BAOFENG UV-5R HOMEMADE USER MANUAL

1. INTRODUCTION

This Chinese radio operates on two U.S. amateur bands, the 2meter band and the 70cm band, capable of either narrow- or wide-band FM (normally, we use WIDE band with this radio). However, it is able to operate on many more frequencies:

U.S. Radio Service	Programmed on your radio	Comments
2 meter ham band	Multiple local repeaters in several cities, plus "simplex" channels	Completely legal, 1 & 4 watts
70 cm ham band	One working Gainesville repeater plus "simplex" (walkie-talkie) channels	Completely legal 1 & 4 watts
NOAA Weather Channels	All seven channels	Receive only -- completely legal.
FM Broadcast	Incrementally tuned	Receive only -- completely legal.
Marine VHF band	Emergency Channel 16, plus other frequently used channels programmed	You can always receive. **Transmission technically legal only in emergency**. Equipment is not certified for this service.
FRS/GMRS family walkie-talkie service	14 channels programmed	You can always receive. **Transmission is technically legal only in emergency.** Lower power channels 8-14 unlikely to be detected at any significant distance. Equipment is not certificated for this service.
MURS license-free service	5 channels programmed	You can always receive. **Transmission is technically legal only in emergency**; equipment is not certificated for this service.

2. ON/OFF/VOLUME KNOB

The only easy thing about this radio is that the top right hand knob is an on-off/volume knob that does exactly what you would think it would do.

There is NO tuning knob at all. Instead you use the up-arrow and down-arrow button to increment either the memorized channels, or a variable frequency choice. If you hold the buttons down, they keep incrementing.

Antenna Connector: On the far top left the rubber-duckie antenna (dual band!) can be unscrewed and an SMA connector can be used to connect an external antenna. Try to keep the VSWR reasonably low, so you don't damage the transmitter.

3. SOFTWARE DEFINED COMPUTER RADIO

This radio is one of the new breed of computer-based radios that are called "software defined". Almost every feature of the radio can be changed with a software setting! This is somewhat frightening at first -- so just don't CHANGE ANYTHING, and you'll be fine.

4. THREE LEVELS OF ABSTRACTION

There are several little "complexities" that once understood, make the radio a lot more user friendly. Let's take them one at a time:

FIRST COMPLEXITY

A & B TRANSCEIVER DISPLAYS

First, there are TWO LINES OF DISPLAY. It acts like you have two complete transceivers in one box. We call the top line "A" and the bottom line "B". You can separately tune these as if they were two different transceivers. There is an ARROW to the left that shows which one you are using. You switch back and forth with the "AB←" key. Most of the time we are going to use the top ("A") display -- so switch there right now if you aren't already pointed there.

A photo of the Radio Display. *You can see the following:*

The top display (A) has the arrow (see it on the left?) pointing to it, so the top (A) display is what is setting your frequency. The A line is programmed to show the NAME of a memory channel , but it is showing you that you are on Channel 01, which is named "BK2M".

The bottom display (B) has access to the exact same memorized channels, but it is programmed to display the FREQUENCY of the memorized channel.

SECOND COMPLEXITY
VFO versus MR (MEMORY CHANNELS)

The entire transceiver (both A and B displays) can be in either of two modes:
MEMORY: with access to the 50+ memorized channels that I have preprogrammed for you. Each memorized channel consists of a CHANNEL NUMBER, A NAME, and a FREQUENCY, as well as additional details such as power, bandwidth, transmitted offset, and other complicated things I have already taken care of for you.

VFO: Variable Frequency -- where you use the up and down buttons to change the frequency yourself, similar to how you would tune a digital FM car radio. If you are in this mode, I have preprogrammed it to have 0 transmitted frequency offset on the A display (you send and receive on the displayed frequency) and negative 0.6 MHz offset on the B display -- you send on a frequency 0.6 MHz lower…..remember this if you get near the lower legal end of the ham radio band…

THIRD COMPLEXITY
CHANNEL vs. NAME vs FREQUENCY

When you are in the MR (memory) mode, you can independently program how you want the A and B displays to read: choices are the CHANNEL number, the NAME assigned,

or the FREQUENCY memorized. I have preset A to display NAME, and B to display FREQUENCY. The channel is visible in little numbers to the far right. If you increment A and B to the same chanell, you can see the NAME in the A, and the FREQUENCY in the B.

Second, each display has 2 or 3 ways it can display what frequency is it set to:

In "CHANNEL" mode it is currently set to tell you the channel number in a very small number off to the left, and it is set to show you the NAME chosen for this frequency in larger print -- up to 5 characters. I have programmed in several very useful Channels on both the 2meter and 70cm bands. We will usually leave the radio in CHANNEL mode. You can change channels (all in the top or "A" display) by either of two methods: turn the left-top knob clockwise or counterclockwise, OR by using the UP / DOWN arrow keys on the display.

If you want to go to FREQUENCY MODE (where the frequency is displayed) you hit the "VM/SCAN" button which has several functions -- touching it switches between "VFO" (FREQUENCY) mode, and "MEMORY" (CHANNEL MODE). Why the confusion of renaming the modes? I dunno….guess the Chinese wanted to confuse us. Most of the time we can leave the A display in Channel Mode. The radio is set to come up with the top (A) display automatically in CHANNEL MODE, and the B (bottom) display in FREQUENCY MODE.

If you want, of course, you can just go hog wild and switch to the B display using the "AB<-" button, and then touch the VM key to switch the B display to CHANNEL MODE also, and even go back and forth if it suits your fancy.

On the left side of the radio the top large button is a Push To Talk button. The two-dot button below that is one that "opens the squelch" and lets you hear even the weakest signals -- or just the noise if there is no one on the frequency. The bottom one-dot button actually does exactly nothing.

5. ACTUALLY USING THE THING

MOST OF THE TIME you can simply stay on the top display, and leave it in the default CHANNEL MODE, and choose any of the pre-programmed channels with either the up/down buttons, or the rotary tuning knob. Press the PTT key to transmit, let go to receive, say your call sign often, and there is really not more to it!

6. PRE-PROGRAMMED CHANNELS

Channels 1-10 are on the 2 meter ham band; the first are local Gainesville Repeaters (there are other cities' repeaters scattered into other channels), the remainder (beginning with X for "simplex") are direct walkie-talkie frequencies, where you can contact a

nearby buddy and both of you send and receive on the same frequency. Channel 5 is set to the local SEDAN Packet digipeated frequency.

OCALA:	Channel 20
PERRY:	Channel 28
LAKE CITY	Channel 29:
Keystone Heights	Channel 30
High Springs	Channel 54

Channels 11-15 are on the 70 cm ham band, including one local repeater that works, one that is currently offline, and 3 simplex frequencies.

Channels 16-20 are VHF Marine frequencies, identified by the marine channel they represent.

Channels 21-27 are the NOAA weather stations -- at least one will always be within range and continuously broadcasting weather information.

Channels 31-44 are the FRS/GMRS frequencies

Channels 45-59 are the MURS channels.