

If your radio is anything like mine, you may have noticed that the Radio on the cover of the manual does not match the Radio you actually purchased, even though it may indicate the correct Model on the cover.



Unfortunately, what is also incorrect, is the Radio Overview, which does not accurately describe the Radio's features:

- 1 - Antenna
- 2 - Flashlight / Alarm LED
- 3 - Call / Radio (FM) / Alarm Button
- 4 - On / Off / Volume Knob
- 5 - Display
- 6 - MONI (Monitor) / Flashlight Button
- 7 - PTT Button (Push-To-Talk)
- 8 - VFO / MR Button (Frequency Mode / Channel Mode)
- 9 - LED Indicator
- 10 - Strap Buckle
- 11 - Accessory Jack
- 12 - A / B Button (Band Selector Switch)
- 13 - Numeric Keypad
- 14 - Microphone
- 15 - Battery Pack
- 16 - Battery Contacts
- 17 - Battery Remove Button
- 18 - Belt Clip



Step 1: Preparing Your Radio For Programming:

Some people have reported that newer Baofeng radios are coming pre-programmed. As you cannot overwrite a previously saved channel, you must erase it before saving something new. To avoid having to erase each channel one-at-a-time, you can erase everything at once:

Reset Radio

Press **MENU** and enter **40** on the radio keypad.
Press **MENU** again; the radio will say "*Initialization.*"
Press **MENU** again to erase the radio.
Press **EXIT**.

| |
|----------------|
| ▲ RESET ALL |
|----------------|

NOTE: You may have to reset the Voice Option after resetting the radio.

It is advisable to have your radio Voice Option turned on, you do not *need* to enable Voice Option, however it will tell you if you are doing things correctly. If your radio does not speak to you, or speaks to you in Chinese (as it may when you reset it), follow the steps below:

If your Voice Prompt is already on, and in English, you can omit this step.

Press **MENU** and enter **14** on the keypad.

| |
|----------------|
| ▲ VOICE OFF |
|----------------|

Press **MENU** again.

The radio will say *Voice Prompt* in whichever language it is currently programmed for.

Press the ▲ button on your keypad until the bottom display reads **ENG**. (Your only options are **CHI** (Chinese), **ENG** (English) or **OFF**.)

| |
|----------------|
| VOICE ▼ ENG |
|----------------|

Press **MENU** again.

The radio will say '*confirm*,' in whichever language you have chosen.

| |
|----------------|
| ▲ VOICE ENG |
|----------------|

Press the **EXIT** button.

Remove your radio's antenna and set it aside. Make sure that it's far enough away from the radio that it still cannot receive a signal.

The radio will not save a frequency to memory if it is currently receiving a signal.

Some tutorials may recommend that you turn off Dual Channel Mode, but removing the antenna will achieve the same result.

Turn on the Radio and turn up the volume so you can hear it speaking.

NOTE: All programming MUST be done from the upper line on the display. If you use the lower line, the radio will not save the information.

Press the **RED VFO/MR** button until the radio says '*Frequency Mode*.'

If you are not using Voice Prompt, you will know when you are in Frequency Mode when the numbers to the right of the Frequencies disappears from the display.

Press the **BLUE A/B** button until ▲ appears to the left of the **upper line**.



There are 40 **MENU** items, however, only 5 are actually required for programming. Once you become proficient, you can reduce this to only 3 **MENU**'s by calculating the OFFSET Frequency manually and omitting **MENU** items 25 and 26. The MENU items we will be using are:

- Receiving Frequency (R-RTCS) code (**MENU** item # 11)
- Transmitting Frequency (T-RTCS) code (**MENU** item # 13)
- Frequency Offset Direction (SFT-D) (**MENU** item # 25)
- Frequency Offset (OFFSET) (**MENU** item # 26)
- Memory Channel (MEM-CH) (**MENU** item # 27)

Check your own manual to confirm these **MENU** items. If yours differs from what is listed above, simply adjust the **MENU** items for your particular radio.

NOTE: To avoid confusion, the images contained within this tutorial contain only the relevant information needed.

For this tutorial, we will be setting up a Duplex Channel on a Repeater from the Garland Amateur Radio Club. This is an open repeater that anyone can use, so long as you have an Amateur Radio license, or it is an emergency.

NOTE: A Duplex channel is one that receives on one frequency and transmits on another.

The repeater we will be programming uses a frequency of 146.660 MHz with a negative Offset of 600KHZ.

