BCH-270 Owner's Manual

By BridgeCom Systems, Inc.

For Technical Support, please contact:
BridgeCom Systems, Inc.
102 NE State Route 92 Highway, Suite C
Smithville, MO 64089
Tel: (816)-532-8451
techsupport@BridgeComSystems.com

TABLE OF CONTENTS

BridgeCom SYSTEMS

CHAPTER 1: INTRODUCTION

Welcome

Thank you for purchasing the BCH-270 dual-band hand-held two way radio. The goal of the BCH-270 is to provide a cost-effective, feature rich hand held radio for users of the 2m and 70cm bands of the amateur radio spectrum. This Owner's Manual will acquaint you with the features and operation of the BCH-270. Every effort has been made in the preparation of this manual to ensure the accuracy of its contents. Carefully read this manual in order to properly operate the radio before use.

SPECIFICATIONS

General	BCH-270
Number of Channels:	128 x 2
Working Voltage:	7.4 V DC
Channel Spacing:	25kHz/12.5kHz
Weight w/Battery & Ant	~260g
Frequency Range:	2m(VHF): RX 134-174 MHz / TX 144-147.995
	70cm(UHF): RX: 400-520 MHz / TX 430-449.995
Dimensions (W x H x D):	61 mm x 124 mm x 36 mm
Frequency Stability:	+/- 1.5 ppm
Operating Temperature:	-4° F to +122° F (-20° C to +50° C)
Battery Type:	Li-Ion
Antenna Connector:	SMA Male
Antenna Impedance:	50Ω
TRANSMITTER	
RF Output	High Power: 5 Watts / Low Power: 2 Watts
Maximum Deviation:	+/- 5kHz (25 kHz) +/- 2.5 kHz (12.5 kHz)
Antenna Connector:	SMA Male
Antenna Impedance:	50Ω

In our on-going commitment to quality, specifications are subject to change without notice.

CHAPTER 2: Unpacking and Preparation

We recommend that you identify the items listed in the following packing list. If you find that all the items are not present, please contact us.

Parts List

Item	Quantity
Rubber Antenna	1
Li-ion Battery Pack	1
Desktop Charger	1
Power Adapter	1
Belt Clip	1
This user's Manual	1
Hand Strap	1

GETTING ACQUAINTED

Antenna

Indicators

Red light at TX
Green light at RX
Red light flashes TX
at lower voltage

Power/VOL Rotator
Power on by rotating clockwise
Power off by rotating counter clockwise till hear the "Kada" sound. VOL control by rotating

BridgeCom

BCH-270

Speaker

PF1
Define desired functions

PTT
Press to TX
Release to RX

PF2
Define desired functions

SPK/MIC Jack

Battery

BridgeCom SYSTEMS

Charging the Battery

The battery is not completely charged at the factory, therefore the battery will need to be charged before using the radio. After two to three charge / discharge cycles, the operating capacity will increase to its normal capacity.   To charge the battery:

1. Fasten the battery pack to the back of the radio. Note: Before charging, it is advised the radio is powered OFF.
2. Using the supplied power adaptor, plug the output terminal of the power adapter in the DC jack behind the charger base. The charger LED will indicate ORANGE for about 2 seconds then go out.
3. Place the radio into the charger cradle. When charging, the LED indicator will light RED. Once the battery is fully charged the charger LED will turn GREEN. It normally takes about 5 hours to completely charge an empty battery.

Battery Charger Indicator

Operation	Indicator
Power Connected	Orange LED on 2 seconds then goes out
No battery	NONE
Charging	RED solid
Fully charged	GREEN solid
Fault Condition (Over temp, short circuit, or over discharge)	Red LED flashes

LCD Icons

Icon	Description
🔒	Key Lock
ANI	ANI
⊖ ⊕	Minus/Plus Offset Frequency Direction
🔔	Remote Emergency
IVOX	IVOX
VOX	VOX
SAVE	Battery Save
APO	APO(Automatically Power OFF)
🔋	Battery Gauge Indicator
FM	FM Radio
DW	Dual Watch
SOS	SOS
NAR	Narrow Band
MOR	MORSE Code
PRI	Priority Scan
REV	Reverse Frequency
SCN	Scan
A B	Group A/B
DTMF	DTMF
DCS	DCS
CT	CTCSS
75 50 25	Last Digits At Frequency
H	High Power
L	Low Power
2T	2 Tone
188	Channel Number
▰▰▱	TX/RX Signal Indicator

BridgeCom
SYSTEMS

CHAPTER 3: FEATURES AND OPERATION

FEATURE OVERVIEW:

- HIGH and LOW power (5W and 2W)
- Dual watch Frequency operation
- 2 x 128 Memory channels (GROUP A and B)
- LCD Dot Matrix display
- CTCSS and DCS encode / decode – Standard and non-standard
- DTMF Encode/Decode
- VOX
- Very long battery life
- Windows based PC Programmer

Switching Power On/Off and adjusting the audio volume level
1. With a fully charged battery, connect the antenna to the top of the radio's antenna jack.
2. Rotate the POWER/VOL knob clockwise to turn on the radio. A power up alert will be heard and the current DC supply voltage will be indicated. After about 2 seconds, the display will resume normal operation and display the current operating frequency.
3. To increase/decrease the audio volume level, rotate the POWER/VOL knob.
4. To power down the radio, rotate the POWER/VOL knob fully counter clockwise until clicked and the display goes dark.

