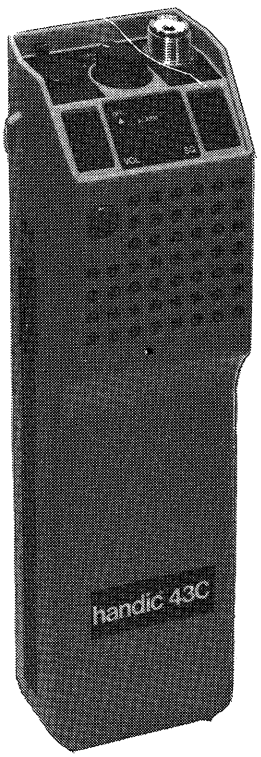
handic®

SERVICE MANUAL
FOR
handic 43C
CITIZEN'S BAND TRANSCEIVER
HANDHELD TYPE
4 CHANNELS 3 WATT



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SPECIFICATIONS

Description	Nominal spec.	Limit spec.
Frequency range	26.965 – 27.255 MHz	Adjustable to 31 MHz
Frequency tolerance	Less than ±0.003 %	Less than ±0.005 %
Operating voltage	12.5 VDC ±15 %	12.5 VDC +10 % 12.5 VDC −15 %
DC power input	3 W	
RF power output	1.4 W	1.2 W
Modulation	AM	
Receiving sensitivity	0.7 μV at 10 dB (S+N)/N @ 50 mW	2 μV at 10 dB (S+N)/N @ 50 mW
Selectivity	−35 dB at ±10 kHz @ 1 μV input	−30 dB at ±10 kHz @ 1 μV input
Intermediate frequency	455 kHz with ceramic filter	
Signal to noise ratio	45 dB at 1 mV input	40 dB at 1 mV input
Squelch sensitivity Threshold Tight	 500 μV	 Less than 1 μV 50 μV – 3 mV
Audio output	0.5 W at 10 % T.H.D. 0.7 W full volume	0.5 W at 10 % T.H.D. 0.5 W full volume

Semiconductors	13 transistors, 7 diodes and 2 thermistors
Channels	4 channels
Frequency control	Crystal controlled
Microphone	Speaker microphone
Controls	Volume with power switch Squelch control Channel selector
Jacks	External antenna (SO-239 type) External speaker and power (DIN-5P type) Speaker/Microphone (DIN-4P type)
P.T.T.	Accepted type
Ext. antenna impedance	50 Ω
Speaker	8 Ω. 57 mm. Dynamic type
Size	75(W) x 250(H) x 50(D) mm.

DISASSEMBLY INSTRUCTION

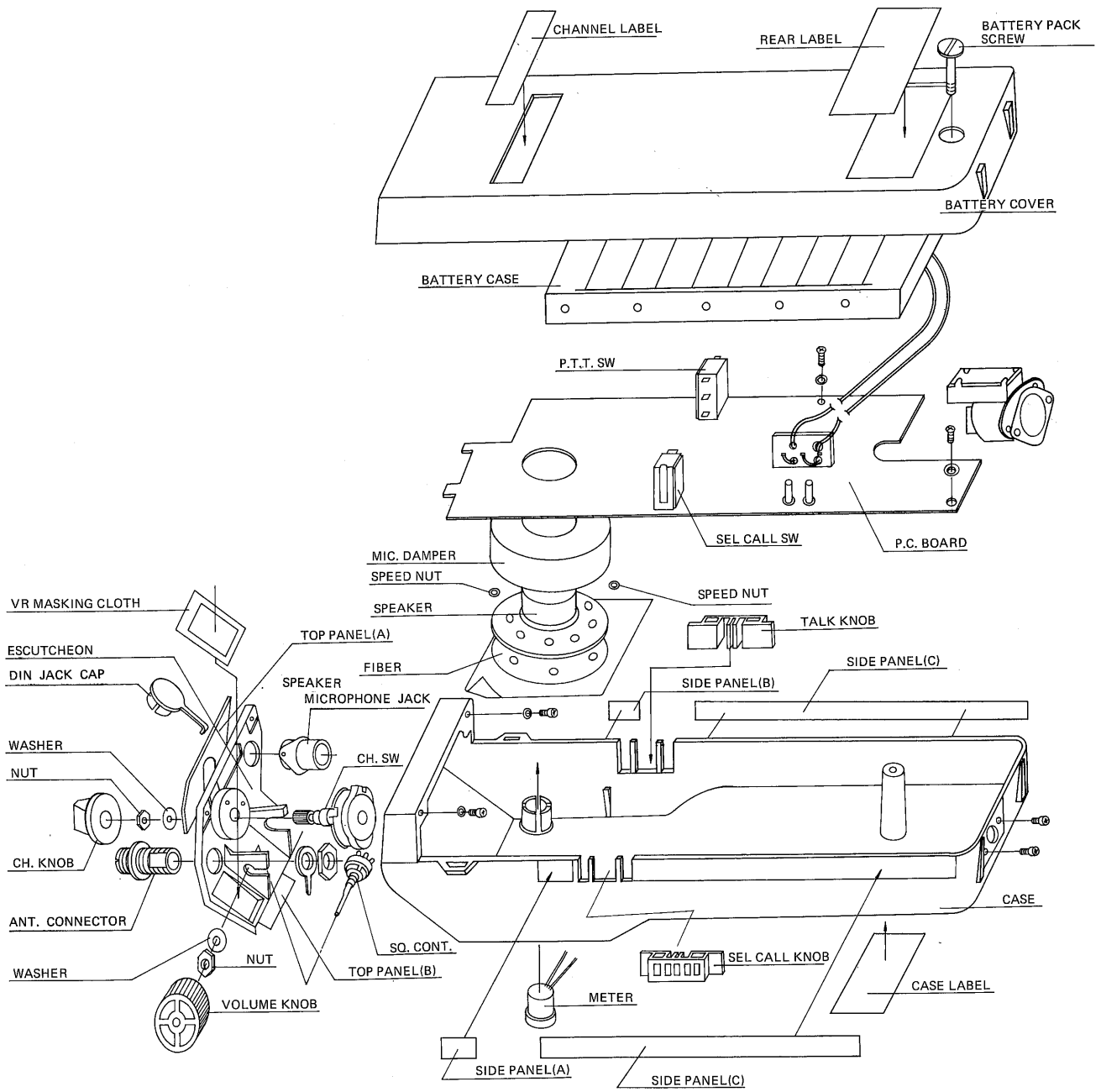


FIGURE 1

BATTERY INSTALLATION

The detachable battery compartment in the rear cover of the transceiver serves as a complete power pack and is designed to house 8 "AA" batteries with 2 dummy batteries in series, or 10 rechargeable NiCd types. See figures below for installation of batteries.

