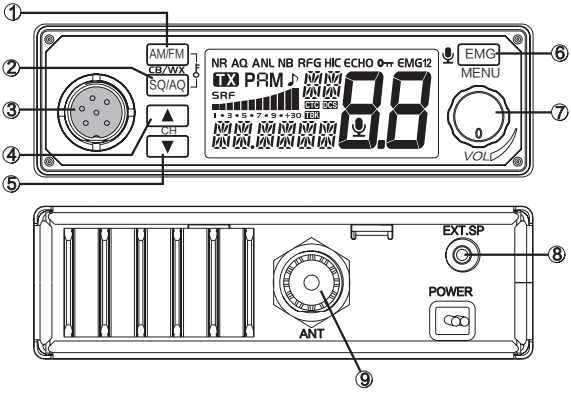
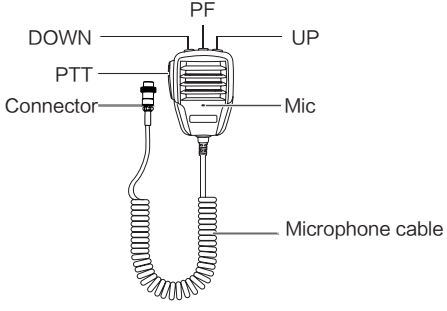
CB-500

Instruction Manual

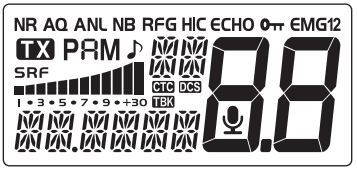
1. GETTING ACQUAINTED



1	AM/FM Mode Select ~ CB/WX ~ [Keypad lock]
2	Squelch Control ~ SQ/ASQ Switch ~ [Keypad lock]
3	Microphone Plug
4	Channel Up Selector ~ Scan On
5	Channel Down Selector ~ Scan On
6	Emergency Channel ~ VOX On/Off ~ Menu
7	Power On/Off ~ Volume Control
8	External Speaker Jack
9	Antenna Jack



2. LCD



NR NR function is activated

AQ ASQ function is activated

ANL ANL filter is activated

NB NB filter is activated

RFG RF GAIN function activated

HIC HI-CUT filter is activated

ECHO ECHO function is activated

EMG12 Emergency Channel (1 or 2)

PR PA mode selected

AM AM mode selected

FM FM mode selected

TX Indicates Transmission

♪ ROGER BEEP function is activated

CTC CTCSS is used on the active channel

DCS DCS is used on the active channel

TBK TALKBACK function activated

VOX function is activated

The Channel is stored in the Scan Skip memory

Indicates the Frequency Band or WX mode

88 Indicates the active channel

SRF 1 • 3 • 5 • 7 • 9 • +30 TX and RX bargraph

Alert function activated

Indicates Frequency, Menu items or status.

3. HOW TO USE THIS RADIO

3.1 Power ON/OFF the Radio

(1) Turn VOL knob clockwise to power ON the radio, the LCD display illuminates and then displays the selected channel number.

(2) Turn VOL switch fully anti-clockwise, the radio is powered OFF.

Note: *The radio support 12/24V DC power supply.*

3.2 Volume Control

(1) Turn clockwise to increase volume, anti-clockwise to decrease volume.

3.3 Channel Control

(1) Short press [▲] / [▼] keys on the unit or **UP**/**DN** keys on the microphone to change channels by one step.

(2) Hold [▲] / [▼] keys on the unit or **UP**/**DN** keys on the microphone to change channels quickly.

3.4 Squelch Level Control ~ SQ/AQ Control

※**Squelch Level Control (short press)**

(1) Short press [SQ/AQ] key, LCD shows "SQL-- XX" for 10 seconds which is the squelch level. There are 10 squelch levels available. The higher the number, the higher the squelch setting will be.

(2) Short press [▲] / [▼] keys on the unit or **UP**/**DN** keys on the microphone to change squelch level.

(3) Long press [▲] / [▼] keys on the unit or **UP**/**DN** keys on the microphone to change the squelch level quickly.

(4) Short press [SQ/AQ] or wait for 10 seconds to store and exit.