After powering up, for its first use, the radio defaults to VFO operating mode and the default receive (RX) frequency is displayed for both 2m and 70cm. Once the radio has been used, it will power up to the mode it was in prior to being turned off.

Keypad Overview:

The BCH-270 has a 16 button keypad for operating the radio. From the keypad, you will be able to program the radio for how you want it to operate.

CHAPTER 4: QUICK START – GET ME ON THE AIR!

When the radio is powered on for the first time, it will display the measured battery voltage and emit a power on alert. The powered on alert will be followed by the voice message: "Power On." On the top line of the radio display will be the 2m RX frequency (GROUP A) and the bottom line will display the 70cm RX frequency (GROUP B).

In this example, we instruct you on how to program the BCH-270 to work with a 2 meter repeater and a 70cm repeater.

Our example 2m repeater transmits on 147.38 MHz and receives with a +600 KHz offset on 147.98 MHz. The 2m repeater encodes/decodes a CTCSS tone of 100.0 Hz. Our 70cm repeater example transmits on 443.750 and receives with a +5 MHz offset on 448.750. The repeater will have a 110.9 CTCSS tone for encode/decode.

Setting 2m RX and TX Frequency for use with a repeater.

By default, the radio will power up to receive on the 2m frequency (GROUP A). This is noted by observing the right arrow icon with an 'A' in the center to the left of the 2m frequency.

Change the frequency step size to 10 kHz. This is done by pressing the F button and then 9. Press the F button again to access the step size. Press the UP / DOWN button to arrive at 10.0 kHz. Press the F button to store the setting. Press the *A/B button to exit the function menu.

To enter the desired RX frequency, simply key the frequency into the radio using the keypad. To enter 147.380 MHz:

Key in 1 4 7 3 8 0 and the radio will confirm programming with a 'good' long beep after keying in the '0'.

Programming the 600 kHz TX Offset:

Press-and-release the F key. Quickly Key in 2 0 to bring up the OFFSET menu item. Press-and-release the F key. This will bring the arrow to the 2nd line of the display to where you can enter the offset. Key in 0 0 0 6 0 0   - This will be followed be a confirm beep and 0.600 will be displayed. Press-and-release the *A/B button to exit the OFFSET menu item.

Setting the Positive Duplex Shift (+)

Now, we need to cause the radio to have a + 600 kHz shift when the radio is keyed. Once again, press-and-release the F key. Key in 1 9 to bring up the SFT-D menu item. SFT-D will be displayed on the top line and the SHIFT setting will be displayed on the bottom line. Press-and-release the F key to bring the arrow to 2nd line of the display indicating focus. Press-and-release the Up or Down keys to cycle through +, OFF, -. You will keep the setting on '+'. Press the F button to store the setting. Exit the SHIFT menu item by pressing the *A/B button. You'll note the + icon being illuminated on the top most line of the display.

BridgeComm
SYSTEMS

Programming the TX and RX CTCSS tone:

Press-and-release the F key to enter menu mode. Key in 5 to bring up the SQT.RX menu item. SQT.RX will be displayed on the top line of the display. Press-and-release the F key to bring the bottom line into focus. Key in 1 0 0 0 to put 100.0 Hz as the RX tone. Press the F key to store the tone and bring up the TX tone. Key in 1 0 0 0 and press the F key to store 100.0 Hz. Press-and-release the *A/B button to exit the SQT menu item. The radio should now be ready to talk through a 2m repeater.

Setting 70cm RX and TX Frequency for use with a repeater.

To change to the 70cm radio operation, press-and-release the *A/B button. The active band arrow will drop down to the 2nd line and point to the 70cm RX frequency.

To enter the desired RX frequency, simply key the frequency into the radio using the keypad. To enter 443.750 MHz:

Key in 4 4 3 7 5 0 and the radio will confirm programming with a 'good' long beep after keying in the '0'.

Programming the 5.0 MHz TX Offset:

Press-and-release the F key. Key in 2 0 to bring up the OFFSET menu item. Press-and-release the F key. This will bring the arrow to the 2nd line of the display to where you can enter the offset. Key in 0 0 5 0 0 0   - This will be followed be a confirm beep and 5.000 will be displayed. Press-and-release the *A/B button to exit the OFFSET menu item.

Setting the Positive Duplex Shift (+)

Now, we need to cause the radio to have a + 5 MHz shift when the radio is keyed. Once again, press-and-release the F key. Key in 1 9 to bring up the SFT-D menu item. SFT-D will be displayed on the top line and the SHIFT setting will be displayed on the bottom line. Press-and-release the F key to bring the arrow to 2nd line of the display indicating focus. Press-and-release the Up or Down keys to cycle through +, OFF, -. You will keep the setting on '+'. Press the F button to store the setting. Exit the SHIFT menu item by pressing the *A/B button. You'll note the + icon being illuminated on the top most line of the display.

