BAOJIE BJ-318
User's Manual

Table of Contents

List of Tables and Figures

Front Panel Description

Panel Description

Figure 1: BJ-318 Front Panel

1. "ON / OFF" Power.
2. Microphone Jack and Programming Cable Jack
3. VFO Receiver: "A or B" ("A" Top, "B" Bottom)
4. Operating Mode: "V / M" (V= frequency / M = memory channel).
5. FM Radio reception.
6. Locking control buttons, as well as the "EXIT" menu function.
7. Display.
8. Decrease the speaker volume "VOL -".
9. Decrease the channel number or frequency "CH -".
10. "MENU" Mode Selection Button.
11. Increase the channel number or frequency "CH -".

12. Increase the speaker volume. "VOL +".
13. Receive signal indicator - "RX".
14. Transmit signal indicator - "TX".

Symbols on the display

Symbol	Meaning
MAIN	Active Receiver
CS	CTCSS subtone on receive (If CTCSS is included in transmission, it is indicated only during transmission)
DS	DCS subtone on receive (If DCS is included in transmission, it is indicated only during transmission) The mode of operation via a repeater is enabled
m	Scrambler enabled
C	Compander enabled
R	The function of reversing the receiving and transmitting frequencies is turned on.
+	Offset of the transmit frequency from the receive frequency up
-	Offset of the transmit frequency from the receive frequency down
N	Narrowband modulation enabled
W	Wideband
H	High transmit power (HIGH)
M	Medium transmit power (MIG)

Symbol	Meaning
L	Low transmit power (LOW)
VOL	Volume
π⊶0	Keypad lock enabled. (Turn off by long pressing the [EXIT] button on the front panel of the station)

Table 1: Display Options

When transmitting the display screen indicates transmitting signal strength and when receiving, the screen indicates receiving signal strength.

In channel mode, the channel serial number is shown under the frequency and channel name. When setting the menu, screen shows the current menu number, indicating receiving and transmitting frequency, FM frequency, menu, menu value and other status.

Microphone Handset Controls
Note! Volume can NOT be controlled from the microphone.
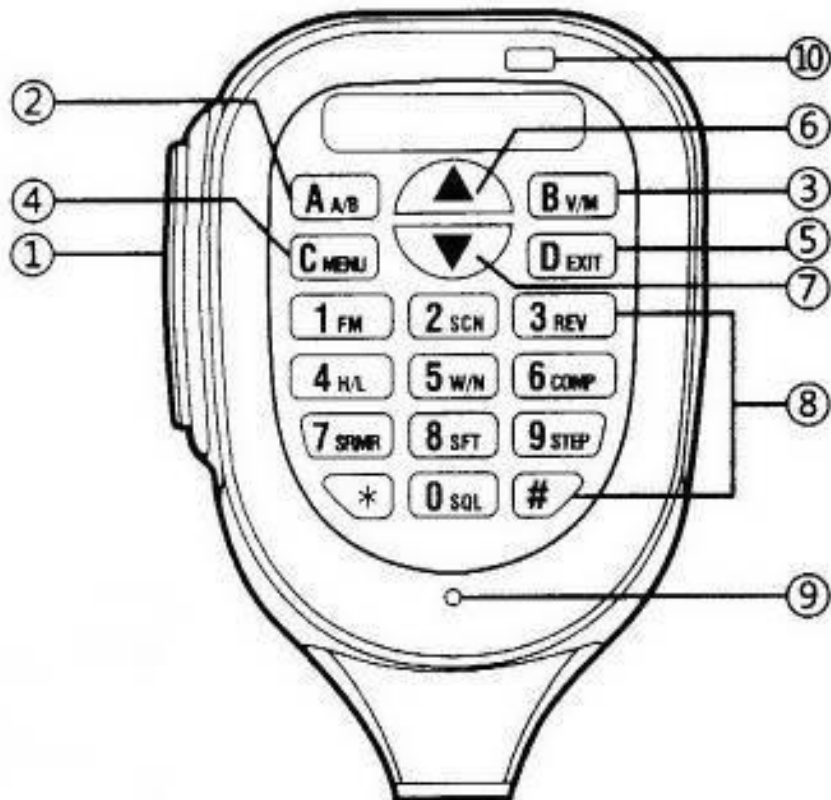
Figure 2: Microphone

1. "PTT" -/ Release to end to transmission.
2. Selecting the VFO Receiver: "A-B"
3. Switching Operating Modes: "V / M" (frequency / channel).
4. "MENU" Mode Selection.
5. "EXIT" from menu.
6. Increase the channel number or frequency "CH -".
7. Decrease the channel number or frequency "CH +".
8. Keypad.
9. Microphone.
10. "TX" Indicator.

Functions of control buttons

[PTT] Key to work, to transmit.
Note: Without antenna attached, do not press PTT

[A / B] Receiver selection button: A or B
An icon appears on the screen opposite the selected receiver.

[V / M] Station mode select button
When pressed, a sequential change of modes occurs:
1. Frequency - a previously set frequency is displayed.
2. Channel - displays the frequency of the programmed channel.
3. Channel - displays the channel name set through the computer.