Note: *When higher SQ levels are selected, a stronger signal is required to open the radio mute, allowing audio to be heard from the speaker.*

※**ASQ Control (long press)**

(1) Long press [SQ/AQ] key, until LCD displays "**AQ**", the ASQ function is turned on.

(2) Short press [SQ/AQ] key, LCD shows "ASQ-- XX" for 10 seconds which is the Automatic Squelch level. There are 09 levels available. The higher the number, the higher the ASQ squelch setting will be.

(3) Short press [▲] / [▼] keys on the unit or **UP**/**DN** keys on the microphone to change automatic squelch level.

(4) Long press [▲] / [▼] keys on the unit or **UP**/**DN** keys on the microphone to change the automatic squelch level quickly.

(5) Short press [SQ/AQ] key or wait for 10 seconds to store and exit.

(6) Long press [SQ/AQ] key again to turn on SQL function.

Note: *When higher ASQ levels are selected, a stronger signal is required to open the radio mute, allowing audio to be heard from the speaker.*

3.5 AM/FM ~ CB/WX ~ PA

※**AM/FM (short press)**

(1) Short press [AM/FM] key to switch modulation mode between AM or FM.

(2) The LCD displays the selected mode.

※**CB/WX (long press)**

(1) Long press [AM/FM] key for over 2 seconds to alternate between CB or WX modes. "WX" appears on the LCD.

(2) When the WX mode is activated, press [▲] / [▼] keys on the unit or **UP/DN** keys on the microphone to change weather channels.

※**PA (PTT + AM/FM)**

(1) Press and hold the **PTT** switch.

(2) Short press [AM/FM] key to alternate between CB and PA mode.

(3) When the PA mode is activated, the modulation of the microphone and the received signal are sent to the internal loudspeaker or external optional loudspeaker connected to jack EXT.SP. " PA " blinks on the LCD, alternating with the modulation mode (AM or FM).

(4) Turn the VOL knob to adjust the PA volume.

3.6 KEY LOCK (AM/FM + SQ/AQ)

(1) Long press simultaneously [AM/FM] and [SQ/AQ] keys for over 3 seconds to lock the keys. " 🔑 " appears on the LCD.

(2) Long press simultaneously [AM/FM] and [SQ/AQ] keys for over 3 seconds again to unlock the keys. " 🔑" disappears from the LCD.

Note: *In KEY LOCK mode, only the PTT key is valid.*

3.7 Emergency Channels ~ MENU ~ VOX

※**Emergency Channels (short press)**

(1) First press [EMG] key to choose the first programmed emergency channel, " EMG1 " appears on the LCD.

(2) Second press [EMG] key to choose the second programmed emergency channel, " EMG 2 " appears on the LCD.

(3) Third press [EMG] key to return to last used normal channel.

Note: *The default Emergency Channels are channel 09 and channel 19*
See Menu– Emergency Channel Set, page 11 for Emergency Channel configuration.

※**MENU (long press)**

Long press [EMG] key to enter the Menu.

※**VOX (PTT + EMG)**

(1) Press and hold the **PTT** switch.

(2) Short press [EMG] key to activate or deactivate the VOX function, " 🎙 " appears on the LCD when the VOX function is active.

※**Scan Skip (long press - only valid if the SCAN function is activated)**

This function allows you to skip a channel found by the SCAN function. When the scan stops on an unwanted channel, press and hold the [EMG] key to store this channel in the SCAN SKIP memory. The channel will no longer be scanned.

Note: *If you want to memorize/erase the current channel from the SCAN SKIP memory, you can enter the MENU and select the SC.SKIP menu option.*

3.8 Scan Function

※**CB Channels Scan (very long press)**

(1) In CB mode, press and hold [▲] / [▼] keys on the unit or **UP**/**DN** keys on the microphone for 7 seconds or until a beep sounds to start CB SCAN function. When the CB SCAN function is active, " SCAN " blinks on the LCD.

(2) Short press [▲] / [▼] keys on the unit or **UP**/**DN** keys on the microphone to change the scan direction.

(3) Short press [AM/FM] key to change mode, short press **PTT** switch to exit scan.

※**WX Channels Scan (very long press)**

(1) In WX mode, press and hold [▲] / [▼] keys on the unit or **UP/DN** keys on the microphone for 3 seconds, or until a beep sounds, to start WX Scan function.