Programming the TX and RX CTCSS tone:

Press-and-release the F key to enter menu mode. Key in 5 to bring up the SQT.RX menu item. SQT.RX will be displayed on the top line of the display. Press-and-release the F key to bring the bottom line into focus. Key in 1 1 0 9 to put 110.9 Hz as the RX tone. Press the F key to store the tone and bring up the TX tone. Key in 1 1 0 9 and press the F key to store 110.9 Hz. Press-and-release the *A/B button to exit the SQT menu item. The radio should now be ready to talk through a 70cm repeater. Enjoy!

BridgeCom SYSTEMS

CHAPTER 5: Basic Operation

- **TX**
  1. Using the monitor button on the left side of the radio, monitor the radio to ensure there is no one transmitting on the chosen channel.

  2. Press PTT and face the microphone before talking. The LED should turn RED indicating TX. To ensure good voice quality, the distance between your mouth and the microphone should be between 2.5 and 5 cm.

  3. Release PTT to put radio back in receive (RX).

  4. When using the earphone and VOX active, users can enjoy hands-free talking.

- **RX**
  1. Upon power up, the radio defaults to a pre-programmed or default RX Frequency.

  2. When radio is receiving a valid call, the speaker un-mutes and the green LED lights.

  3. Certain conditions may be required for the radio to un-mute and receive. For example, proper CTCSS/DCS signal decode might be required in order for the radio to un-mute. In addition, the receiving signal must be strong enough to break the squelch (SQL) setting.

  4. CTCSS/DCS signaling is a special squelch protocol and can help to ignore unwanted calls on the channel. CTCSS/DCS is programmed on a per channel basis. To communicate using CTCSS/DCS, other radios must have the same signaling in their radios.

Working Modes

1) Frequency Mode (VFO) / MEMORY MODE

To toggle between VFO mode and memory mode, press the V/M key. To indicate the radio is in memory mode for the respective band, there will be a channel number to the left of the frequency. Pressing the A/B button switches between each band. While in VFO mode, you can press the V/M key and this will convert to a quasi VFO/MEMORY mode where you can step up/down through the memory channels and the channel frequencies are displayed. In VFO mode, you can then step up/down in frequency by pressing the UP/DOWN keys. The up/down step size is determined by the STEP size programming.

2) Memory Mode

To change to exclusive MEMORY mode where the ALPHA channel names are displayed, hold down the V/M key and cycle radio power. In this mode you can press the UP/DOWN keys to step through the pre-programmed channels. The names of the channels will be displayed. To go back to VFO / MEMORY mode, turn the radio off and then power up the radio holding the V/M key.

3) FM Mode

The BCH-270 supports an FM radio. To change to FM Radio mode press the F key followed by the 8 key. While in this mode, you can press the UP/DOWN keys to change the FM radio frequency.

4) Menu Mode

To enter Menu mode, press the F key. Press the UP/DOWN arrow keys to choose desired item. For more details please refer to "Menu Operations".

BridgeCom SYSTEMS

Chapter 6: HOW-TO Function GUIDE:

- **Change BANDS from 2m (GROUP A) to 70cm (GROUP B) or 70cm to 2m.**

    1. To change operating bands, simply press the *A/B button.

- **Memory Mode Channel recall / VFO Frequency Entry**

    1. In Memory mode or Memory/VFO mode, you can input three numbers to change channels. If the radio has pre-programmed channel numbers assigned then it's a matter of entering the 3-digit channel number to recall the channel. If the channel does not exist, then the current channel is maintained. The following examples illustrate:

        To recall: CH1 (KEY 0 0 1), CH98 (KEY 0 9 8), CH123 (KEY 1 2 3)

    2. In VFO mode, simply key in the desired RX Frequency. After keying in the 6 digit frequency, if it's a valid RX Frequency, the radio will begin receiving. If the frequency is invalid, the radio will revert back to the previous working frequency.

        To enter 145.450 MHz – Use the *A/B button to select the 2m band. Then KEY IN: 1 4 5 4 5 0 – A long key beep will indicate success.

- **Storing a Channel to Memory**

    Channel frequencies are stored using the radio programmer or by using the radio in VFO mode only. The following instructions are for VFO mode radio operation.

    1. While the RX frequency is displayed and the desired TX and RX signaling is set, press F and then press 2 2 to bring up the MEM CH? Menu option. Press the F key again to confirm.

    2. Press the UP/DOWN keys to choose or input the channel number where you want the channel stored. For example key in 0 0 6. The word SAVE will be displayed and flash on the screen.

    3. Press F key to display YES? Press the F key again to confirm. The channel is now stored.

- **Deleting a Channel from Memory**

    Deleting a channel is done in Memory mode.

    1. Press A/B to Select the band where the channel you'd like to delete is located.

    2. Press the F key followed by 2 3 to bring up DEL CH?

    3. Press the F key again to bring focus to the channel name line. Press the UP/DOWN buttons or the key in the channel number you would like to delete.

    4. Once the channel name is displayed, press the F key, YES will be display. Press the F key gain and the channel will be deleted.