NOTE: An OFFSET is the difference between the receiving and transmitting frequencies. Positive means a higher transmitting frequency and negative means a lower one. But don't worry, the radio can calculate the OFFSET for you.

The Repeater uses a Receiving and Transmitting CTCSS Code of 110.9 HZ.

NOTE: The CTCSS code allows the repeater to hear your radio transmission and vice-versa.

You are now ready to start programming. Don't worry, this will be easier than you think.

Step 2: Programming Your Radio:

Receiving Frequency

Enter the receiving frequency **146.660** using the keypad.

NOTE: When entering frequencies, you do not need to enter the '!'. Simply enter **146660**.

The **MENU** button serves three functions:

It opens the **MENU** directory,
It activates your **MENU** selection,
and it saves your **MENU** changes.

NOTE: Your radio may have a very short **MENU** time out and may close if you wait too long between steps. If your radio times out on you, simply press **MENU** to begin again. It is often easier to **EXIT** after each step, then start over with the next.

OFFSET Direction

Press **MENU** and enter **25** on the radio keypad.

▲ SFT-D
OFF

Press **MENU** again.

The radio will say '*Frequency Direction.*'

SFT-D
▼ OFF

Press the ▲ button until a minus sign (-) appears.

(You only have 3 options: +, - or OFF)

SFT-D
▼ -

Press **MENU**.

The radio will say '*Confirm.*'

▲ SFT-D
-

Press **EXIT**.

Transmitting Frequency (OFFSET)

Enter **26** on your radio keypad:

▲ OFFSET
000.000

Press **MENU** again.

The radio will say '*Offset Frequency.*'

OFFSET
▼ 000.000

Enter **000600** on your radio keypad.

OFFSET
▼ 000.600

Press **MENU** again.

The radio will say '*Confirm.*'

▲ OFFSET
000.600

Press **EXIT**.

Receiving CTCSS Code:

Press **MENU** and enter **11** on the keypad.

| | |
|---|--------|
| ▲ | R-CTCS |
| | OFF |

Press **MENU** again.
The radio will say 'CTCSS.'

| | |
|---|--------|
| | R-CTCS |
| ▼ | OFF |

NOTE: If your radio already indicates a number on the bottom line, enter the CTCSS code. If your radio indicates OFF as it does above, Press the ▲ button until *any* number appears.

Type in: **1109**.

| | |
|---|---------|
| | R-CTCS |
| ▼ | 110.9Hz |

Press **MENU** again.
The radio will say 'Confirm.'

| | |
|---|---------|
| ▲ | R-CTCS |
| | 110.9Hz |

Transmitting CTCSS Code:

Press **MENU** and enter **13**.

| | |
|---|--------|
| ▲ | T-CTCS |
| | OFF |

Press **MENU** again.
The radio will say 'CTCSS.'

| | |
|---|--------|
| | T-CTCS |
| ▼ | OFF |

NOTE: If your radio already indicates a number on the bottom line, enter the CTCSS code. If your radio indicates OFF as it does above, Press the ▲ button until *any* number appears.

Type in: **1109**.

| | |
|---|---------|
| | T-CTCS |
| ▼ | 110.9Hz |

Press **MENU** again.
The radio will say 'Confirm.'

| | |
|---|---------|
| ▲ | T-CTCS |
| | 110.9Hz |

Press **EXIT**.

Congratulations, everything you need should now be programmed and ready to save. However, let's check to see if everything's correct.

Quick Check

You should still be in frequency mode and your upper display should read **146.660**.

Press and release the asterisk * button on your keypad. The upper display should now read **146.060**. Press and release the asterisk * button again.

Press **MENU** and enter **11**. The R-CTCS display should read **110.9Hz**. If it does, press ▲ twice.

The T-CTCS display should also read **110.9Hz**. If it does, enter **25** on your keypad. SFT-D should indicate a Minus sign (-). If it does, press ▲ once.

The OFFSET should read **000.600**. If it does, you're ready to start saving.

Step 3: Saving To Memory:

Receiving Frequency

Press **MENU** and enter **27**.

▲ MEM-CH
- 000

Press **MENU** again.

The radio will say '*Memory Channel*.'

MEM-CH
▼ - 000

Enter the Channel number you wish to use or use the ▲ or ▼ buttons until the desired channel number is displayed.

Press **Menu** again.

The Radio will say '*Receiving Memory*.'

▲ MEM-CH
CH-110

Press **EXIT**.

Your receiving frequency is now stored to that memory channel.

Transmitting Frequency (OFFSET)

Press and release the asterisk * button. Your display should now read 146.060.