When the WX Scan function is active, " SCAN " blinks on the LCD.

(2) Short press [▲] / [▼] keys on the unit or **UP/DN** keys on the microphone to change the scan direction.

(3) Long press [EMG] key to exit scan.

3.9 Frequency Band Selection

(1) Press and hold [AM/FM] key while powering ON the radio, the current Frequency Band blinks on the LCD.

(2) Short press [▲] / [▼] keys on the unit or **UP/DN** keys on the microphone to choose the desired Frequency Band.

(3) When the Frequency Band is selected, power OFF and power ON again.

Note: *This function is valid only when the radio operates in CB mode 1 or CB mode 2. All Citizen Band "Multi−Norms" are available. If operating in HAM mode or HF mode, you can enter the BAND menu and select the option to change the Frequency Band (see page 9).*

3.10 External Speaker Installation

Choose an optional 8Ω external speaker with 3.5 mm mono connector.

3.11 Menu Operations

(1) Long press [EMG] key to enter the menu.

(2) Short press [▲] / [▼] keys on the unit or **UP/DN** keys on the microphone to select the menu to adjust.

(3) Short press [EMG] key to validate, the parameter blinks on the LCD.

(4) Short press [▲] / [▼] keys on the unit or **UP/DN** keys on the microphone to modify the value of the parameter.

(5) Short press [EMG] key again to store the chosen value. The parameter stops blinking and if the function has more than one parameter, the next parameter blinks.

(6) Press **PTT** switch, or long press [EMG] key, or wait for 10 seconds to store and exit the menu.

LCD display	Function detail	Setting details
COLOR	Backlight color setting	or (orange/default), Gr (green), bL (blue), CY (cyan), YE (yellow), PU (purple), CL (white)
BRIGHT	Backlight brighless setting	oF , 1 ~ 9 Default : 5
KEY BP	Beep sound setting	on : turn on beep sound oF : turn off beep sound Default : on
ROG BP	Roger beep sound setting	oF (default), 1 ~ 6 oF : turn off RB sound function.
Mic.GAIN	Microphone gain control	Level: 1 ~ 9 Default : 5
Mic.TYPE	Microphone type setting	EL : electret (default) dY : dynamic
SP.PATH	Speaker volume path setting	Int : the VOL knob affects the internal speaker volume. (default) MIC : the VOL knob affects the microphone built-in speaker volume. BOTH : the VOL knob affects both the internal speaker and microphone built-in speaker volume.
SC.TYPE	Scan type setting	SQ : squelch scan (default) t 1 : time scan
SC.SKIP	Scan skip setting	oF : erase the current channel from the SCAN SKIP memory, The dot between the two channel digits disappears from the LCD (default) on : memorize the current channel into the SCAN SKIP memory. When a channel is stored in the memory, The dot between the two channel digits appears on the LCD close to the channel number

LCD display	Function detail	Setting details
VOXSET	VOX sensitivity level setting	L : 1 ~ 9 Default : 3
	VOX delay time setting	T : 1 ~ 9 Default : 4
TALKBAK	Talkback level setting	oF , 1 ~ 9 Note : when the function is activate, press and hold the PTT switch then press [▲] / [▼] keys on the unit to crease / decrease the volume level of the TALKBACK.
TOTSET	Time out timer	oF , 1 ~ 10 Min Default : 3
ANL/NB	ANL/NB filters setting	oF : turn off the filters (default) AL : turn on ANL filter (In AM mode only) nb : turn on NB filter nA : turn on ANL + NB filters
HI-CUT	HI-CUT filter setting	oF : turn off HI-CUT filter (default) on : turn on HI-CUT filter
NRSET	RX noise reduction level setting	RX : oF , 1 ~ 5 Default : 1
	TX noise reduction level setting	TX : oF , 1 ~ 5 Default : 1
ECHO	ECHO function setting	oF : turn off ECHO function (default) on : turn on ECHO function

LCD display	Function detail	Setting details
ECHO	ECHO volume level setting	L : 1 ~ 32 Default : 28
	ECHO delay time setting	T : 1 ~ 32 Default : 28
ALERT	ALERT function setting	oF : turn off ALERT function (default) on : turn on ALERT function
RF.GAIN	RF gain level control	oF (default) , AU , 3 、 6 、 9 ~ 48

3.12 CTCSS/DCS SET

(1) Long press [EMG] key to enter the menu.

