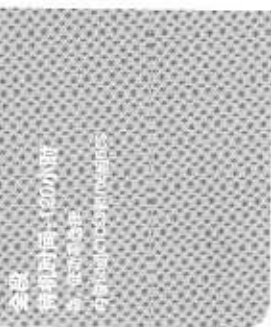


FDL
VHF/UHF FM Transceiver



FD-160A/460A

Computer/manual programme
RF high power output 5W/4W



使用说明书

USER'S MANUAL

FDL
VHF/UHF FM Transceiver



FD-160A/460A

Computer/manual programme
RF high power output 5W/4W



Thank you

We are grateful for your purchase of this **FZC** transceiver — FD-160A/1460A.

We believe this is easy-to-use and stylish transceiver will provide you with dependable and reliable communications.

PRECAUTIONS

Observe the following precautions to prevent fire, personal injury, and transceiver damage.

- Do not modify or attempt to adjust this transceiver for any reason. Refer service to qualified technicians only.
- Do not expose the transceiver to long periods of direct sunlight; no place it close to heating appliances.
- Do not operate the transceiver in a gasoline service station.
- Do not place the transceiver in excessively dusty, humid, and/or wet areas.
- If an abnormal odor or smoke is detected coming from the transceiver, switch OFF the power immediately and remove the battery pack from the transceiver. Contact

FZC dealer.

- To prevent the transceiver damage, please use power supply voltage between 5.5---7.0V when you use DC power supply.

FUNCTIONS AND FEATURES

1. VHF (136-174MHz)/UHF (400-470MHz)
2. 99 Channels
3. 25KHz/12.5KHz Compatibility
4. CTCSS/DCS
5. HI/Lo power select (1W~5W)
6. Standby time: 120hr
7. Adjustable squelch level: 0~9
8. Computer/manual programme

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UNPACKING AND CHECKING EQUIPMENT

Carefully unpack the transceiver, we recommend that you identify the items listed in the following table before discarding the packing material. If any items are missing or have been damaged during shipment, file a claim with the carrier immediately.

Supplied accessories

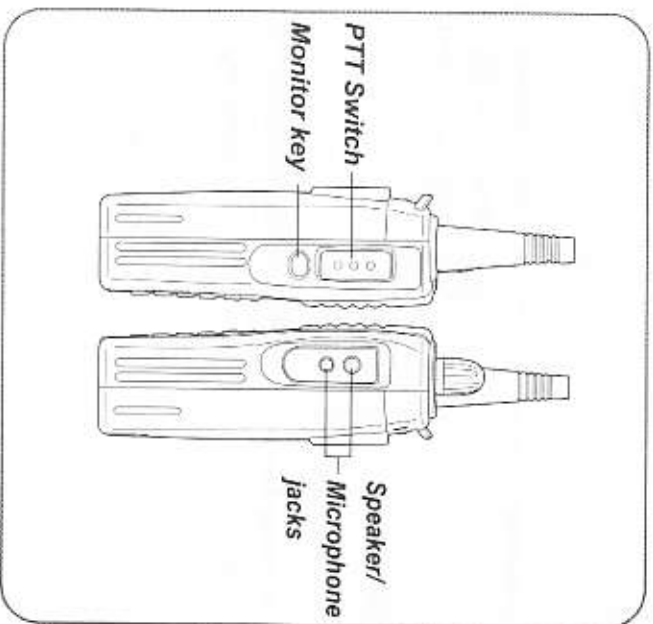
ITEM	QUANTITY
Antenna	1
Battery pack	1
Battery charger	1
Belt clip	1
Instruction manual	1

Optional accessories

ITEM
Headset
Programming cable
Programming software
Car charger

01 GETTING ACQUAINTED





LCD DISPLAY

In the LCD DISPLAY, you can find the icons listed in the following table:

Sometimes, maybe you can not think of the signification of these icons or you do not know how to operate the transceiver. Under these circumstances, you will find that they are very useful.



ICON	EXPLANTION
T	Signal strength indicator
A	Signal scan indicator
←	Turn the speaker on
↻	Turn key sound on
R	Reverse frequency
H	High power output
L	Lower power output
S	Battery save
KL	Keypad Lock
BT	Battery indicator
CT	CTCSS
DCS	DCS

Displays the working frequency and other function selection.

Displays the memory channel number in the MR mode.

Displays the HLALO power output while transmitting.

02 BASIC OPERATION

Installing the Antenna

Screw the antenna into the SMA connector on the top of the transceiver by holding the antenna at its base and turning it clockwise until secure.

Power switch/Volume control

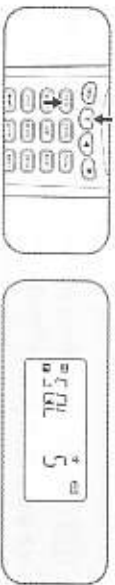
1. Turn clockwise until a click sound, to switch the transceiver ON. And LCD display shows the battery voltage.
2. Turn counterclockwise until a click sound, to switch the transceiver OFF.

Note: Rotate Power switch/Volume control to adjust the volume level.



