CCD-203			GP120	5GA-S20
C39	.04		CCD-403			GP140	5GA-S40
C40	.02		CCD-203			GP120	5GA-S20
C41	.02		CCD-203			GP120	5GA-S20
C37	.005		CCD-502				10TS-D50
C48	.005		CCD-502				10TS-D50
C50	.04		CCD-403			GP140	5GA-S40
C52	.02		CCD-203			GP120	5GA-S20
C53	.02		CCD-203			GP120	5GA-S20
C54	20		CCTO-200	DTZ-20	NP020	CN0420	10TCC-Q20
C55	200		CCD-201	DD-201	GP200	GP320	10TS-T20
C45	200		CCD-201	DD-201	GP200	GP320	10TS-T20
C57	.02		CCD-203			GP120	5GA-S20
C58	30		CCTO-300				10TCC-Q30
C60	250		CCD-271	DD-271	GP270	GP327	10TS-T27

* 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				
			MFG. PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	MALLORY PART No.	TRW PART No.
VR1	Squelch	5000		B16-113 (18)			
VR2	Volume/Switch	5000		B16-214 (18)			
VR3	RF Gain	1000					

(18) Used original knob.

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.	MFR. PART No.			WORKMAN PART No.	MFR. PART No.
TH1	80 Cold NTC						

COILS (RF-IF)

ITEM No.	FUNCTION	REPLACEMENT DATA			REMARKS
		PART No.	OTHER IDENTIFICATION	MILLER PART No.	
L1	Ant Load (27MHz)		2E16007B		
L2	Rec Ant (27MHz)		3E45008		
L3	Rec RF (27MHz)				
L7	Xmit Osc (27MHz)				
L8	Final Tank (27MHz)				
L9	Final Tank (27MHz)				
L10	Ji Filter (27MHz)				
L11	Ant Load				
L12	RF Choke				
L13	RF Choke				
IFTA	IF Input (455kHz)		2E-48011		
IFTB	IF Interstage (455kHz)		2E480012		
IFTC	IF Output (455kHz)		2E-48013		

TRANSFORMER (Driver)

ITEM No.	TURNS RATIO			REPLACEMENT DATA			NOTES
	PRI.	SEC. 1	SEC. 2	MFR. PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	2	1		T-700 (1)			(1) Number on unit.

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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.	MFGR. PART No.	THORDARSON PART No.	TRIAD PART No.	
T2	128	8	T-700 (1)			(1) Number on unit.

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		MFGR. PART No.	QUAM PART No.	
SP1	2 1/4" PM, 8 ohms		22A0528	

CRYSTALS

CHANNEL	CTS KNIGHTS PART No.	
	RECEIVE	TRANSMIT
1	B20M26.510	A20M26.965
2	B20M26.520	A20M26.975
3	B20M26.530	A20M26.985
4	B20M26.550	A20M27.005
5	B20M26.560	A20M27.015
6	B20M26.570	A20M27.025
7	B20M26.570	A20M27.035

CHANNEL	CTS KNIGHTS PART No.	
	RECEIVE	TRANSMIT
8	B20M26.600	A20M27.055
9	B20M26.610	A20M27.065
10	B20M26.620	A20M27.075
11	B20M26.630	A20M27.085
12	B20M26.650	A20M27.105
13	B20M26.660	A20M27.115
13	B20M26.680	A20M27.135

CHANNEL	CTS KNIGHTS PART No.	
	RECEIVE	TRANSMIT
16	B20M26.700	A20M27.155
17	B20M26.710	A20M27.165
18	B20M26.720	A20M27.175
19	B20M26.730	A20M27.185
20	B20M26.750	A20M27.205
21	B20M26.760	A20M27.215
22	B20M26.770	A20M27.225
23	B20M26.800	A20M27.255

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
CT1	Filter		455kHz
S1	Switch		Xmit - Rec
S2	Switch		Channel Selector
S4	Switch		Call
S5	Switch		Battery Check