1. To detach the rear cover CAREFULLY loosen the screw at the lower part of the rear cover.
2. Detach the battery compartment carefully, and install the 8 batteries with 2 dummy batteries in series in compartment as shown.

NOTE: If you install NiCd batteries, 10 pcs. are required for suitable voltage (12.5 V DC), and in this case, no dummy batteries are installed.

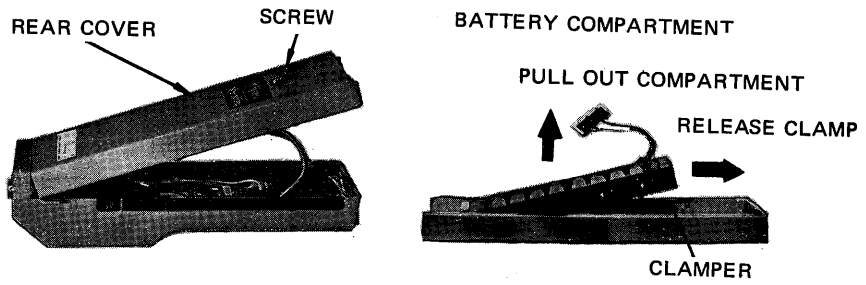


FIGURE 2

CRYSTAL INSTALLATION

Channel 13 (27.115 MHz) is supplied in the unit. Other channels can be operated by installing suitable crystals in each internal crystal socket. Crystal sockets are located inside the case, on the printed circuit board. Remove the rear cover. Plug crystals into the sockets on the printed circuit board. Plug Transmit (TX) crystals into TX sockets and receive (RX) crystals into RX sockets. Do NOT interchange or mix RX and TX crystals. Do always have a matched set in each pair of crystal sockets.

Order crystals from **h a n d i c** stating channel number and frequency. **h a n d i c** is not responsible for poor operation when crystals from another manufacturer are used.

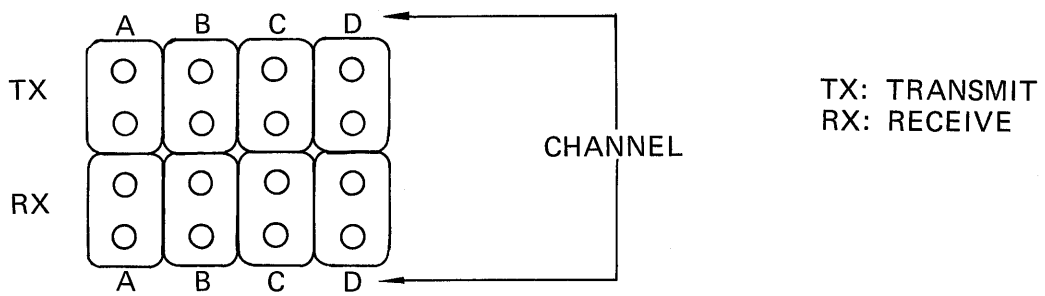


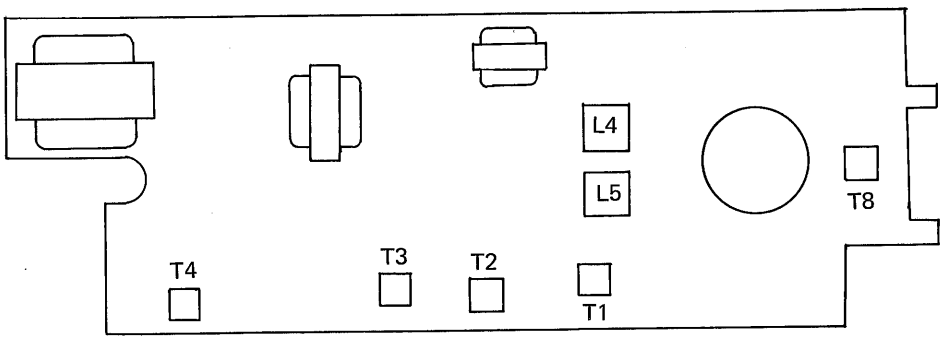
FIGURE 3

GENERAL ALIGNMENT

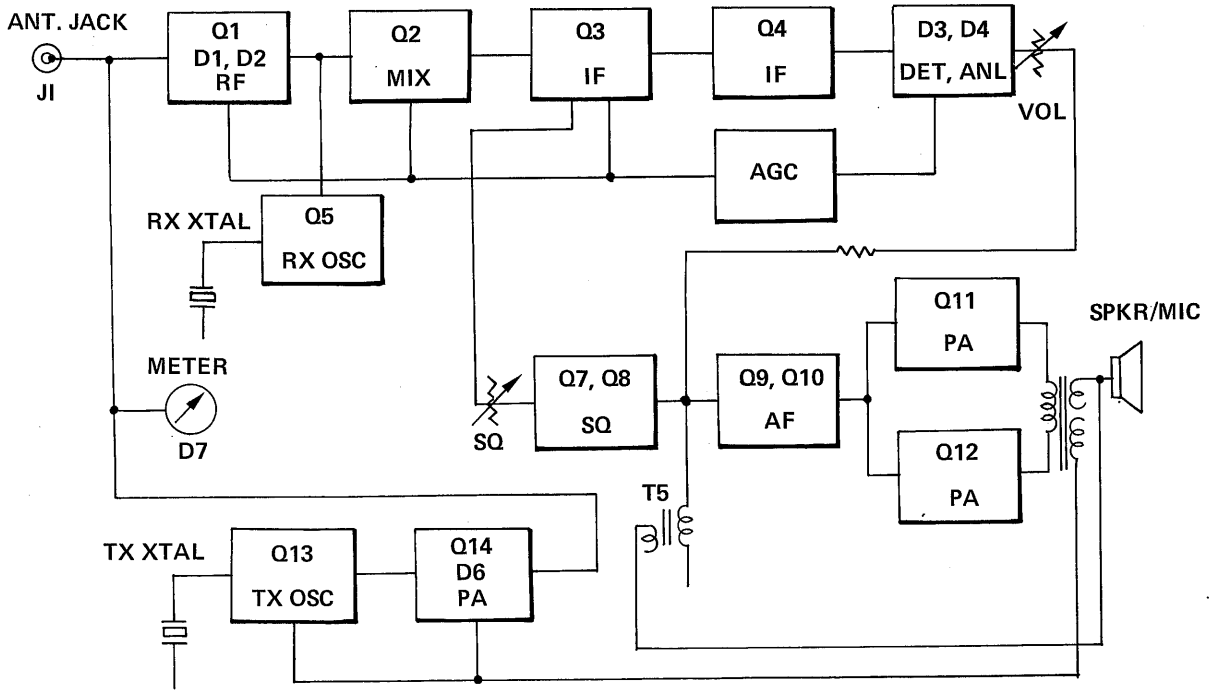
Test equipment required

1. RF standard signal generator (S.S.G.)
2. AF signal generator
3. V.T.V.M. (AC)
4. V.T.V.M. (DC)
5. Oscilloscope
6. Monitor receiver
7. Frequency counter
8. DC power supply
9. 500 mA DC ammeter
10. 8 Ω dummy load
11. RF power meter with 50 Ω dummy load
12. Radiation (Field strength) meter