▲ 146.060

Press **MENU** and enter **27** on the keypad.

▲ MEM-CH
CH-110

Press **MENU** again.

The radio will say '*Memory Channel*.'

MEM-CH
▼ CH-110

Enter the channel number you just used, if it's not already displayed.

Press **MENU** again.

The radio will say '*Transmitting Frequency*.'

▲ MEM-CH
CH-110

Press **EXIT**.

Congratulations, you're done!

Step 4: Testing Your Radio

Reattach your antenna.

Press the **RED VFO/MR** button until the radio says '*Channel Mode.*'

From this point, you can use either the top or bottom line of the display.

Enter the channel number you just saved on the keypad. The display should read **146.660**.

Press the Transmit (PTT) button. The upper display should now read **146.060**.

Release the PTT Button. The Repeater should respond with: ***K5QHD VHF Repeater.***

Once you save to a channel, you cannot edit it. To change it, you must delete the channel and start over (**MENU** item #28).

Simplex Channel programming:

A Simplex Channel is a channel that Receives and Transmits on the same Frequency, therefore OFFSET Direction / Frequencies are not required.

Enter the frequency in the top line while in Frequency Mode.

If a CTCSS code is required, follow the directions above to program the CTCSS (**MENU** items 11 and 13). Using **MENU** item # 25, set OFFSET Direction to OFF. OFFSET Frequency (**MENU** item 26) does not matter at this point.

Saving a Simplex Frequency is slightly different than saving a Duplex Frequency:

After saving the '*Receiving Frequency,*' **do not press EXIT**, keep pressing the **MENU** button until the radio says '*Transmitting Frequency.*'

Press **EXIT**.

Baofeng Menu Function and Description Chart

| MENU | Function Description | Fast Keys |
|------|--|-------------------------|
| 0 | SQL (Squelch Level) | |
| 1 | STEP (Frequency Setup) | |
| 2 | TXP (Transmit Power) | (#) Press and Release |
| 3 | Save (Battery Power) | |
| 4 | VOX (Voice Operated Trasmissions) | |
| 5 | W / N (Wideband / Narrowband) | |
| 6 | ABR (*Display Illumination Time Length) | |
| 7 | TDR (Dual Watch / Dual Band) | |
| 8 | Beep (Keyboard Beep Sound) | |
| 9 | TOT (Transmission Timer) | |
| 10 | R-DCS (Reception Digital Code Squelch) | |
| 11 | R-CTS (Reception Continuous Tone Coded Squelch) | |
| 12 | T-DCS (Transmission Digital Code Squelch) | |
| 13 | T-CTS (Transmission Continuous Tone Coded Squelch) | |
| 14 | Voice (Voice Prompt) | |
| 15 | ANT (Automatic Number ID) PC Software Required | |
| 16 | DTMFST (DTMF Tone of Transmitting Code) | |
| 17 | S-Code (Signal Code) PC Software Required | |
| 18 | SC-REV (Scan Resume Method) | |
| 19 | PTT-ID (Press or Release the PTT Button to Transmit the Code) | |
| 20 | PTT-LT (Delay the Signal Code Sending) | |
| 21 | MDF-A (In-Channel Mode, Display Channel A) PC Software Required | |
| 22 | MDF-B (In-Channel Mode, Display Channel A) PC Software Required | |
| 23 | BCL (Busy Channel Lockout) | |
| 24 | AUTOLK (Keyboard Locked Automatically) | (#) Press and Hold |
| 25 | SFT-D (Direction of Frequency Shift) | |
| 26 | OFFSET (Amount of Frequency Shift) | |
| 27 | MEMCH (Store a Memory Channel) | |
| 28 | DELCH (Delete a Memory Channel) | |
| 29 | WT-LED (Display Illumination Color During Stand-by) | |
| 30 | RX-LED (Display Illumination Color During Reception) | |
| 31 | TX-LED (Display Illumination Color During Transmission) | |
| 32 | AL-MOD (Alarm Mode) | |
| 33 | Band (Band Selection) | |
| 34 | TX-AB (Transmission Selection While in Dual Band Mode) | |
| 35 | STE (Tail Tone Elimination) | |
| 36 | RP_STE (Tail Tone Elimination in Communication Through Repeater) | |
| 37 | RTP_RL (Delay the Tail Tone of the Repeater) | |
| 38 | PONMGS (Boot Display Message) | |
| 39 | ROGER (Tone End of Transmission) | |
| 40 | RESET (Restore Default Settings) | |