- **Setting SQUELCH (SQL)**

The purpose of the squelch control is to mute the speaker when no signals are present. With the squelch level (0-9) correctly set, the speaker will only un-mute when there is a strong signal present. The higher the squelch level, the stronger the signals must be to un-mute the speaker. The appropriate squelch level depends on the ambient RF noise conditions.

1. Press the F key and then press the 1 SQL button. The LCD will display the current SQUELCH level.

2. Press the F key to move the cursor to the squelch line and press the UP/DOWN keys to choose desired SQL level.

3. Press the F key to confirm the setting. Press the A/B button to exit menu mode.

- **Changing Power Level High/Low Power**

1. Press F and then KEY 2 POW.   The LCD will display the current TX Power Level.

2. Press F to cause the cursor to move the power setting line. Press the UP/DOWN buttons to select the power setting of HIGH or LOW. HIGH being 5W and LOW being 2W.

3. Press F to confirm the setting. Press *A/B setting to store the setting and go back to the previous operating mode. Note the current power level icon will be displayed. L or H. See LCD layout.

- **Changing Frequency Step Size**

1. Press F and then KEY 9 STEP. The LCD will display the current step size. Press the F key again to go the step size option line. The step size options are: 2.5K, 5K, 6.25K, 10K, 12.5K, 15K, 20K, 25K, 30K, 50K, and 100K.

2. Press UP/DOWN keys to choose desired step size.

3. Press F to confirm the setting. Then press the *A/B button to store the setting and go back to the previous operating mode.

- **Programming Frequency OFFSET and SHIFT for DUPLEX operation**

1. Select the band you want to program the offset and shift. Press F and then 2 0 to access the OFFSET Menu item.

2. Press the F key to move the cursor to the second line. Key in the desired offset. For example: 600 kHz would be 0 0 0 6 0 0.

3. Press the *A/B button to store and exit the OFFSET setting.

4. To program the SHIFT, press the F key and then 1 9.

5. Press the F key to move the cursor to the second line. Press the UP / DOWN button to select OFF, +, or -. Press the F key and then the *A/B button to store and exit.

BridgeCom
SYSTEMS

● Programming the SIDE KEYS PF1 and PF2

The side keys can be programmed using the Windows BASED programming software or using MENU ITEMS 39 through 42. See MENU ITEMS Chapter 7.

● Start Channel Scan

1. Press F and then press the numeric KEY 6 SCN. Then press the F key once again to start scanning.

2. Press UP/DOWN key to change scanning direction during scanning.

   When scanning in VFO mode, the radio will scan by stepping through the channels as determined by the programmed frequency step. Scanning in Channel mode will step through all the programmed channels. Scanning in FM Mode, the radio will scan all valid FM Radio frequencies. In Channel mode, scanning will not activate if radio has less than two channels.

● RX and TX CTCSS/DCS

1. Press F, then press 5 SQT. The LCD will display SQT.RX on the top line of the display.

2. Press F again to move the pointer to the second line. The SQUELCH type can be selected by pressing the *A/B button. OFF, CTCSS, and DCS

3. Once the squelch type is selected, the UP/DOWN buttons can be used to step to the desired CTCSS tone or DCS code. You may also key in the desired tone.

4. For example: 102.5Hz for CTCSS.
   a. If necessary press the *A/B to switch to CTCSS.
   b. Key in: 1, 0, 2, 5

5. Press the F key to store the setting and switch to selecting the TX SQUELCH type.

6. The TX CTCSS/DCS Entry will automatically be set to the same RX CTCSS/DCS Entry. If the TX CTCSS/DCS entry needs to be different, simply select the encode type and the tone/code. Press the *A/B key to revert back the previous operating mode and begin using the programmed settings.

   If at any time there's an entry error, press the # key to cancel the entry and the radio will revert back to displaying the previous CTCSS/DCS tone.   To completely cancel the entry process, press-and-release V/M button. You cannot set the RX signaling when the radio is in MEMORY mode.

   In addition, the BCH-270 can encode/decode any non-standard CTCSS tone and DCS code. Simply key in the desired tone/code.

CHAPTER 7: MENU Items

The BCH-270 supports 51 menu items for setting various parameters that determine the operation of the radio. This chapter details each of these items and how each item works. KEEP IN MIND, MANY OF THESE FEATURES CAN BE ADJUSTED USING THE WINDOWS BASED PC PROGRAMMER.

To access the menu list:

Press F and then quickly key the menu item number or press the UP/DOWN button to find the menu item. If the menu list has not been accessed since power up, item 00 – ANI is displayed. Once the menu item is found, press the F button to begin setting the item function. Press the UP/DOWN button to select the item function. Press the F button to confirm the item function setting. Press the *V/M button to exit the menu list and revert back to the previous operating mode.

During operation, the current menu item displayed will be the last menu item that was displayed when the menu list was exited.

00 – ANI (Automatic Number Identification)

The ANI menu item allows for turning ON/OFF ANI RX decode operation of the radio. If decoded, the calling radio's unique ID is displayed.