ALIGNMENT POSITION



BLOCK DIAGRAM



TRANSMITTER SECTION ALIGNMENT

1. Connect the equipment as shown in Figure 4.
2. Perform the alignment procedure described in Table 1.

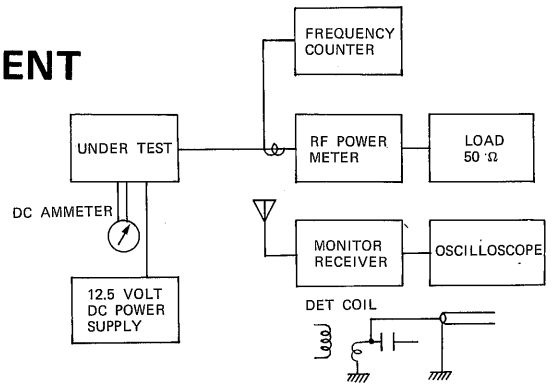


FIGURE 4

TRANSMITTER SECTION ALIGNMENT CHART

Step	Control Setting	Test Equipment Setting	Power Supply Voltage	Adjust	Remarks
1	CH: A position 27.115 MHz	Power meter (50 Ω): to EXT. ANT. Jack 500 mA ammeter: in series with lead between modulation winding of T7 and collector of Q14 Monitor receiver: connect an oscilloscope and set the frequency to 27.115 MHz	Supply voltage: 12.5 volts		
2	Press the P.T.T. SW	"	"	T8	Max. power output
3	"	"	"	L4, 5	Peak on the power meter and dip on the ammeter to get max. output at EXT. ANT. Jack
4	"	Power meter (50 Ω): to EXT. ANT. Jack 500 mA ammeter: in series with lead between modulation winding of T7 and collector of Q14	Vary supply voltage from 15 to 9 volts	T8	If no output adjust T8 to assure output at both voltage extremes
5	"	Audio frequency generator: to C26 (or talk into Microphone)	Reset the supply voltage to 12.5 volts		Check modulation
6					Repeat steps 2 to 4
7	CH: A position Press the P.T.T. SW	Couple the frequency counter as shown in Figure 4	Supply voltage 12.5 volts		Check the transmitting frequency

