

23 CHANNEL CB MOBILE TRANSCEIVER



Sidewinders II

INSTRUCTION MANUAL

WARNING

- A. All adjustments, except for external knobs and controls, must be made by or under the immediate supervision of a person holding a commercial first or second-class radio operator license.
- B. Replacement or substitution of crystals, transistors, and other components are regulated under the Federal Communications Commission (FCC) Rules and Regulations Part 95 and Part 2. All changes or modifications must be made by or under the immediate supervision of a person holding a first or secondclass radio operator license. Proper and qualified servicing is necessary to assure continued compliance with FCC Rules and Regulations.
- C. The Federal Communications Commission (FCC) requires a valid "CLASS D" License, apply to the FCC on a Form 505. The address of the FCC is:
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

GENERAL INFORMATION

LICENSING:

Before filing a formal application for a station license, you must read the sections covering Class D Citizens radio stations in part 95 of the F.C.C. Rules and Regulations. To obtain a station license, complete F.C.C. Form 505, "Application for Class C or D Station License in the Citizens Radio Service" and forward, along with filing fee, to The Secretary, Federal Communications Commission, Washington, D.C. 20554. Should you require advice and or assistance, your dealer will be glad to help you. Remember, Do not operate the transmitter until you receive your station License.

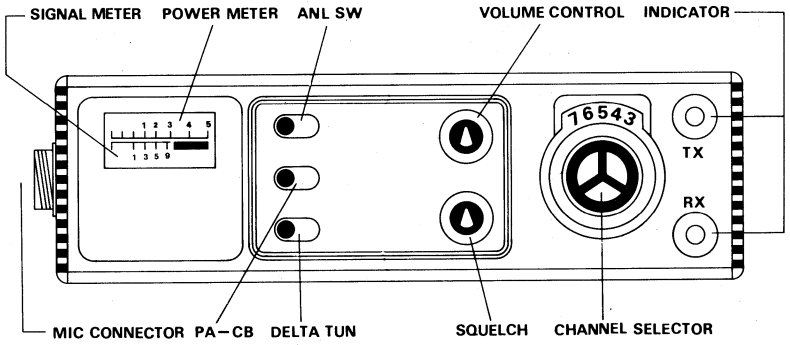
SERVICING:

It is the user's responsibility to see that this unit is operating at all times, in accordance with the F.C.C. Citizens Radio Service Regulations.

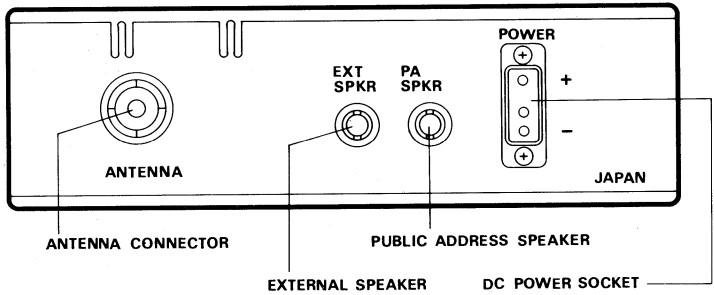
If you install your own transceiver, do not attempt to make any transmitter tuning adjustment. Adjustments are prohibited by the F.C.C. unless you hold or are in the presence and under the supervision of a first or second class radio telephone licensed person. A Citizens Band or Amateur License is not sufficient.

Replacements or crystals, transistors or other compartments must be those supplied by the manufacturer.

FRONT VIEW



BACK VIEW



DESCRIPTION

This unit is all-transistorized, 23 channel Citizens Band Transceiver, and ideally suited for mobile operation from a 13.8V negative or positive ground DC power source. (Because of low current drain). A 12V DC power cord and a mounting bracket are included with this unit. To provide the crystal-controlled, 23 channel operation, this unit is employed an all-transistor DUAL CONVERSION CIRCUIT SYSTEM. The receiver is a sensitive superheterodyne circuit featuring. Dual conversion, low noise RF stage, adjustable squelch, automatic noise limiting, S-meter, mechanical filter, external speaker jack, and instantaneous selection of any of the 23 crystal controlled channels. The transmitter section is designed around highly reliable silicon transistors and the DOUBLE CONVERSION CIRCUIT SYSTEM. This circuit makes use of the output of two crystal-controlled oscillators which are beat together to produce the desired frequency. The transmitter final is a conservatively rated high gain RF power transistor.