01 – SQL (SQUELCH Level)

The purpose of the squelch control is to mute the speaker when no signals of sufficient strength are present. With the squelch level (0-9) correctly set, the speaker will only un-mute when there is a strong signal present. The higher the squelch level, the stronger the signals must be to un-mute the speaker. The appropriate squelch level depends on the ambient RF noise conditions.

02 – POWER (HIGH or LOW)

This menu item allows for changing the radio's power level. The two options are HIGH (5W) and LOW (2W) Power. Each channel group, A or B, has its own setting.

03 – REV T*R (Reverse Frequency)

The reverse frequency menu item allows for quick reversal (SWAP) of the programmed TX and RX frequencies. In VFO mode this reversal is governed by the programmed OFFSET. When the radio is set for reverse, the REV icon will be illuminated.

04 – VOX.SWI (VOX SWITCH)

This menu item allows for turning ON/OFF the VOX feature. VOX stands for voice activated transmit. VOX.SWI works with the VOX Level menu item 24. When VOX is active, the VOX level determines what mic level (1-10) will PTT the radio. Level 1 requires a loud voice, whereas Level 10 requires softer voice. When VOX is on, the IVOX icon is illuminated.
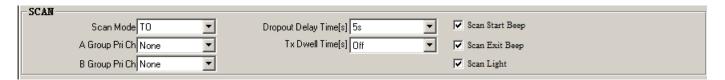
BridgeCom SYSTEMS

05 – SQT.RX / SQT.TX

This menu item allows for changing the radio SQUELCH option for receive and transmit. While in this option, pressing the *A/B button switches from OFF, CTCSS, and DCS. Once the desired RX or TX option is chosen, key in the tone/code you want to use.   When done and the ARROW icon is pointing to SQT.RX, press the *A/B button to exit. See RX and TX CTCSS/DCS in the HOW-TO section.

06 – SCAN

The Scan menu item allows for turning SCAN ON/OFF. The type of scan and how it operates is set up using the BCH-270 programming software.

Press F and 6 to select SCAN. To turn on SCAN, press the F key and the radio will revert back to the previous operating mode and start scanning. The SCN icon will illuminate. To exit SCAN, press any key on the radio.

Additional scan settings can be adjusted using the programming software function parameter1 tab sheet. See below:

The radio scans through the frequencies in the programmed step size. See menu item 9 STEP.

The scanning modes used by the BCH-270 are as follows:

Time Mode (TO): The radio stops scanning after detecting a signal for approximately 5 seconds. Prior to the 5 seconds expiration, the radio will remember the channel and continue to scan. When the 5 seconds has expired and the signal is still present, the radio will stop and rest on the scanned channel.

Carrier Mode (CO): The radio stops scanning when a signal is detected and remains on the same frequency until the signal drops out.

Search Mode (SE): The radio stops at the pre-programmed frequency or channel when detecting a signal.

The PC based programmer allows for setting the delay time between RX and Scanning. This timer sets how long the radio remains on a channel prior to resuming scan.

The PC based programmer allows for setting the delay time between the end of TX and resuming Scan

The PC based programmer also allows for setting the Scan Start Beep on/off, Scan Exit Beep ON/OFF, and Scan Light on/off.

Also, the programmer allows for one memory channel in each group (2m or 70cm) to be designated as a SCAN-to MEMORY Priority Channel. This is for use in memory mode.

07 – DTMF IN (ONE-TIME DTMF INPUT to be TX)

DTMF IN allows for sending a ONE-TIME unique DTMF sequence when PTT is pressed. This is useful in the event you want to access a telephone interconnect, remotely program a repeater, or remotely program a repeater controller. For DTMF A, B, C, and D: the F key = A, the UP key = B, the DOWN key = C, the V/M key = D. The DTMF encode timing parameters are set using the radio programmer. To use this feature, press F 7. Then press F to access the second line. Key in the DTMF sequence followed by PTT to send.

08 – FM RADIO

This menu item is used to turn ON/OFF the built-in FM Radio.

09 – STEP

This menu item is used to adjust the frequency step size used when stepping through channels. It is used in VFO mode and SCAN. The step size options are: 2.5K, 5K, 6.25K, 10K, 12.5K, 15K, 20K, 25K, 30K, 50K, and 100K. See: Changing Freq Step size in the HOW- TO section of this manual.

10 – LED

This menu item allows for you to program how you would like the LCD backlight display to work. You can turn the LCD backlight OFF, or you can set the illumination time for how long it remains lit after there has been any activity with the radio. The time options are: OFF, ON, AUTO OFF in seconds – 2, 5, 10, 15, 20, or 25.

11 – BEEP

This menu item is used to turn ON/OFF all radio beeps.

12 – TX. SEL (Select TX Channel)

This menu item sets the TX channel option for when PTT is pressed. The options are:

EDIT: TX on the current channel
BUSY: TX on the previous communication channel
A: TX on 2m (GROUP A) selected TX Frequency
B: TX on 70cm (GROUP B) selected TX Frequency
AUTO: Change to and TX on the channel which just received signal.

13 - D. WAIT (DUAL WAIT)

This menu item is an ON/OFF feature that sets how the radio receives. If D.WAIT is ON, the radio will monitor and receive on the displayed 2m (A) and 70cm (B) channels. If D.WAIT is OFF, the radio will only receive on the selected GROUP.