TABLE 1

RECEIVER SECTION ALIGNMENT

1. Connect the equipment as shown in Figure 5.
2. Perform the alignment procedure described in Table 2.

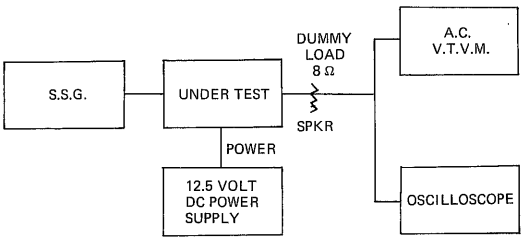


FIGURE 5

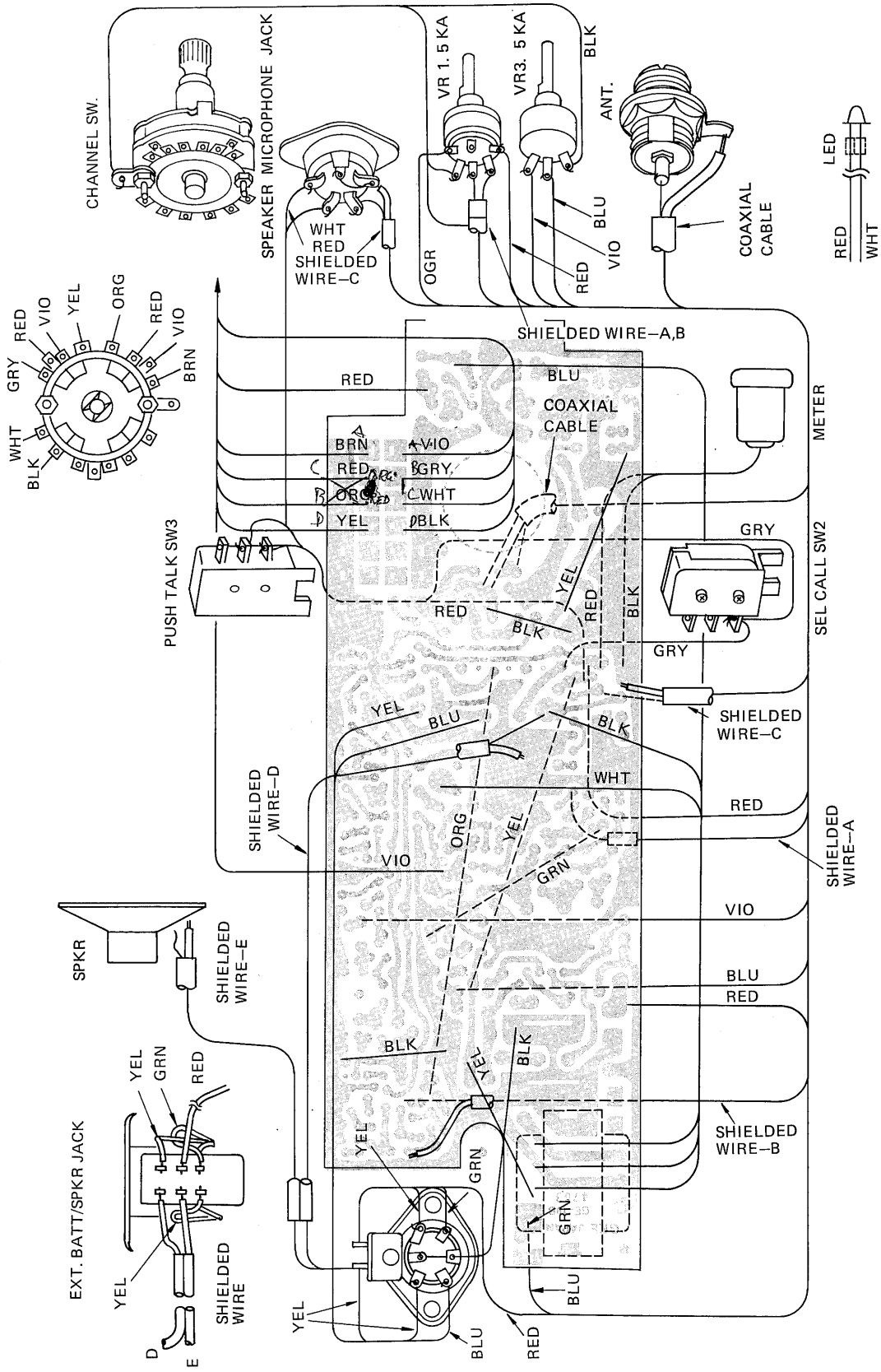
RECEIVER SECTION ALIGNMENT CHART

Step	Control Setting	Test Equipment Connector	Signal Generator Setting/Supply	Adjust	Remarks
1	Volume control: Max. (Rotate downward fully) SQ control: Min. (Rotate upward fully) CH: A position 27.115 MHz	V.T.V.M.: Parallel with 8 Ω dummy load connected to EXT. DC/SPKR Jack Signal generator: through 100 pF to the base of Q2 2SC371(O)	Freq.: 455 kHz MOD.: 1 kHz 30% Supply volts 12.5 volts	T3, 4	Max. output on voltmeter
2	"	V.T.V.M.: Paralled with 8 Ω dummy load connected to EXT. SPKR Jack Signal generator: to EXT. ANT. Jack	Freq.:27.115MHz Mod.: 1 kHz 30%	T1	Max. S/N Ratio
3	"	"		T2	Max. output on voltmeter
4					Repeat steps 2 to 3
5	Volume control: adjust for desired audio level SQ control: Min. (Rotate upward fully)	V.T.V.M.: Parallel with 8 Ω dummy load or across speaker to EXT. DC/SPKR Jack Signal generator to EXT. ANT. Jack	Freq.:27.115MHz Mod.:1 kHz output: 500 μV	VR2	Adjust so squelch just opens

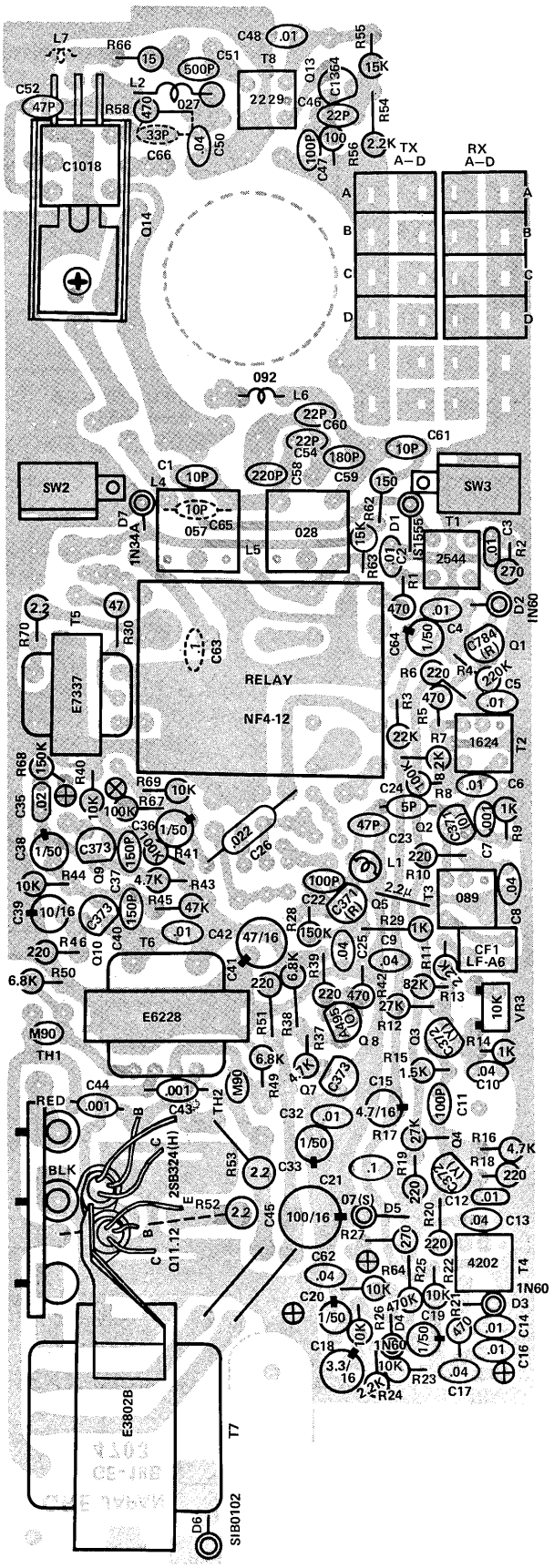
TABLE 2

NOTE: Keep the input signal from S.S.G. as low as possible in alignment step 1 to 4.

