

BelFone

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BF-3000

POWER BASE STATION/REPEATER

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Important notice:

Turn off your transceiver where usage of transceiver is forbidden. Refer service to qualified technicians only.

1. Please turn off your transceiver while parking in a gas station or a potentially explosive area.
2. Please don't keep the transceiver in a wet or dusty environment.
3. Do not modify this transceiver for any reason. It will make the warranty void and affect the performance.
4. Use a professional microphone(optional extra) when you need to speak from the repeater.

Installing the antenna:

1. Rooftop antenna must be installed at the highest point with all round visibility.
2. Vehicle antenna: please install this antenna with a magnetic base, in the middle of the car's rooftop.

Note:

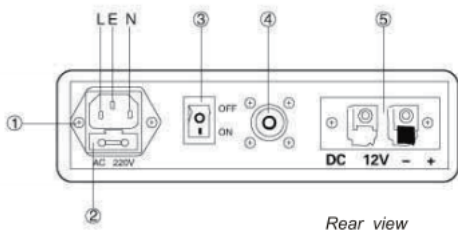
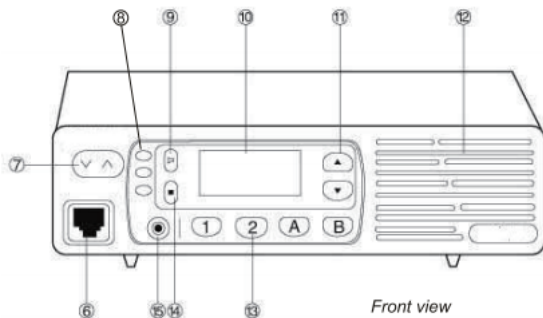
Stand clear of the antenna during transmission by at least 1 meter, It will prevent electrocution and also provide good range.

Unpacking and checking equipment:

Please carefully unpack the transceiver. We recommend you identify the items listed in the following table. If any items are missing, or have been damaged, please -

contact your BelFone dealer immediately.

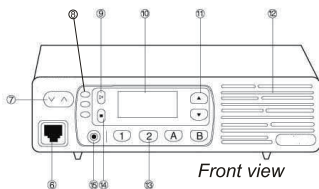
Brief introduction of functions:



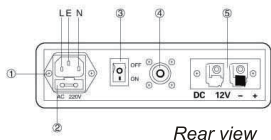
① AC 220V connection

② Fuse

- ③ Power on/off switch for 220V AC
- ④ Antenna connector
- ⑤ DC 12V connection for battery
- ⑥ Microphone jack
- ⑦ Volume increase/decrease key
- ⑧ Three LED lights

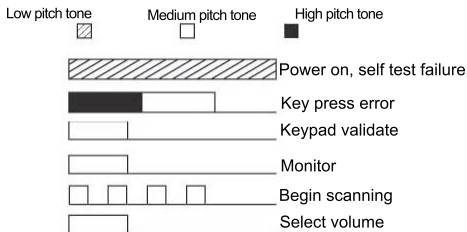


Fixed red - The transceiver is transmitting
 Fixed Yellow - Monitor mode
 Flashing yellow -Transmission failed
 Fixed green - The channel is busy
 Alternate flashing red and green - Reception/transmission failure
 All lights on - System check failure

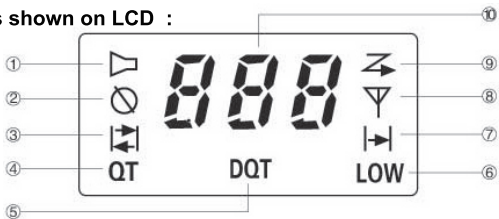


- ⑨ Monitor Key
- ⑩ LCD display, - main 3 digits for channel display and smaller icons for other functions.
- ⑪ Up/down keys for channel selection
- ⑫ Speaker
- ⑬ Keys (1, 2, 3, A, B) for selecting Preprogrammed functions
- ⑭ Function programming key
- ⑮ Spare key- (function not assigned)

Audio alarms :



Icons shown on LCD :



- ① Monitor
- ② Private talking (Scrambler mode)
- ③ Undefined Icon
- ④ QT
- ⑤ DQT
- ⑥ Transmit on low power
- ⑦ Undefined Icon
- ⑧ Relay
- ⑨ Scanning
- ⑩ Displays the channel number (001-064) or squelch level(00-09) which is in use. Use the function key to toggle the display between channel and squelch level.

Operating Basics:

BF-3000 works as a duplex radio and also as a repeater. Battery connectors (5) are provided on the rear panel to connect a battery. The repeater automatically changes over to the battery in case the 220V AC has failed. When the power is restored, the battery switches over automatically to the charging mode.

Switching power ON/OFF

When the Power switch (3) is turned on, the transceiver will enter into self test status. At the same time, you will hear a long tone of appx. 2 secs when the test is passed. A continuous audio tone indicates radio faulty and the dealer should be contacted for service. Please contact us.

Selecting the channel

Press the UP/DOWN key (11) to select the channel for communication.

Adjust the volume

Press the left side of the volume control key (7) to reduce the volume and press the right side of the key to increase the volume.

Transmitting a call

Press the Press-to-Talk button (PTT) of the microphone. For best sound quality at the receiving station, hold the microphone approximately 5-10cm from your mouth and speak normally. The LCD indicator lights red while pressing the PTT key. The received signal is re-transmitted (repeated). Please ensure proper coding channel of the other radios, else no signal will be heard.

Receiving a call:

LED lights up green during an incoming call. In relay mode, the incoming signal is re-transmitted(repeated) automatically.

Please ensure all the radios in the network have the same coding, else the communication will not be heard.