14 – TOT (Timer-Time Out)

This function limits how long the user is allowed to PTT before the radio stops transmitting. In the programming software an alarm can be set to emit an alert prior to time-out-timer expiration.
Options are OFF, 30/…/600 seconds.

BridgeCom SYSTEMS

15 – APO (AUTO POWER OFF)

The APO setting will cause the radio to automatically turn off power if there's no operation during the programmed interval.   The radio can be powered up by simply pressing any key. The programmed time interval is OFF, and 1 to 24 hours.

16 – AUTO LK (LOCK KEYPAD)

This feature programs the KEY LOCK feature. The KEY LOCK feature allows for locking out the key pad. The options are: MANU where the #LOCK key is held until the keypad locks, and AUTO 5, 10, 20, 30 where the keypad automatically locks after 5, 10, 20, or 30 seconds. To indicate locked, the LOCK icon will be displayed in the upper left corner of the display. Once the keypad is locked it remains locked until the #LOCK key is pressed-and-held with UNLOCK displayed. The radio will not remember the key pad is locked upon power cycle.

ATS 5, ATS 10, ATS 20, ATS 30 locks the key pad after 5, 10, 20, 30 and STORES the setting so the radio remembers the KEY LOCK status upon power cycle.

17 – PON.MSG (POWER ON MESSAGE)

This menu item allows for customizing a Power On Message. The options are: NO MSG, DC Voltage, or MSG indicating Custom Message created using the programming software.

18 – W/N (Wide or Narrow Band)

The W/N setting is used for setting the 2m (A) or 70cm (B) sides of the radio to either WIDE or NARROW band operation. Each band has its own setting and the channel group selected is what will be adjusted when this menu item is entered.

19 - SFT-D (Shift Direction)

This menu item is used for setting the 2m (A) or 70cm (B) transmit shift direction. The options are OFF, +, and -.   The amount of shift is determined by the OFFSET. OFFSET is programmed using menu item 20.

20 – OFFSET

OFFSET is used to program the difference from the RX and TX frequency when the radio is used to communicate through a repeater. This is an individual group setting for either GROUP A (2m) or GROUP B (70cm).

To program OFFSET, manually enter the frequency. For example, to enter 5.0 MHz, simply key 0 0 5 0 0 0. The value will automatically be entered. Also, see: Programming Frequency OFFSET and SHIFT for DUPLEX operation in the HOW-TO section.

21 - DIS.NM (DISPLAY NAME)

When the radio is used in strict MEMORY mode. (POWER ON holding the V/M button), this menu item allows for turning ON/OFF the pre-programmed custom name of the channel.
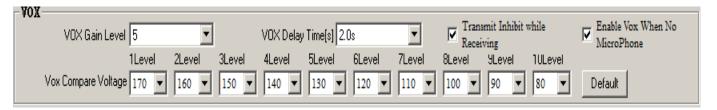
22 - MEM CH? (Store Channel to Memory)

When in VFO mode, this menu item allows allows for storing the current channel contents into memory. See: Storing a Channel to Memory in the HOW-TO section.

23 - DEL CH? (Delete Channel from Memory)

This menu item allows for deleting a memory channel. See: Deleting a Channel from Memory in the HOW-TO section.

24 – VOX (VOX LEVEL)

This menu item allows for setting the audible voice level required to initiate a VOX transmission. The setting is 1 through 10. Where 1 requires loud voice and 10 is for soft voice. If checked box checked, VOX transmit inhibited while receiving. The programming software allows for programming VOX **Level Compare Value** and **VOX Delay Time.** VOX Delay time helps provide for proper flow of RX/TX communication. Experiment with this feature to determine optimum value.

25 – ROGER

This menu item allows for turning on/off the 'ROGER' beep after transmitting. The volume level of the 'ROGER' beep is determined by the setting of the volume control knob.

26 - SCAN AD (SCAN LIST ADD)

This menu item is for use in MEMORY mode. The SCAN ADD feature allows you to add or delete memory channels from the scan list. This feature does not work in VFO mode.

You must be in MEMORY Mode and on the specific memory channel when using SCAN ADD.

When on the channel you would like to add or delete, press the F key and 2 6. Then press the F key to move to the second line of the display. Press the UP / DOWN button to select DEL or ADD. Press the F key to confirm. Press the *A/B to exit the menu item.

27 - DC VOLT

This menu item allows for you to check the radio's battery voltage.

28 – DW (DUAL WATCH)

This menu item allows for monitoring the receiver of the selected band or bands while listening to the FM Radio. When this feature is active, the DW icon is illuminated on the display.

BridgeCom SYSTEMS

29 - MDF-A (Display Method Group A)

This menu item allows you to choose how you would like the channel information (Frequency, Name, etc) displayed. The menu options are:

VFO: Displays channel frequency.
CHANNEL: Displays PC programmed channel name and number.
VFO.CH: Displays channel number and channel frequency.

30 - MDF-B (Display Method Group B)

Operation is the same as menu item 29.