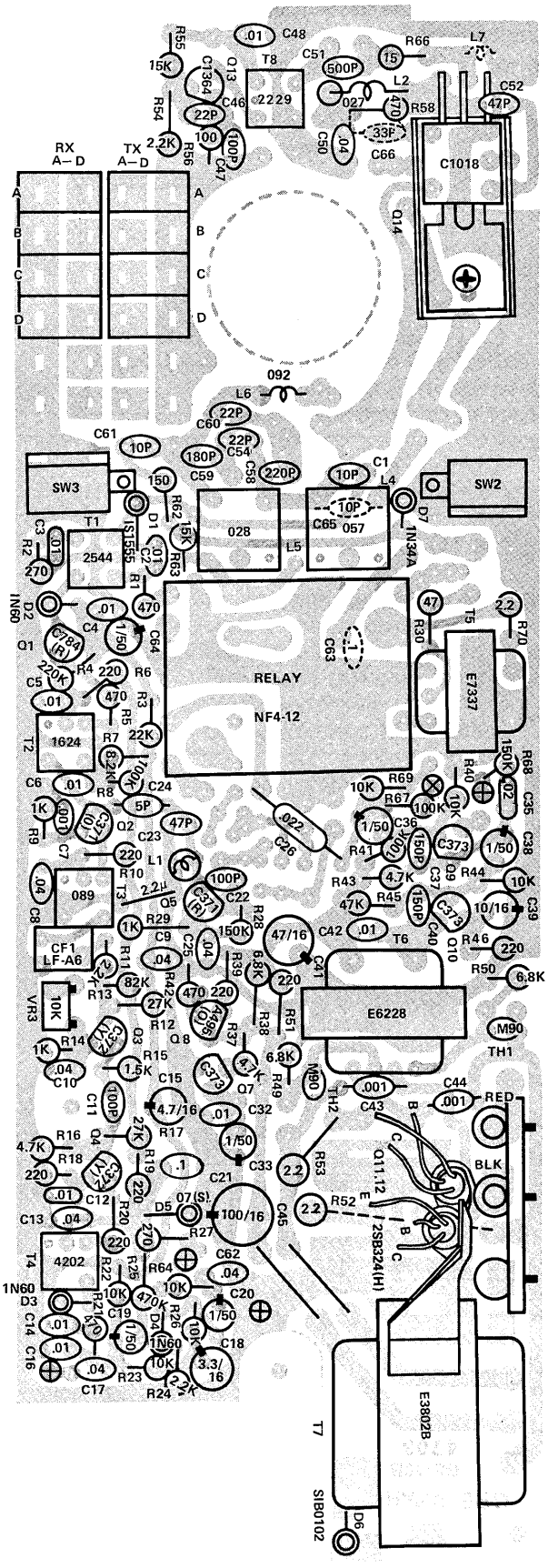
WIRING DIAGRAM



PRINTED CIRCUIT BOARD TOP VIEW



PRINTED CIRCUIT BOARD BOTTOM VIEW



SELECTIVE CALL

If **handic** PTRM selective call unit is used then selective call operation is possible.
It is constructed to fit into the cabinet.
handic PTRM should be hold in place by using 2-side adhesive tape between the tuning forks and the front cabinet.

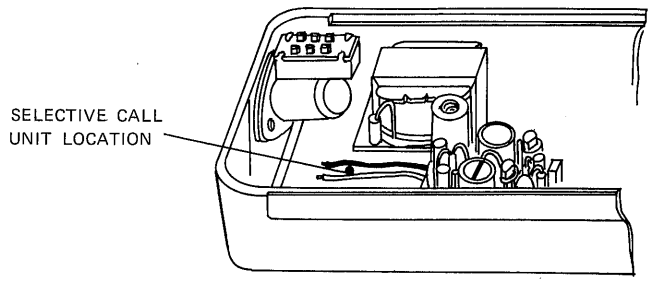


FIGURE 6

WIRING

Solder the wires from **handic** PTRM as follows :

SOLDER LIKE THIS

1. BRN wire to SC-1 on the P.C. Board.
2. RED wire to SC-2 on the P.C. Board.
3. ORG wire to SC-3 on the P.C. Board.
4. YEL wire to SC-4 on the P.C. Board.
5. GRN wire to SC-5 on the P.C. Board.
6. BLU wire to center terminal of Selective Call switch.
7. RED wire from LED to SC-2 on the P.C. Board.
8. WHT wire from LED to solder pin on PTRM.

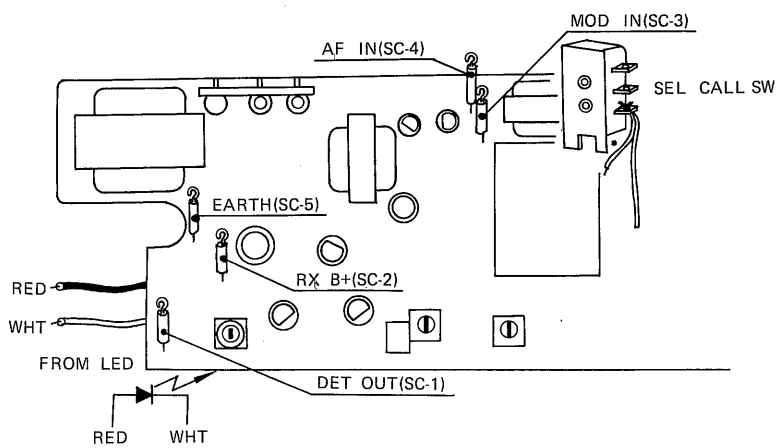


FIGURE 7

TROUBLE SHOOTING

Symptom	Possible cause
1) Does not receive	A) Defective crystals. B) Faulty local oscillator or faulty local oscillator circuit component. C) Defective RF amp., IF amp., CF1 or their circuit component. D) Faulty channel switch. E) Defective squelch control or faulty control circuit component F) Defective power switch volume. G) Battery weak. H) Defective push to talk switch. I) Faulty audio amplifier circuit. J) Defective speaker and/or speaker jack.
2) Does not squelch	A) Defective squelch control. B) Faulty squelch control circuit component.
3) Low sensitivity reception	A) Defective transistor Q1 or faulty RF stage amplifier circuit component. B) Defective IF amplifier or faulty IF amplifier circuit component. C) Defective local oscillator. D) Frequency not covering the correct channel. E) Weak battery and/or crystal. F) Defective external antenna.
4) Mixed reception	A) Wrong crystal for receiving frequency.
5) No sound is audible and no modulation	A) Defective speaker jack. B) Defective transistors Q11, 12 and/or defective associated circuit component. C) Defective transistor Q10 and/or defective associated circuit component. D) Defective squelch control. E) Faulty squelch control circuit component. F) Defective speaker. G) Defective audio output transformer T7. H) Defective resistor R51, R52 and R53.
6) Does not transmit.	A) Defective crystal. B) Faulty transmit oscillator or faulty transmit oscillator circuit component. C) Defective transistor Q14 and/or defective associated circuit component. D) Defective talk switch or relay. E) Weak battery.
7) Carrier is emitted but not modulation.	A) Defective microphone jack. B) Defective MIC. transformer T5. C) Defective relay D) Defective audio output transformer T7.
8) Transmit low power and low sensitivity.	A) Weak battery. B) Defective antenna connector. C) Defective antenna.