Monitor

Press monitor key smartly once to open the squelch function. LCD will display the icon and the yellow light will switch on. This operation is designed to receive the weak signal and check the presence of interfering signal from outside.

For monitoring the normal conversation, press the monitor button for appx. 3 sec. You can now hear the conversation on repeater mode. Press the monitor button smartly once to cancel the monitoring in repeater mode.

Scanning

1. Group A scanning: Press and hold the A key for about 3 sec. The transceiver will start scanning all the channels preprogrammed by the dealer in Group A.

2. Group B scanning: Press and hold the B key for about 3 sec. The transceiver will start scanning all the channels preprogrammed by the dealer in Group B.

Whenever a busy or interfering channel is encountered (in Group A or B mode), the scanning will stop. To restart the scanning function, press and hold A or B key for 3 sec.

To temporarily delete an interfering channel from the scanning mode, press and hold key A(when scanning of Group A channels is taking place) or key B(when scanning of Group B channels is taking place) for about 3 sec. The selected channel will not be

Scanned temporarily.

This deleted channel gets added into the scanning list once the power on the radio is switched off and then switch on.

Note:

Only the channels which are frequently used should be stored on Group A or B

Consult your dealer for Group programming.

1. Speech secrecy (Scrambler mode)

In speech secrecy mode, conversation can be heard but not understood by the listener. It requires the installation of scrambler cards in the repeater and the transmitting radios.

Consult your dealer for the various kinds of scrambler cards which can be purchased separately.

Note:

This function is operational only when the scrambler card is installed.

To activate the scrambler mode, press and hold the function key(14) for 3 sec. Icons on the LCD will start flashing. Then Press and hold the 1 key on the front panel for about 3 sec. The scrambler mode will be deactivated.

Refer page 5 item no. 2

2. Setting up correct Squelch level

The squelch level of the **BF-3000** repeater needs to be adjusted correctly to ensure unwanted and interfering signals are suppressed during conversation. It also ensures that the weak signal from the other radios in the user network are also heard clearly.

Press and hold the monitor key(9) for about 3 sec. Digit 00-009 will appear on the LCD. The correct level of squelch can be now selected by using the UP/DOWN key(11). The ideal setting is 05.

To exit the set up mode, press the monitor key 9 once. The LCD will show the channel number in 3 digits (eg. 001)

Auxiliary function:

Over Voltage Alarm

The transceiver will check the power voltage while it is transmitting, if the voltage is abnormal, all the indicator lights will glow steadily and the speaker emits a "Tee Tee" alarm every 2 seconds without stopping. Communication ceases when the alarm is on. Switch off the radio and contact your dealer for service support.

Adjusting Transmit Power Level

The **BF-3000** repeater has two power levels-High and Low . The power levels are programmable by the dealer using the radio software. On the LCD, the selected power level is displayed at the bottom right corner (6) on page 5

Beat Frequency Deviation

At times, when the repeater is positioned in close proximity of other repeaters, harmonics and R.f. interference are produced. It results in continuous "beat" sound in the repeater. The factory default setting is " No".

DQT and QT function

Note: This function is inactive when the Scrambler card for Speech Secrecy is installed.

DQT (Digital Quite Tone) and QT(Quite Tone) are also called as Continuous Tone Coded Squelch System(CTCSS) and Digital Coded Squelch(DCS) respectively.

When the radios and repeaters are programmed with the above coding, signals from users outside our own network are suppressed. The coding is done for radios which operate in an area like construction sites or within cities where there is a high population or users on the same frequency.

QT

QT No.	Freq [Hz]	QT No.	Freq [Hz]	QT No.	Freq [Hz]	QT No.	Freq [Hz]
1	67.0	11	94.8	21	131.8	31	186.2
2	69.3	12	97.4	22	136.5	32	192.8
3	71.9	13	100.0	23	141.3	33	203.5
4	74.4	14	103.5	24	146.2	34	210.7
5	77.0	15	107.2	25	151.4	35	218.1
6	79.7	16	110.9	26	156.7	36	225.7
7	82.5	17	114.8	27	162.2	37	233.6
8	85.4	18	118.8	28	167.9	38	241.8
9	88.5	19	123.0	29	173.8	39	250.3
10	91.5	20	127.3	30	179.9		

DQT

023	114	174	315	445	631
025	115	205	331	464	632
026	116	223	343	465	654
031	125	226	346	466	662
032	131	243	351	503	664
043	132	244	364	506	703
047	134	245	365	516	712
051	143	251	371	532	723
054	152	261	411	546	731
065	155	263	412	565	732
071	156	265	413	606	734
072	162	271	423	612	743
073	165	306	431	624	754
074	172	311	432	627	

Technical Specifications

General

Model	BF-3000
Frequency range	VHF:140-160/150-170MHz UHF:350-370/370-390 400-420/410-430 430-450/450-470MHz
Channel number	64/99
Channel spacing	12.5KHz/25KHz
Compatible temperature	-25°C up to 60°C
Power voltage	12V DC Cathode grounded
Dimensions	183(L)x230(W)x65(H) mm

Transmitter

Transmitting power	≤10W
Frequency stability	±2.5ppm
Modulation	16k@F3E 8K@F3E(Narrow)
Spurious radiation	≤ -70db
FM Noise	≤ -40db
FM Distortion	≤ 5%
Max frequency deviation	≤ ± 5KHz
Channel frequency expand	0.8Mhz with inbuilt duplexer

Receiver

Frequency stability	± 2.5pm
Sensitivity	≤0.25 μV
Receiving modulation bandwidth	≥ ± 7KHz
Adjacent channel sensitivity	≥ 65db
Inter-modulation rejection	≥ 65db
Spurious response rejection	≥ 65db
Audio output power	1W(8Ω)
Band width	20M

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RECYCLABLE PACKAGING