FUNCTION OF CONTROLS AND INDICATORS CHANNEL SELECTOR

The Channel Selector Switch has 23 operating positions. This switch sets both transmit and receive frequencies simultaneously by switching the proper crystals into the DUAL CONVERSION CIRCUIT SYSTEM for any of the 23 CB channels.

SQUELCH CONTROL

The Squelch Control is used to silence background noise (atmospheric or man-made noise) in the absence of a received radio signal. In the full counterclockwise position, the unit is unsquelched (no noise silencing at all).

In the fully clockwise position, the unit is squelched for even very strong signals.

VOLUME CONTROL AND ON-OFF SWITCH

This control turns the power ON and OFF and adjusts the loudness of received signals.

FUNCTION OF METER AND SIGNAL LIGHTS

This meter has functions as follows:

1. Indicator of the received signal. The metering circuit for 100 microvolts and the S-meter will read S9.
2. Indicator of RF output power.
3. Receiver-on indicator: When the receiver is on, RX light lights up in green color.
4. Transmitter-on indicator: When the transmitter is on, TX light lights up in red color.
5. Modulation indicator: The TX light fluctuates in brilliant red when the transmitter is modulated.

TRANSMISSION

To transmit, press the push to Talk Switch on the left side of microphone, then you can talk anything.

The Red Lamp and S-Meter should be on work against Input.

DO NOT PRESS TALK SWITCH BEFORE CONNECTING ANTENNA.

MICROPHONE CONNECTION

First, push Microphone Plug into Microphone Connector along Guide Rail on the Front Left Side Panel, then turn it clockwise tightly outside the Ring Screw.

PA-CB SWITCH

This switch is used for selecting normal CB communications, or public address paging. In the PA position, it disables the transceiver and the internal speaker unit, and connects the audio amplifier output circuit to an external loud speaker unit for paging. During PA operation, the "S" meter is not illuminated.

ANTENNA CONNECTION

For Car CB Impedance 50 Ohm 27 MHz must be used, push Antenna Cable Plug into Antenna Jack on the Back Panel, then turn it clockwise tightly outside the Ring Screw.

PRIMARY POWER CONNECTION

You must use connecting wire included in this model. Connect to Battery (13.8V) primary wire of your car, not from another Primary Power Source, and be make sure your connecting wire is in right position (Positive or Negative), then push Power Plug into Power Socket on the Back Panel.

DELTA TUNE SWITCH

Flipping this switch to, or changes the receiver frequency and permits more accurate tuning of stations that might be slightly off frequency.

The center position of this switch is the center of the channel frequency.

ANL SWITCH

The ANL switch is used to turn the ANL circuits ON and OFF. Normally, when driving, or, if stopped in traffic, it would be advisable to have the ANL switch ON because of the strong ignition noise present. If, however, you are stopped on a quiet road, turning the ANL switch OFF may improve very weak signal reception.

OPERATING PROCEDURE – RECEIVE

1. The PA-CB switch should be in the CB position.
2. Turn the power on by turning the ON-OFF volume control clockwise. Adjust volume control to a comfortable listening level.
3. Turn the channel selector to the desired channel.
4. While listening to background noise (wait until the channel is clear if signals are present), adjust the SQUELCH CONTROL until the background noise JUST disappears. The Receiver will remain quiet until a signal is received that is greater in strength than the background noise. Be careful not to advance the SQUELCH CONTROL further than is necessary to quieten the background noise, or weak signals may not be heard.