PARTS LIST

Ref. No.	Description				handic Stock Number	MFR'S Parts Number
	RESISTORS					
R1	Carbon film	470	1/4 W	± 5 %	951477	ELR-25J-471
R2	Carbon film	270	1/4 W	± 5 %	951435	ELR-25J-271
R3	Carbon film	22 K	1/4 W	± 5 %	951757	ELR-25J-223
R4	Carbon film	220 K	1/4 W	± 5 %	951925	ELR-25J-224
R5	Carbon film	470	1/4 W	± 5 %	951477	ELR-25J-471
R6	Carbon film	220	1/4 W	± 5 %	951421	ELR-25J-221
R7	Carbon film	8.2 K	1/4 W	± 5 %	951687	ELR-25J-822
R8	Carbon film	100 K	1/4 W	± 5 %	951869	ELR-25J-104
R9	Carbon film	1 K	1/4 W	± 5 %	951533	ELR-25J-102
R10	Carbon film	220	1/4 W	± 5 %	951421	ELR-25J-221
R11	Carbon film	2.2 K	1/4 W	± 5 %	951589	ELR-25J-222
R12	Carbon film	27 K	1/4 W	± 5 %	951771	ELR-25J-273
R13	Carbon film	82 K	1/4 W	± 5 %	951855	ELR-25J-823
R14	Carbon film	1 K	1/4 W	± 5 %	951533	ELR-25J-102
R15	Carbon film	1.5 K	1/4 W	± 5 %	951561	ELR-25J-152
R16	Carbon film	4.7 K	1/4 W	± 5 %	951645	ELR-25J-472
R17	Carbon film	27 K	1/4 W	± 5 %	951771	ELR-25J-273
R18	Carbon film	220	1/4 W	± 5 %	951421	ELR-25J-221
R19	Carbon film	220	1/4 W	± 5 %	951421	ELR-25J-221
R20	Carbon film	220	1/4 W	± 5 %	951421	ELR-25J-221
R21	Carbon film	470	1/4 W	± 5 %	951477	ELR-25J-471
R22	Carbon film	10 K	1/4 W	± 5 %	951701	ELR-25J-103
R23	Carbon film	10 K	1/4 W	± 5 %	951701	ELR-25J-103
R24	Carbon film	2.2 K	1/4 W	± 5 %	951589	ELR-25J-222
R25	Carbon film	470 K	1/4 W	± 5 %	951981	ELR-25J-474
R26	Carbon film	10 K	1/4 W	± 5 %	951701	ELR-25J-103
R27	Carbon film	270	1/4 W	± 5 %	951435	ELR-25J-271
R28	Carbon film	150 K	1/4 W	± 5 %	951897	ELR-25J-154
R29	Carbon film	1 K	1/4 W	± 5 %	951533	ELR-25J-102
R30	Carbon film	47	1/4 W	± 5 %	951309	ELR-25J-470
R31	Not used					
R32	Not used					
R33	Not used					
R34	Not used					
R35	Not used					
R36	Not used					
R37	Carbon film	4.7 K	1/4 W	± 5 %	951645	ELR-25J-472
R38	Carbon film	6.8 K	1/4 W	± 5 %	951673	ELR-25J-682
R39	Carbon film	220	1/4 W	± 5 %	951421	ELR-25J-221
R40	Carbon film	10 K	1/4 W	± 5 %	951701	ELR-25J-103
R41	Carbon film	100 K	1/4 W	± 5 %	951869	ELR-25J-104
R42	Carbon film	470	1/4 W	± 5 %	951477	ELR-25J-471
R43	Carbon film	4.7 K	1/4 W	± 5 %	951645	ELR-25J-472
R44	Carbon film	10 K	1/4 W	± 5 %	951701	ELR-25J-103
R45	Carbon film	47 K	1/4 W	± 5 %	951813	ELR-25J-473
R46	Carbon film	220	1/4 W	± 5 %	951421	ELR-25J-221
R47	Not used					
R48	Not used					
R49	Carbon film	6.8 K	1/4 W	± 5 %	951673	ELR-25J-682

Ref. No.	Description				handic Stock Number	MFR'S Parts Number
R50	Carbon film	6.8 K	1/4 W	± 5 %	951673	ELR-25J-682
R51	Carbon film	220	1/4 W	± 5 %	951421	ELR-25J-221
R52	Carbon film	2.2	1/2 W	± 10 %	954102	ELR-25K-2R2
R53	Carbon film	2.2	1/2 W	± 10 %	954102	ELR-25K-2R2
R54	Carbon film	2.2 K	1/4 W	± 5 %	951589	ELR-25J-222
R55	Carbon film	15 K	1/4 W	± 5 %	951729	ELR-25J-153
R56	Carbon film	100	1/4 W	± 5 %	951365	ELR-25J-101
R57	Not used					
R58	Carbon film	470	1/2 W	± 10 %	954123	ELR-25K-471
R59	Not used					
R60	Not used					
R61	Not used					
R62	Carbon film	150	1/4 W	± 5 %	951393	ELR-25J-151
R63	Carbon film	15 K	1/4 W	± 5 %	951729	ELR-25J-153
R64	Carbon film	10 K	1/4 W	± 5 %	951701	ELR-25J-103
R65	Not used					
R66	Carbon film	10	1/4 W	± 5 %	951197	ELR-25J-100
R67	Carbon film	100 K	1/4 W	± 5 %	951869	ELR-25J-104
R68	Carbon film	150 K	1/4 W	± 5 %	951897	ELR-25J-154
R69	Carbon film	10 K	1/4 W	± 5 %	951701	ELR-25J-103
R70	Carbon film	2.2	1/4 W	± 5 %	951085	ELR-25J-2R2
			CAPACITORS			
C1	Ceramic	10 pF		± 0.5 pF	990239	FC-50
C2	Ceramic	0.01 μF		− 20 − + 80 %	990477	MC-70
C3	Mylar	0.01 μF		± 20 %	990099	
C4	Ceramic	0.01 μF		− 20 − + 80 %	990477	MC-70
C5	Ceramic	0.01 μF		− 20 − + 80 %	990477	MC-70
C6	Ceramic	0.01 μF		− 20 − + 80 %	990477	MC-70
C7	Ceramic	0.01 μF		− 20 − + 80 %	990477	MC-70
C8	Ceramic	0.04 μF		− 20 − + 80 %	990491	MC-100
C9	Ceramic	0.04 μF		− 20 − + 80 %	990491	MC-100
C10	Ceramic	0.04 μF		− 20 − + 80 %	990491	MC-100
C11	Ceramic	100 pF		± 10 %	990295	FC-70
C12	Mylar	0.01 μF		± 20 %	990099	
C13	Ceramic	0.04 μF		− 20 − + 80 %	990491	MC-100
C14	Ceramic	0.01 μF		− 20 − + 80 %	990477	MC-70
C15	Electrolytic	4.7 μF	16 WV	− 10 − + 75 %	990561	CE04W1C4R7
C16	Ceramic	0.01 μF		− 20 − + 80 %	990477	MC-70
C17	Ceramic	0.04 μF		− 20 − + 80 %	990491	MC-100
C18	Electrolytic	3.3 μF	16 WV	− 10 − + 75 %	990554	CE04W1C3R3
C19	Electrolytic	1 μF	50 WV	− 10 − + 75 %	990008	CE04W1H010
C20	Electrolytic	1 μF	50 WV	− 10 − + 75 %	990008	CE04W1H010
C21	Ceramic	0.1 μF		− 10 − + 80 %	990498	MMC-135
C22	Ceramic	100 pF		± 10 %	990295	FC-70
C23	Ceramic	47 pF		± 5 %	990274	FC-60
C24	Ceramic	5 pF		± 0.5 pF	990218	FC-50
C25	Ceramic	0.04 μF		− 20 − + 80 %	990491	MC-100
C26	Mylar	0.022 μF		± 20 %	990113	
C27	Not used					
C28	Not used					
C29	Not used					