31 - CA TONE (Calling Tone)

This menu item allows for the selection of one of five different Calling Tone(s) to be placed at the beginning of the radio transmission.

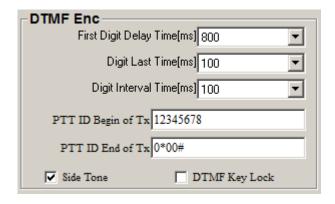## 32 – VOICE PROMPTS (VOICE LANGUAGE SELECTION)

The radio supports voice prompts upon numeric key presses and power up. This menu item allows for turning this feature ON/OFF and having voice prompts in either English or Chinese.

33 - VOX DLY (VOX DELAY)

When VOX is turned ON, this menu item allows for programming the duration the radio stays keyed in seconds after no longer hearing voice. The choices are: 0.5s, 1.0s, 1.5s, 2.0s, 2.5s, and 3.0s

34 - PTT.ID

The PTT ID menu item allows for choosing when the pre-programmed PTT ID is sent during PTT. The PTT ID is set up using the PC based radio programmer. The PTT ID can be sent at the beginning of the transmission (BOT), end of the transmission (EOT), or both (BOTH). The type of signaling sent is DTMF or 2-TONE and is programmed using menu item 38. When DTMF is chosen, the DTMF tab in the programmer is used to set the parameters:

35 - DT DIAL (DTMF Dial List selection)

This menu item allows for selecting the assigned DTMF sequence as indicated in the DTMF Dial list. The list is numbered 1 through 16. This item sets what entry in the autodial list will be used when PTT is pressed or if the DIAL function is programmed as one of the Side Keys. Generally, this menu item is not used for amateur radio purpose.

36 - DT.MR (DTMF Memory)

This menu item allows for programming the DTMF Dial List and how the DTMF sequences are sent when dialed. Menu item sub-types are as follows:

CH1-16 – Programs the AUTODIAL list
CH BOT – Send DTMF sequence at beginning of the transmission
CH EOT – Send DTMF sequence at the end of the transmission
CH ID – Programs the sequence used when PTT ID is enabled.

To configure CH1-16, chose MEMORY sub type then press F to confirm. Input DTMF sequence by pressing the UP/DOWN buttons or character. Press the #LOCK to move the cursor forward, press the *A/B to move the cursor backward. Press the V/M key to store and exit entry operation. Press the V/M key again to go to the MENU ITEM entry. Press the *A/B key to exit.

37 - SP MUTE (Speaker Un-mute)

This menu item determines what causes the speaker to un-mute when sufficient signal strength is detected on the programmed channel. The options are:

WAVE: Turn on the speaker when the radio breaks squelch.

QT/DQT: Turn on the speaker when the radio receives the programmed CTCSS or DCS.

QD+OPT: Turn on the speaker when the radio receives the programmed CTCSS or DCS **AND** DTMF/2-Tone signaling.

QD-OPT: Turn on the speaker when the radio receives the programmed CTCSS or DCS **OR** DTMF/2-Tone signaling.

38 - SIG.OPT (PTT ID Signaling OPTION)

This menu item works with the PTT ID function and determines whether DTMF, 2-TONE, or NO signaling is used in conjunction with a PTT event.

BridgeCom SYSTEMS

39 - PF1.S_K (PF1 key assignment – Short Press)

The menu item programs what feature is activated/deactivated when a **SHORT PRESS** of the PF1 key or KEY occurs.   The options are:

> OFF: NO Function programmed
> DIAL: Automatically dial the entry number as selected using MENU ITEM 36.
> CALL: Select which entry number in the AUTODIAL MEMORY LIST to use.
> SCAN: Turn ON/OFF Scan
> VOX: Turn ON/OFF VOX operation
> MONITOR: Turn ON/OFF Monitor Operation
> POWER: Toggle between HIGH and LOW Power for selected channel GROUP (A or B)
> SOS: Make emergency call
> DTMF IN: Type in DTMF sequence to PTT
> RADIO: Turn ON/OFF FM Radio
> LAMP: Turn ON/OFF top of Radio LED LAMP
> VOL INC: Increase VOLUME (NOT USED)
> VOL DEC: Decrease VOLUME (NOT USED)
> FIR CH: Go to First channel on selected GROUP (A or B)
> SEC CH: Go to Second channel on selected GROUP (A or B)
> SQL OFF: Squelch defeat ON/OFF

40 - PF1.L_K (PF1 key assignment – Long Press)

Same as menu item 39

41 - PF2.S_K (PF2 key assignment – Short Press)

Same as menu item 39

42 - PF2.L_K (PF2 key assignment – Long Press)

Same as menu item 39

43 - FIR.TMR

This menu item programs the FIRST CHANNEL BACK timer.

44 - FIR.CHA

This menu item is to be used in conjunction with the programmable SIDE KEYS. When either PF1 or PF2 is assigned to FIR CH, this is the place where you designate which channel is the FIRST CHANNEL for GROUP A. Accordingly, when the PF1 or PF2 Key is pressed, GROUP A's assignment will become this channel.