5. The DELTA TUNE SWITCH should be adjusted, when necessary, to tune to signals that may not be exactly on frequency.

OPERATING PROCEDURE – TRANSMIT

1. Select the desired channel.
2. If the channel is clear, press the press-to-talk switch on the microphone. Hold the microphone close to, but to the side of your mouth, and speak in a normal voice. The red transmit lamp will light and fluctuate as you speak, indicating modulation.

GENERAL SPECIFICATIONS

Channels	: 23 Crystal-Controlled
Semiconductor	: Transistor 23 Diode 14 Varistor 1 Zenner 2
Antenna Impedance	: 50 Ohm
Primary Power	: Input Voltage 13.8V DC (Negative)
Dimensions:	: 7½"(W) x 2¼"(H) x 6⅜"(D)
Weight	: 3.52 pounds with Microphone

RECEIVER

Frequency Range	: 26.965 MHz-27.255 MHz.
Sensitivity	: 0.5 μ V at 6 db s/n
Selectivity	: 6 db band width 5 KHz.
Spurious Rejection	: 70 db minimum
Squelch Range	: Adjustable from 1 μ V-1,000 μ V
1st I.F. Frequency	: 10 MHz (For center frequency)
2nd I.F. Frequency	: 455 KHz
P.A. Maximum Audio Out Power	: 4W
Audio Output Power for 10%	: 3.5W
Speaker	: 3.5"

TRANSMITTER

Frequency Range	: 26.965 MHz-27.255 MHz.
Output Power	: 3.5W into 50 ohm with 13.8V DC power supply.
Modulation Capability	: 100%
Spurious & Harmonics Suppression:	60 db minimum

CRYSTAL COMBINATIONS

CHANNEL NO.	TRANSMITTER	RECEIVER	CHANNEL FREQUENCY
1	Q1 - Q7	Q1 - Q11	26.965 MHz
2	Q1 - Q8	Q1 - Q12	26.975
3	Q1 - Q9	Q1 - Q13	26.985
4	Q1 - Q10	Q1 - Q14	27.005
5	Q2 - Q7	Q2 - Q11	27.015
6	Q2 - Q8	Q2 - Q12	27.025
7	Q2 - Q9	Q2 - Q13	27.035
8	Q2 - Q10	Q2 - Q14	27.055
9	Q3 - Q7	Q3 - Q11	27.065
10	Q3 - Q8	Q3 - Q12	27.075
11	Q3 - Q9	Q3 - Q13	27.085
12	Q3 - Q10	Q3 - Q14	27.105
13	Q4 - Q7	Q4 - Q11	27.115
14	Q4 - Q8	Q4 - Q12	27.125
15	Q4 - Q9	Q4 - Q13	27.135
16	Q4 - Q10	Q4 - Q14	27.155
17	Q5 - Q7	Q5 - Q11	27.165
18	Q5 - Q8	Q5 - Q12	27.175
19	Q5 - Q9	Q5 - Q13	27.185
20	Q5 - Q10	Q5 - Q14	27.205
21	Q6 - Q7	Q6 - Q11	27.215
22	Q6 - Q8	Q6 - Q12	27.225
23	Q6 - Q10	Q6 - Q14	27.255

FREQUENCY SYNTHESIZING SYSTEM

CRYSTAL NO.	Os. FREQUENCY		
Q1	37.600 MHz	Q8	10.625 MHz
Q2	37.650	Q9	10.615
Q3	37.700	Q10	10.595
Q4	37.750	Q11	10.180
Q5	37.800	Q12	10.170
Q6	37.850	Q13	10.160
Q7	10.635	Q14	10.140

TRANSISTOR COMPLEMENT

Q1	2SC460	: RF Amplifier
Q2	2SC460	: 1st Receiver Mixer
Q3	2SC460	: 2nd Receiver Mixer
Q4	2SC460	: 1st IF Amplifier
Q5	2SC460	: 2nd IF Amplifier
Q6	2SC458	: 1st AF Amplifier
Q7	2SC460	: 37 MHz 1st Local
Q8	2SC460	: 2nd Local Oscillator
Q9	2SA844	: RX/TX Switching
Q10	2SC458	: Squelch Amplifier
Q11	2SA844	: Squelch Amplifier
Q12	2SC458	: Mike Amplifier