(2) Short press [▲] / [▼] keys on the unit or **UP**/**DN** keys on the microphone to select the CTT menu.

(3) Short press [EMG] key to confirm, the operating mode blinks on the LCD (TX or MIC).

(4) Short press [▲] / [▼] keys on the unit or **UP**/**DN** keys on the microphone to select the operating mode.

TX : means that the code used will be identical for transmission (TX) and for reception (RX).

MIC : means that the user can use one code (or OFF = no code) for transmission

(TX) and another (or OFF = no code) for reception (RX).

Identical mode TX

(5) Short press [EMG] key make the code type blink. (**CTC** , **DCS** , or oF not set)

(6) Short press [▲] / [▼] keys on the unit or **UP**/**DN** keys on the microphone to select the code type.

(7) Short press [EMG] key to confirm the code type. The code value flashes. (unless oF has been selected)

(8) Short press [▲] / [▼] keys on the unit or **UP**/**DN** keys on the microphone to select the code (form 01 (01) to 38 (38) for CTCSS and 01 (01) to 100 (00) to 104 (04) for DCS).

(9) Short press [EMG] key to confirm the selected code.

Identical mode MF

(5) Short press [EMG] key make the type blink. (RX or TX)

(6) Short press [▲] / [▼] keys on the unit or **UP**/**DN** keys on the microphone to select the RX or TX type.

(7) Short press [EMG] key to confirm the type. The code type flashes. (**CTC** , **DCS** , or oF not set)

(8) Short press [▲] / [▼] keys on the unit or **UP**/**DN** keys on the microphone to select the code type.

(9) Short press [EMG] key to confirm the code type. The code value flashes. (unless oF has been selected)

(10) Short press [▲] / [▼] keys on the unit or **UP**/**DN** keys on the microphone to select the code (form 01 (01) to 38 (38) for CTCSS and 01 (01) to 100 (00) to 104 (04) for DCS).

(11) Short press [EMG] key to confirm the selected code. The unit return to point 5, for set the second type.

(12) If you don't need to set other parameters, press **PTT** switch or long press [EMG] key or wait for 10 seconds to store and exit MENU.

3.13 Emergency Channel Setting

(1) Long press [EMG] key to enter the menu.

(2) Short press [▲] / [▼] keys on the unit or **UP**/**DN** keys on the microphone to select the EMG 1 or EMG 2 menu.

(3) Short press [EMG] key. The emergency channel blinks on LCD.

(4) Short press [▲] / [▼] keys on the unit or **UP**/**DN** keys on the microphone to select the emergency channel.

(5) Short press [EMG] key to validate the emergency channel. The emergency channel stops blinking. The mode blinks on LCD.

(6) Short press [▲] / [▼] keys on the unit or **UP**/**DN** keys on the microphone to select the mode AM or FM.

(7) Short press [EMG] key to validate the mode. The mode stops blinking.

(8) Press **PTT** switch or long press [EMG] key or wait for 10 seconds to store and exit MENU.

3.14 Restore Factory Default

(1) Long press [EMG] key to enter the menu.

(2) Short press [▲] / [▼] keys on the unit or **UP**/**DN** keys on the microphone to select the RE SET menu.

(3) Short press [EMG] key to validate, " RL " blinks on the LCD.

(4) Long press [EMG] key until " RL " stops blinking.

(5) Release [EMG] key, the unit automatically reseted.

3.15 Self Define PF Key Function

(1) Long press [EMG] key to enter the menu.

(2) Short press [▲] / [▼] keys on the unit or **UP**/**DN** keys on the microphone to select the PF.KEY menu.

(3) Short press [EMG] key. The functions blinks on the LCD.

(4) Short press [▲] / [▼] keys on the unit or **UP**/**DN** keys on the microphone to select the self denfine **PF** key function.

(5) Short press [EMG] key again to store the chosen value.

(6) Press **PTT** switch or long press [EMG] key or wait for 10 seconds to store and exit MENU.