Adjusting the Squelch

1. Press [F] + [**SQL**] key.
 - LCD display shows SQL 5. (like picture displays). The SQL is level 5 from the factory.
2. Press [**SQL**] / [**SQL**] key to adjust the SQL(0-9).
 - The SQL function is designed to keep the speaker quiet when the transceiver does not receive any signal.



Transmitting

1. To call a station, press and hold the PTT switch, then speak into the microphone using your normal speaking voice.
 - Lights red while transmitting.



2. Release the PTT switch to receive.

H/L/O power select

1. Press [F] + [**SQL**] key to select H/L/O power output.
 - LCD display shows H / L / O. (like picture displays)



Note: In the communication range, if you can receive signals clearly, please select LOWER power that can decrease the amount of power used and extend the battery using time.

03 KEYPAD SHORTCUT SELECTION

1. Press [**F**] key to switch the transceiver ON, then select channel mode/frequency mode.
2. In the frequency mode, press [**MRVFO**] key to select MRVFO.

Function setting

1. Press [**F**] + [**SQL**] key to turn the squelch on, then press [**SQL**] / [**SQL**] key to adjust the SQL(0-9).

Note: press [**SQL**] / [**SQL**] key to select the setting value when you enter the function setting.

Then press **PTT** switch to confirm and auto-exit the setting.



2. Press [**F**] + [**PTT**] key to select HI/LO power, then press [**PTT**] / [**PTT**] key to select HI/L.



Note: press [**PTT**] / [**PTT**] key to select the setting value

when you enter the function setting.

Then press **PTT** switch to confirm and auto-exit the setting.

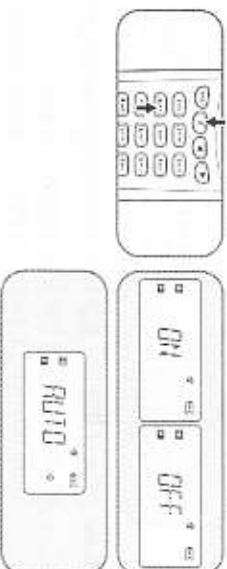
3. Press [**F**] + [**MRVFO**] key to auto-scan memory channels.



Note: press [**MRVFO**] / [**MRVFO**] to select the setting value when you enter the function setting.

Then press **PTT** switch to confirm and auto-exit the setting.

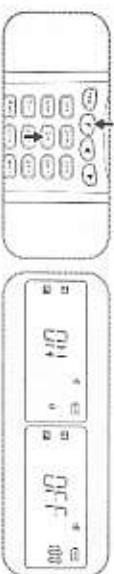
4. Press [**F**] + [**SQL**] key to turn ON/OFF the backlight lamp, then press [**SQL**] / [**SQL**] key to select ON/OFF/AUTO.



Note: press [**SQL**] / [**SQL**] key to select the setting value when you enter the function setting.

Then press **PTT** switch to confirm and auto-exit the setting.

5. Press [**F**] + [**ON**] key to turn ON/OFF key sound, then press [**OK**] / [**ENT**] key to select ON/OFF.



- Note:** press [**OK**] / [**ENT**] key to select the setting value when you enter the function setting. Then press **PTT** switch to confirm and auto-exit the setting.

6. Press [**F**] + [**MAN**] key to lock/unlock the keypad, then press [**OK**] / [**ENT**] key to select AUTO/MANUAL.



- Note:** press [**OK**] / [**ENT**] key to select the setting value when you enter the function setting. Then press **PTT** switch to confirm and auto-exit the setting.

7. Press [**F**] + [**TOT**] key to set TOT, then press [**OK**] / [**ENT**] key to select OFF~90secs.



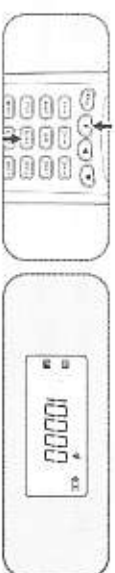
- Note:** press [**OK**] / [**ENT**] key to select the setting value when you enter the function setting. Then press **PTT** switch to confirm and auto-exit the setting.

8. Press and hold [**MAN**] key for 2secs. to lock/unlock the keypad.



VFO Operating Mode

1. Press [**F**] + [**SR**] key to set TX/RX frequency difference value. Press the number key and input your desired frequency difference value (The selection range is in the range of 00,000--99,995 MHz), then press **PTT** switch to confirm.



2. Press [**F**] + [**MEM**] key to be designed to receive CTCSS



- A. Press [**MEM**] / [**MEM**] key to select the setting value when you enter the function setting.
Then press **PTT** switch to confirm and auto-exit the setting.

- B. When you want to set DCS, please press [**F**] to select CTCSS/DCS. Then press [**MEM**] key to set DCS Normal/Inverse.

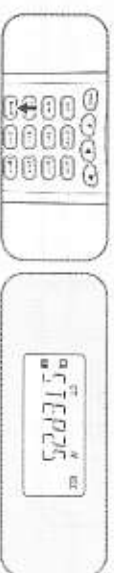
3. Press [**F**] + [**MEM**] key to be designed to transmit CTCSS.