Q13	2SD467	: 2nd AF Amplifier
Q14	2SC1162WT	: AF Power Amplifier
Q15	2SC1162	: AF Power Amplifier
Q16	2SC460	: Transmit Oscillator
Q17	2SC460	: Transmit Mixer
Q18	2SC460	: Transmit Buffer
Q19	2SC2028	: Transmit Driver
Q20	2SC2029	: Transmit Final
Q21	2SC458	: RX/TX Switching
Q22	2SA844	: Modulation Limiter
Q23	2SC458	: Modulation Limiter

DIODE COMPLEMENT

D1	HV80	: Receiver RF Amplifier Protector
D2	HV80	: Receiver RF Amplifier Protector
D3	IN60	: AGC Detector
D4	IN60	: S Meter
D5	IN60	: AM Detector
D6	IN60	: AM Detector
D7	HV80	: A.N.L.
D8	HV80	: Squetch Switching
D9	HZ9	: Voltage Regulator
D10	HZ9	: Voltage Regulator
D11	HV80	: Varistor
D12	VO6	: Modulation Stabilizer
D13	HV80	: Power Meter
D14	HV80	: Modulation Limiter
D15	HV80	: Modulation Limiter
D16	HV80	: Mode Switching
D17	HV80	: Mode Switching

COIL COMPLEMENT

L1	LA-4	: Antenna Coil Receiver
L2	LA-5	: RF Coil Receiver
L3	L14	: 1st IFT 10.7 MHz
L4	L15	: 1st IFT 10.7 MHz
L5	9C	: 2nd Second IFT 455 KHz
L6	10C	: 2nd IFT 455 KHz
L7	3C	: 2nd IFT 455 KHz
L8	LO-3	: 1st Oscillator Coil
L9	LT-1	: Transmitter Mixing Band Pass Filter Coil
L10	LT-1	: Transmitter Mixing Band Pass Filter Coil
L11	LT-2	: Transmitter Buffer Coil
L12	LT-3	: Transmitter Drive Coil
L13	LT-4	: Final Transistor Tank Coil
L14	LT-5	: Band Pass Filter Coil
L15	LT-6	: Harmonics Trap Coil
L16	LT-6	: Harmonics Trap Coil
L17	LCH-4	: Delta Tuning
L18	LT-1	: Transmitter Mixing Band Pass Filter Coil
L19	LCH-3	: Final Transistor Base Choke Coil
L20	LCH-2	: Driver Transistor RF Choke Coil
L21	LCH-4	: Final Transistor Collector RF Choke Coil

TRANSFORMER COMPLEMENT

T1	TCH-2	: Line AF Filter
T2	TI-2	: AF Input Transformer
T3	TO-2	: Power B Modulation Transformer

COILS

L1	LA-4	L12	LT-3
L2	LA-5	L13	LT-4
L3	L14	L14	LT-5
L4	L15	L15	LT-6
L5	9C	L16	LT-6
L6	10C	L17	LCH-4
L7	3C	L18	LT-1
L8	LO-3	L19	LCH-3
L9	LT-1	L20	LCH-2
L10	LT-1	L21	LCH-4
L11	LT-2		

TRANSISTORS

Q1	2SC460	Q13	2SD467
Q2	2SC460	Q14	2SC1162WT
Q3	2SC460	Q15	2SC1162
Q4	2SC460	Q16	2SC460
Q5	2SC460	Q17	2SC460
Q6	2SC458	Q18	2SC460
Q7	2SC460	Q19	2SC2028
Q8	2SC460	Q20	2SC2029
Q9	2SA844	Q21	2SC458
Q10	2SC458	Q22	2SA844
Q11	2SC1675	Q23	2SC458
Q12	2SC458		