Ref. No.	Description				handic Stock Number	MFR'S Parts Number
C30	Not used					
C31	Not used					
C32	Ceramic	0.01 μF		− 20 − + 80 %	990477	MC-70
C33	Electrolytic	1 μF	50 WV	− 10 − + 75 %	990008	CE04W1H010
C34	Not used					
C35	Mylar	0.02 μF		± 20 %	990106	
C36	Electrolytic	1 μF	50 WV	− 10 − + 75 %	990008	CE04W1H010
C37	Ceramic	150 pF		± 20 %	990309	FC-80
C38	Electrolytic	1 μF	50 WV	− 10 − + 75 %	990008	CE04W1H010
C39	Electrolytic	10 μF	16 WV	− 10 − + 50 %	990036	CE04W1C100
C40	Ceramic	150 pF		± 20 %	990309	FC-80
C41	Electrolytic	47 μF	16 WV	− 10 − + 50 %	990043	CE04W1C470
C42	Ceramic	0.01 μF		− 20 − + 80 %	990477	MC-70
C43	Ceramic	0.001 μF		− 20 − + 80 %	990463	MC-60
C44	Ceramic	0.001 μF		− 20 − + 80 %	990463	MC-60
C45	Electrolytic	100 μF	16 WV	− 10 − + 50 %	990050	CE04W1C101
C46	Ceramic	22 μF		± 5 %	990253	FC-50
C47	Ceramic	100 μF		± 10 %	990295	FC-70
C48	Ceramic	0.01 μF		− 20 − + 80 %	990477	MC-70
C49	Not used					
C50	Ceramic	0.04 μF		− 20 − + 80 %	990491	MC-100
C51	Ceramic	500 pF		± 20 %	990365	FC-100
C52	Ceramic	47 pF		± 5 %	990274	FC-60
C53	Not used					
C54	Ceramic	22 pF		± 5 %	990253	FC-50
C55	Not used					
C56	Not used					
C57	Not used					
C58	Ceramic	220 pF		± 20 %	990323	FC-80
C59	Ceramic	180 pF		± 20 %	990316	FC-80
C60	Ceramic	22 pF		± 5 %	990253	FC-50
C61	Ceramic	10 pF		± 0.5 pF	990239	FC-50
C62	Ceramic	0.04 μF		− 20 − + 80 %	990491	MC-100
C63	Ceramic	0.1 μF		− 20 − + 80 %	990498	MMC-135
C64	Electrolytic	1 μF	50 WV	− 10 − + 75 %	990008	CE04W1H010
C65	Ceramic	10 μF		± 0.5 pF	990239	FC-50
C66	Ceramic	33 pF		± 5 %	990267	FC-50
	SEMICONDUCTORS					
Q1	Transistor	silicon			992108	2SC784(R)
Q2	Transistor	silicon			992038	2SC371(O)
Q3	Transistor	silicon			992059	2SC372(Y)
Q4	Transistor	silicon			992059	2SC372(Y)
Q5	Transistor	silicon			992045	2SC371(R)
Q6	Not used					
Q7	Transistor	silicon			992066	2SC373
Q8	Transistor	silicon			992010	2SA495(O)
Q9	Transistor	silicon			992066	2SC373
Q10	Transistor	silicon			992066	2SC373
Q11	Transistor	germanium			992024	2SB324(H)
Q12	Transistor	germanium			992024	2SB324(H)

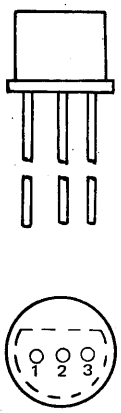
Ref. No.	Description		handic Stock Number	MFR'S Parts Number
Q13	Transistor	silicon	992129	2SC1364
Q14	Transistor	silicon	992122	2SC1018
Q15	Not used			
D1	Diode	silicon	992150	1S1555
D2	Diode	germanium	992143	1N60
D3	Diode	germanium	992143	1N60
D4	Diode	germanium	992143	1N60
D5	Diode	Zener	992199	EQA01-07(S)
D6	Diode	silicon	992171	SIB0102
D7	Diode	germanium	992136	1N34A
D8	Diode	L.E.D.	992192	TLR-103
TH1	Thermistor		992220	M-90
TH2	Thermistor		992220	M-90
	COILS / TRANSFORMERS / FILTER			
L1	Microinductor	2.2 μH	995010	LF42R2K
L2	R.F.C.	0.84 μH	995017	4LNC-027
L3	Not used			
L4	T NET coil		995080	8SNF-057
L5	π NET coil		995031	10PNP-028
L6	R.F.C.		995087	4LNC-092
L7	Microinductor		995094	LF1-100K
T1	ANT coil		995101	113CN2544
T2	RF coil		995045	1624
T3	IF coil		995052	7SS1-089
T4	IF coil		995059	4202
T5	MIC. transformer		995374	E7337
T6	Input transformer		995381	E6228
T7	Output transformer		995388	E2802B
T8	TX OSC. coil		995108	74XN-2229A02
CF-1	Ceramic filter		995318	LF-A6
	VOLUMES			
VR1	Volume control	5 K(A)	984004	V12M4-1S-SJ -15FHT5K
VR2	Semi fixed volume	10 K	984018	P6S2A
VR3	Squelch control	5 K(A)	984011	V12M4-1N -15FHA5K
	SWITCHES			
SW1	Channel switch		994046	S18-1-3-4
SW2	Micro switch	Sel. call	994053	SS-5GL
SW3	Micro switch	Push talk	994053	SS-5GL