NO.	LCD display	1st Function (Short Press)	2nd Function (Long Press)
1	nr	Allows to activate/ deactivate the NR function when the menu value other than oF has been stored, otherwise the LCD indicates NR SET.	Quickly enter the NR menu.
2	ECHo	Allows to activate/ deactivate the ECHO function.	Quickly enter the ECHO menu.
3	RFG	Quickly enter the RFG menu.	
4	cdt	Allows to activate/ deactivate the NR function when the menu value other than oF has been stored, otherwise the LCD indicates NR SET.	Quickly enter the CTCSS/DCS code menu.
5	bP	Allows to activate/ deactivate the KEY BEEP function	
6	rb	Quickly enter the ROGER BEEP menu.	
7	MICG	Quickly enter the MIC GAIN menu.	
8		Allows to activate/ deactivate the VOX function.	Quickly enter the VOX menu.
9	tbk	Allows to activate/ deactivate the TALKBACK function. Note : when the function is activate, press and hold the PTT switch then press [▲] / [▼] keys on the unit to crease / decrease the volume level of the TALKBACK.	
10	NBAL	Allows to activate/ deactivate the filters in this order: → **ANL → NB → ANL+NB → OFF** ┐	
11	HiCt	Allows to activate/ deactivate the HI-CUT filter function.	
12	SC	Allows to activate/ deactivate the SCAN function.	

4. CTCSS TONE LIST

No.	Freq. (Hz)	No.	Freq. (Hz)	No.	Freq. (Hz)	No.	Freq. (Hz)
01	67.0	11	97.4	21	136.5	31	192.8
02	71.9	12	100.0	22	141.3	32	203.5
03	74.4	13	103.5	23	146.2	33	210.7
04	77.0	14	107.2	24	151.4	34	218.1
05	79.7	15	110.9	25	156.7	35	225.7
06	82.5	16	114.8	26	162.2	36	233.6
07	85.4	17	118.8	27	167.9	37	241.8
08	88.5	18	123.0	28	173.8	38	250.3
09	91.5	19	127.3	29	179.9		
10	94.8	20	131.8	30	186.2		

5.DCS CODE LIST

Code No.	DCS (Octal)	Code No.	DCS (Octal)	Code No.	DCS (Octal)	Code No.	DCS (Octal)
1	023	27	152	53	311	79	466
2	025	28	155	54	315	80	503
3	026	29	156	55	325	81	506
4	031	30	162	56	331	82	516
5	032	31	165	57	332	83	523
6	036	32	172	58	343	84	526
7	043	33	174	59	346	85	532
8	047	34	205	60	351	86	546
9	051	35	212	61	356	87	565
10	053	36	223	62	364	88	606
11	054	37	225	63	365	89	612
12	065	38	226	64	371	90	624
13	071	39	243	65	411	91	627
14	072	40	244	66	412	92	631
15	073	41	245	67	413	93	632
16	074	42	246	68	423	94	654
17	114	43	251	69	431	95	662
18	115	44	252	70	432	96	664
19	116	45	255	71	445	97	703
20	122	46	261	72	446	98	712
21	125	47	263	73	452	99	723
22	131	48	265	74	454	100	731
23	132	49	266	75	455	101	732
24	134	50	271	76	462	102	734
25	143	51	274	77	464	103	743
26	145	52	306	78	465	104	754

6. SPECIFICATION

GENERAL		
Modulation Mode		AM/FM
Frequency Range		26.565−27.99125MHz
Frequency Tolerance		±5.0ppm
Input Voltage		12/24V
Dimensions		185x124x38mm
Weight		620g
Operating Temperature Range		−20℃ to +50℃
Current Drain	Transmit	3A MAX
	Receive	Squelched 0.3A
	VOL Max	0.7A
Antenna Connector		UHF, SO−239
TRANSMITTER		
Power Output		4 Watts FM/AM
Transmission interference		inferior to 4nW
Frequency Response		300−3000Hz
Modulated signal distortion		inferior to 5%
Output Impedance		50 ohms
RECEIVER		
Sensitivity		Less than 1uV for 10dB(S+N)/N
Image Rejection		70dB
Adjacent Channel Rejection		60dB
IF Frequencies		1st 10.695MHz
		2nd 455KHz
Automatic Gain Control(AGC)		Less than 10dB change in audio
		Output for inputs from 10 to 50000uV
Squelch		less than 1uV
Audio Output Power		2Watts at 8Ω less than 10% distortion
Frequency Response		300−3000Hz

Radioddity

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