- A. Press [**MEM**] / [**MEM**] key to select the setting value when you enter the function setting.
Then press **PTT** switch to confirm and auto-exit the setting.

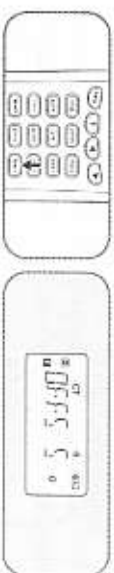
- B. When you want to set DCS, please press [**F**] key to select CTCSS/DCS. Then press [**MEM**] key to.

4. Press [**F**] + [**STEP**] key to be designed to select STEP. press [**MEM**] / [**MEM**] key to select STEP (5k/6.25k/10k/12.5k/25k) when you enter the function setting.



- Note:** press [**MEM**] / [**MEM**] key to select the setting value when enter the function setting.
Then press **PTT** switch to confirm and auto-exit the setting.

5. Press [**F**] + [**MEM**] key ,you can TX programme semi-duplex operation. Select the RX frequency you needed, and then press [**MEM**] / [**MEM**] to programme.



- Note:** press [**MEM**] / [**MEM**] key to select the setting value when enter the function setting.
Then press **PTT** switch to confirm and auto-exit the setting.

6. Press and hold [**MEM**] key for 2secs to set/cancel reverse frequency.



MR Operating Mode

1. Press [**F**] + [**MEM**] key to search TX/RX frequency difference value.



2. Press [**F**] + [**MEM**] key to search the receiving frequency/code of CTCSS/DCS



3. Press [**F**] + [**MEM**] key to search the transmitting frequency/code of CTCSS/DCS



04 MEMORY CHANNELS

In the memory channels, you can store the frequency and other common settings. In this way, you do not need to program these data again. Use simple operation, you can call your desired frequency quickly. You can store 99 channels for this transceiver.

Call memory channel

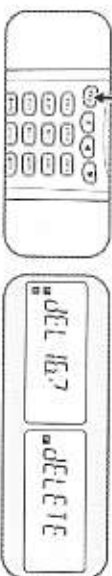
1. Select desired frequency in the VFO mode.
2. Press [**F**] key
3. Press [**MEM**] key. The LCD shows "SAVE--?"



4. Press [**MEM**] / [**MEM**] key or press number key to select desired memory channel number, then you can store this memory channel.
5. Press PTT switch to finish storing.

Deleting memory channel

1. select your desired channel.
2. switch the transceiver OFF.
3. Press [**MEM**] key, and rotate the power switch/volume control to switch the transceiver ON. The LCD shows "DEL-?"



4. Press [**MEM**] key again, then delete the selected channel and exit.

Channel display function

When you use this function, The LCD just shows memory channels for this transceiver. If you do not store channels previously, this function can not work.

1. Press [**F**] key, and rotate the power switch/volume control to turn ON/OFF this function.

05 VFO SCANNING

Scanning is used to monitor your desired frequency; you do not need to operate manually. If you know every scanning method well, the monitor function can be used efficiently.

VFO SCANNING can auto-scan each frequency (channel) from the minimum frequency (channel) to the maximum frequency (channel). Press any key except MONITOR key, if you want to cancel VFO SCANNING.

Note: Scanning can be used only when close the SQL.

The transceiver will stop scanning when received a signal. In this way, the transceiver will wait for 5 secs and continue scanning even if the signal exists.

Scanning memory channel

This function can scan all memory channels with data.

1. In the CH/MR mode, press [**F**] + [**SCAN**] key to start scanning.
2. Press any key except MONITOR key, if you want to cancel SCANNING memory channel.

Note: Scanning can be used only when at least two memory channels are stored.

Deleting all settings

1. Switch the transceiver OFF, and press [**F**] + [**MONI**] key, then turn the power switch/volume control on.
2. Rotate the power switch/volume control to switch the transceiver ON and hold for 2secs. LCD display shows "SET".
3. Input the password by digit keypad: 6668. LCD display shows "ERASE".
4. Finish deleting all storing information.

06 CTCSS/DCS TABLE

67.0	85.4	107.2	136.5	165.5	186.2	210.7	254.1
69.3	88.5	110.9	141.3	167.9	189.9	218.1	
71.9	91.5	114.8	146.2	171.3	192.8	225.7	
74.4	94.8	118.8	151.4	173.8	196.6	229.1	
77.0	97.4	123.0	156.7	177.3	199.5	233.6	
79.7	100.0	127.3	159.8	179.9	203.5	241.8	
82.5	103.5	131.8	162.2	183.5	206.5	250.3	

50 groups of CTCSS (Hz)

023	065	132	205	255	331	413	465	612	723
025	071	134	212	261	332	423	466	624	731
026	072	143	223	263	343	431	503	627	732
031	073	145	225	265	346	432	506	631	734
032	074	152	226	266	351	445	516	632	743
036	114	155	243	271	356	446	523	*645	754
043	115	156	244	274	364	452	526	654	
047	116	162	245	306	365	454	532	662	
051	122	165	246	311	371	455	546	664	
053	125	172	251	315	411	462	565	703	
054	131	174	252	325	412	464	606	712	

104+1 groups of DCS