45 - FIR.CHB

This menu item is to be used in conjunction with the programmable SIDE KEYS. When either PF1 or PF2 is assigned to FIR CH, this is the place where you designate which channel is the FIRST CHANNEL for GROUP A. Accordingly, when the PF1 or PF2 Key is pressed, GROUP A's assignment will become this channel.

46 - SOS SOR (EMERGENCY ALARM TYPE)

This menu item selects whether you want the EMERGENCY alarm to be local to the radio or transmitted over the air. Options are: LOCAL or LO+DT.

47 - SOS SEL (EMERGENCY CHANNEL SELECT)

This menu item works with MENU ITEM 46 and MENU ITEM 48 and 49. When the EMERGENCY Channel is set for LO+DT and this menu item set for FIXED, the EMERGENCY TONE will be transmitted on the channel assigned to either GROUP A or GROUP B. Assign channel using menu item 48 and menu item 49.

48 - SOS ACH (EMERGENCY A GROUP CHANNEL)

This menu item is the place where the group A EMERGENCY channel is assigned.

49 - SOS BCH (EMERGENCY B GROUP CHANNEL)

This menu item is the place where the group B EMERGENCY channel is assigned.

50 – MORSE

This menu item turns ON/OFF MORSE code setting. When MORSE is ON, the MOR icon is illuminated on the display.

51 – RESET

The RESET menu item allows for initializing the radio's settings to default for either VFO or FULL MEMORY mode. When chosing VFO, all settings are reset except memory channels. FULL resets the entire radio.

BridgeCom
SYSTEMS

Available standard /non-standard CTCSS Tones

1-67.0	14-103.5	27-159.8	40-199.5
2-69.3	15-107.5	28-162.2	41-203.5
3-71.9	16-110.9	29-165.5	42-206.5
4-74.4	17-114.8	30-167.9	43-210.7
5-77.0	18-118.8	31-171.3	44-218.1
6-79.7	19-123.0	32-173.8	45-225.7
7-82.5	20-127.3	33-177.3	46-229.1
8-85.4	21-131.8	34-179.9	47-233.6
9-88.5	22-136.5	35-183.5	48-241.8
10-91.5	23-141.3	36-186.2	49-250.3
11-94.8	24-146.2	37-189.9	50-254.1
12-97.4	25-151.4	38-192.8	
13-100.0	26-156.7	39-196.6	

Available DCS CODES

023	071	143	225	266	356	452	532	664
025	072	145	226	271	364	454	546	703
026	073	152	243	274	365	455	565	712
031	074	155	244	306	371	462	606	723
032	114	156	246	311	411	464	612	731
036	115	162	245	315	412	465	624	732
043	116	165	251	325	413	466	627	734
047	122	172	252	331	423	503	631	743
051	125	174	255	332	431	506	632	754
053	131	205	261	343	432	516	645	
054	132	212	263	346	445	523	654	
065	134	223	265	351	443	526	662	

WARRANTY AND SERVICE

Limited Warranty

This product is warranted by BridgeCom Systems, Inc. to be free of defects in materials and workmanship for a period of **one year** from the date of purchase. If a defective part causes this product to operate improperly during the two-year warranty period, we will service it to the original owner free of charge if shipped to BridgeCom Systems at the owner's expense. This warranty does not apply to any parts damaged due to improper use or violation of instructions. It does not extend to damage incurred by misuse or abuse, unauthorized modifications, natural causes such as lightning, fire, floods, and other such catastrophes; nor to damage caused by environmental extremes, such as power surges and/or transients, theft, or accidents.

All warranties must be performed at BridgeCom Systems, Inc. No credit will be given for unauthorized repair work attempted by the customer.

BridgeCom Systems, Inc. will repair or replace the equipment and return to the customer freight pre-paid, within the continental United States. Equipment found not to be defective will be returned at the customer's expense, and it will include the cost to ship, test, and return the equipment.

Equipment returned for repair must have a return merchandise authorization (RMA) number. To obtain an RMA contact our Technical Support Department at (816)-532-8451 or email techsupport@BridgeComSystems.com. All returned equipment must have the RMA number listed on the outside of the shipping container.

Ship all returns to:
    BridgeCom Systems, Inc.
    Attn:Repair
    102 NE State Route 92 Hwy
    Suite C
    Smithville, MO 64089

Out of warranty repairs and service charges are billed at the current hourly rate plus parts.

PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE.

This document contains information proprietary to Bridge Embedded Systems, Inc. and BridgeCom Systems, Inc. Its contents may not be reproduced, in whole or in part, without express written permission from either Bridge Embedded Systems, Inc. or BridgeCom Systems, Inc.. The information is provided "AS IS" without warranty of any kind, either expressed or implied. Bridge Embedded Systems, Inc. or BridgeCom Systems, Inc. does not assume any liability for damages. Technical information and specifications in this document are subject to change without notice.

Changes or modifications to this device not expressly approved by Bridgecom Systems could voice the user's authorization to operate this device.

BridgeCom SYSTEMS

FCC Statements

Warning and Compliance Statement:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference including received interference that may cause undesired operation.

WARNING: Modification of this device to receive cellular radiotelephone service signals is prohibited under FCC ruiles and Federal Law.