Ref. No.	Description	handic Stock Number	MFR'S Parts Number
	RELAY		
RY-a-d	Relay	994074	NF-4-12V
	CRYSTALS		
RX	Crystal 26.660 MHz	452284	
TX	Crystal 27.115 MHz	452291	
	MISCELLANEOUS		
	Case	599295	GE-19B-4637
	Battery case	599302	GE-19B-4638
	Escutcheon	599309	GE-19C-4639
	VR knob	599036	GE-19D-4632
	CH. knob	599043	GE-19D-4631
	Talk knob	599316	GE-19D-4643
	DIN plug cap	599323	GE-19D-4645
	Earth lug	599330	GE-19D-4646
	Battery pack screw	599134	GE-19D-4743
	Dummy battery	599113	GE-19D-4635
	MIC. damper	599148	GE-19D-4811
	PCB holder	599337	GE-19D-4812
	Masking cloth	599344	GE-19D-4748
	DIN jack holder	599351	GE-19D-4744
	Speaker cloth	599141	GE-19D-4720
	Shoulder straps	599358	
	3P connector	599288	
	Battery terminal pin	599190	56BN1109
	Top panel (A) (CH. A–D)	599365	GE-19D-4778(A)
	Top panel (C) (VOL, SQ, ALARM)	599372	GE-19D-4778(C)
	Rear label (SWEDEN)	599379	GE-19D-4780A-1
	Rear label (INTERNATIONAL)	599386	GE-19D-4780B-1
	Case label (handic 43C)	599393	GE-19D-4781C
	Side panel (A) (SEL CALL)	599400	GE-19D-4779A
	Side panel (B) (PUSH TALK)	599407	GE-19D-4779B
	Side panel (C)	599414	GE-19D-4779C
	CH. label (CH. A–D)	599421	GE-19D-4782C
	Crystal socket	599106	S2-101P
	Ant. Connector	599428	S0-239
	4P DIN jack (SPEAKER MICROPHONE)	599435	CS-244
	5P DIN jack (EXT. BATT/SPKR)	599155	CS-253
	Speaker	599169	EAS-6P01S
	P.C. Board	599442	GE-19B-4703
	Test pin	599449	C.T.P.
	Micro switch holder	599456	GE-19D-4749
	Heat sink (2SB324)	599463	NO. 30
	Heat sink (2SC1018)	599470	GE-19D-4751
	Meter (1 mA)	599176	100-18
	Battery case	599183	310-2

TRANSISTORS LEAD IDENTIFICATION

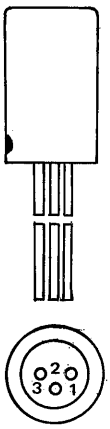
(A): 2SA495(O), 2SC371(O), 2SC372(Y), 2SC373, 2SC784(R)
(B): 2SB324(H)
(C): 2SC1018
(D): 2SC1364

(A)



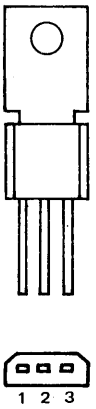
1 Emitter
2 Collector
3 Base

(B)



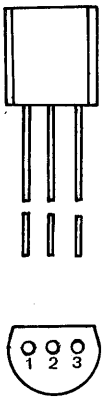
1 Emitter
2 Base
3 Collector

(C)



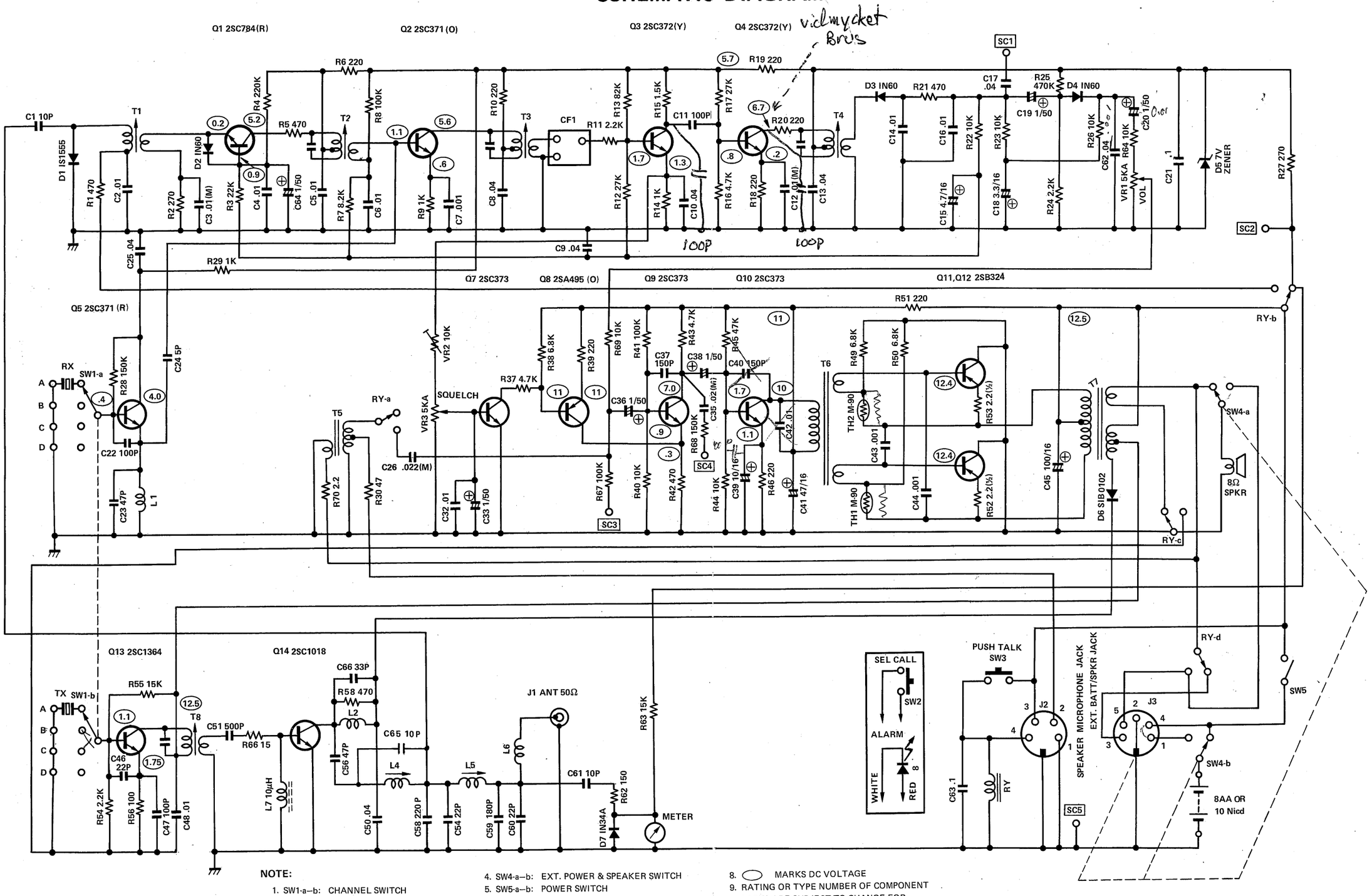
1 Collector
2 Base
3 Emitter

(D)



1 Emitter
2 Collector
3 Base

SCHEMATIC DIAGRAM



NOTE:

1. SW1-a–b: CHANNEL SWITCH
2. SW2 : SELECTIVE CALL SWITCH
3. SW3 : PUSH TALK SWITCH
4. SW4-a–b: EXT. POWER & SPEAKER SWITCH
5. SW5-a–b: POWER SWITCH
6. RESISTANCE VALUES IN OHMS K = 1000
7. CAPACITANCE VALUES IN MF P = MMF
8. ⬭ MARKS DC VOLTAGE
9. RATING OR TYPE NUMBER OF COMPONENT PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT WITHOUT NOTICE

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