DIODES

D1	HV80	D10	HZ9
D2	HV80	D11	HV80
D3	1N60	D12	VO6
D4	1N60	D13	HV80
D5	1N60	D14	HV80
D6	1N60	D15	HV80
D7	HV80	D16	HV80
D8	HV80	D17	HV80
D9	HZ9		

TRANSFORMERS

T1	TCH-2
T2	TI-2
T3	TO-2

RESISTORS

R1	6.8K	R42	100
R2	1K	R43	100
R3	10K	R44	56K
R4	270	R45	3.3K
R5	1K	R46	1.5K
R6	6.8	R47	10
R7	1K	R48	100
R8	680	R49	150
R9	22K	R50	33K
R10	10K	R51	5.6K
R11	6.8K	R52	1K
R12	560	R53	4.7
R13	100K	R54	33K
R14	680	R55	6.8K
R15	1.5K	R56	100
R16	2.2K	R57	100
R17	1K	R58	220
R18	560	R59	1.5K
R19	680	R60	0.5 2W
R20	22K	R61	6.8K
R21	4.7K	R62	47K
R22	560	R63	220
R23	680	R64	100
R24	33K	R65	6.8K
R25	4.7K	R66	68K
R26	100K	R67	100
R27	68K	R68	6.8K
R28	100K	R69	56K
R29	100K	R70	100
R30	33K	R71	680
R31	5.6K	R72	50
R32	1K	R73	220
R33	4.7K	R74	2.2K
R34	8 2W	R75	150
R35	3.3K	R76	1.5K
R36	22K	R77	1K
R37	100	R78	1K
R38	4.7K	R79	1K
R39	330	R80	1K
R40	5.6K	R81	10K
R41	18K	R82	150

VARIABLE RESISTORS

VR2	Semi-Variable Resistor 10K	VR6	Variable Resistor 10K
VR3	Semi-Variable Resistor 10K	VR7	Semi-Variable Resistor 10K
VR4	Semi-Variable Resistor 2K	VR8	Semi-Variable Resistor 100K
VR5	Variable Resistor 10K		

ELECTROLYTIC CAPACITORS

C27	10	C56	4.7
C29	0.5	C57	10
C33	10	C59	220
C34	4.7	C82	100
C48	4.7	C101	1
C49	10	C102	1
C50	100	C103	500
C55	10		

SOLID CAPACITORS

C1	30P	C11	0.02
C2	25P	C12	3P
C3	0.01	C13	0.01
C4	0.01	C14	0.02
C5	0.02	C15	30P
C6	0.02	C16	0.02
C7	0.02	C17	0.01
C8	0.01	C18	0.03
C9	20P	C19	0.02
C10	0.02	C20	0.01

SOLID CAPACITORS

C21	0.03	C60	0.03
C22	0.02	C61	0.03
C23	100P	C62	0.1
C24	0.01	C63	0.01
C25	0.02	C64	0.02
C26	0.01	C65	0.01
C28	0.01	C66	500P
C30	0.03	C67	0.02
C31	1	C68	150P
C32	500P	C69	30P
C35	0.02	C70	140P
C36	0.02	C71	0.02
C37	0.01	C72	0.02
C38	100P	C73	0.02
C39	0.02	C74	3P
C40	47	C75	140P
C41	15P	C76	3P
C42	0.02	C77	140P
C43	60P	C78	0.02
C44	500P	C79	30P
C45	150P	C80	0.02
C46	0.02	C81	70P
C47	0.01	C83	50P
C51	47	C84	0.02
C52	0.02	C85	30P
C53	0.04	C86	0.02
C54	0.01	C87	40P
C58	0.01	C88	350P

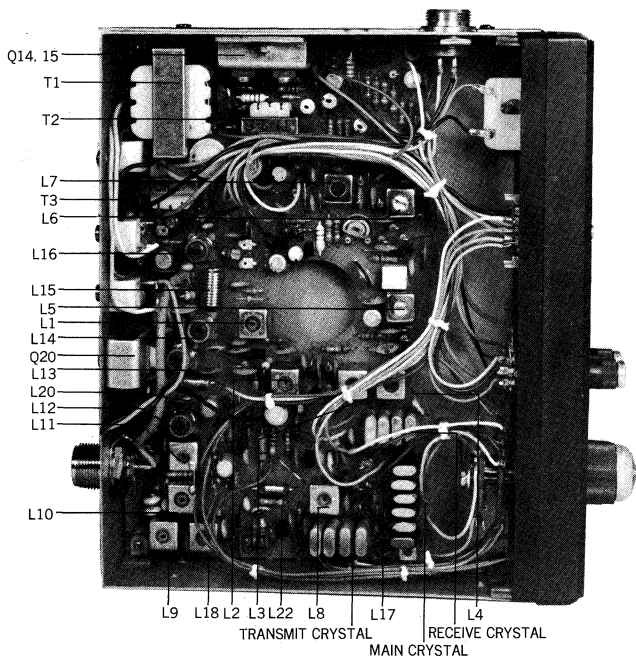
C89	0.02	C96	3P
C90	100P	C97	100P
C91	0.02	C98	30P
C92	0.02	C99	0.01
C93	350	C100	2.2
C94	300P	C104	0.04
C95	0.01	C105	0.04

MISCELLANEOUS PARTS

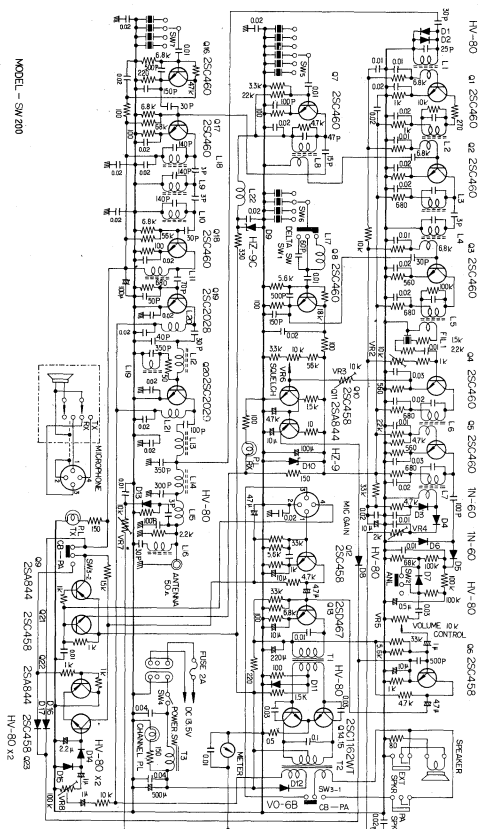
Slide Type Switch (DELTA TUNING)
 Slide Type Switch (A.N.L.)
 Slide Type Switch (CB-PA)
 Slide Type Switch (POWER)
 Rotary Switch (CHANNEL)

Ant Coaxial Jack
 4 pim Jack (Microphone)
 Ext. Sp. Jack & P.A. Jack
 Microphone
 S/RF Meter
 Speaker
 Pilot Lamp
 3 pin Connector
 3 pin DC power Cord with Fuse Holder
 Fuse 2A
 Printed Chassis Board
 Wire Lead
 Cabinet Case (A) Uppwer Cover
 Cabinet Case (B) Lower Cover
 Front Panel
 Chassis Frame
 Channel Knob
 Volume & Squelch Knob
 (Front plate (A)) Brand Plate
 Front Plate (B)
 Channel Indicator
 F.C.C. Tag
 Warning Label
 Lamp Lense
 Rubber Bushing
 Mounting Bracket
 Cabinet Case Mounting Holder
 Microphone, Hanger

PARTS LOCATION



SCHEMATIC DIAGRAM SIDEWINDER 2



MODEL - SW 200

HV-50 X2

Sidewinder International Inc., Ltd.

6440 Warren Drive
Norcross, Georgia 30071

Printed in Japan