Changing the Frequency

1. Press A/B to select the required receiver [A or B].
2. Use the [▼] [▲] buttons to select the desired value: OR
3. Input Desired Frequency directly

Changing the Chanel

1. Press A/B to select the required receiver [A or B].
2. Use the [▼] [▲] buttons to select the desired value:

Changing the radio output power "HIGH/MED/LOW"

Note! The function works only in frequency mode.
1. Select the required receiver [A or B].
2. Press the [MENU] button.
3. Then press the [H / L] button.
4. Use the [▼] [▲] buttons to select the desired value:
    "HIGH" - power 25W.
    "MIG" - power 10W.
    "LOW" - power 5W.

5. Save the selection by pressing the [MENU] button. When high power is selected, the "H" indicator will appear on the screen, when mid power is selected, the "M" indicator will appear on the screen, and when low power is selected, the "L" indicator will appear on the screen.

Changing the modulation width "W / N"
Note! The function works only in frequency mode.
1. Select the required receiver, press the [MENU] button, then the [W / N] button.
2. Use the [▼] [▲] buttons to select the desired value:
    "WIDE" stands for broadband.
    "NARR" stands for narrowband.
3. Save the selection by pressing the [MENU] button. When narrowband modulation is selected, the "N" indicator will appear on the screen, and when wideband modulation is selected, the "E" indicator will appear on the screen.

Turning on the "COMP" compander
Note! The function works only in frequency mode.
1. Select the required receiver, press the [MENU] button, then the [COMP] button.
2. Use the [▼] [▲] buttons to select the desired value:
    "ON" - the compander is on.
    "OFF" - the compander is off.
3. Save the selection by pressing the [MENU] button. When the compander is on, the "D" indicator will appear on the screen.

Enabling the "SRMR" scrambler
Note! The function works only in frequency mode.
Not authorized for use in the US by the FCC
1. Select the desired receiver, press the [MENU] button then the [SRMR] button.
2. Use the [▼] [▲] buttons to select the desired value:
    "ON" - the scrambler is on.
    "OFF" - the scrambler is disabled.
3. Save the selection by pressing the [MENU] button. When the scrambler is on, the "T" indicator will appear on the screen.

Setting the direction of the transmission frequency shift "SFT"
Note! The function works only in frequency mode.
1. Select the required receiver, press the [MENU] button, then the [SFT] button.
2. Use the [▼] [▲] buttons to select the desired value:
    "+" - the transmission frequency will be higher than the reception frequency.
    "-" - the transmission frequency will be lower than the reception frequency.
    "OFF" - no shift.

3. Save the selection by pressing the [MENU] button. When you set the shift, the "+" or "-" indicator will appear on the screen, respectively. The shift value is set in menu 15 OFFSET.

Changing the step of the frequency transition "STEP"
Note! The function works only in frequency mode.
1. Select the required receiver, press the [MENU] button and then the [STEP] button.
2. Use the [▼] [▲] buttons to select the desired value:
   2.5kHz / 5kHz / 6.5kHz / 10kHz / 12.5kHz / 25kHz / 50kHz.
3. Save the selection by pressing the [MENU] button.

Fast reverse of the transmit and receive frequencies "REV"
Note! Reverse turns on even with the same transmit and receive frequencies.
1. Select the required receiver, press the [MENU] button and then the [REV] button.
2. When the reverse mode is turned on, the "R" icon will appear on the screen.
3. To disable reverse, press the [MENU] button again and then the [REV] button.

Switching on the FM radio "FM"
1. Press the [MENU] button then the [FM] button.
2. Press one of the [▼] [▲] buttons, the frequency scrolling will start, which will stop when the first FM station is found.
3. To retune to the next FM station in frequency, press [▼] [▲] again.

FM station reception stops if a signal appears on one of the main receivers. FM station reception resumes a few seconds after the signal is lost on the main receivers.

Switching off the reception of an FM station is done by pressing the [EXIT] button.

A specific default FM station can be set using software to program it.

Setting the threshold for opening the squelch "SQL"
Note! The function works only in frequency mode.
1. Select the required receiver, press the [MENU] button and then the [SQL] button.
2. Use the [▼] [▲] buttons to select the desired value from SQ 0 to SQ 9

The lower the value, the more sensitive the transceiver. The squelch is completely disabled, with a value of SQ 0.

Scanning "SCAN"
In channel mode:
1. Press the [MENU] button then the [SCN] button. The channel search will start in the direction of increasing the channel number.

2. Using the [▼] [▲] buttons, you can change the "direction" of scanning on the fly.

   Scanning stops on the channel in which a signal is present and continues if the signal stops.

   You can forcibly continue scanning by pressing one of the [▼] [▲] buttons.

   Stop scanning by pressing the [EXIT] button.

In frequency mode:
1. Press the [MENU] button then the [SCN] button. The scrolling of frequencies will start up in increments set in the 16 STE menu.

2. Using the [▼] [▲] buttons you can change the "direction" of scanning.

   Scanning stops at the frequency that has a signal and continues if the signal stops.

   You can forcibly continue scanning by pressing one of the [▼] [▲] buttons. Stop scanning by pressing the [EXIT] button.

Locking the EXIT buttons
Note! When the lock is on, only the [PTT] key remains active.

   To lock, you need to press the [EXIT] button for an extended period (>2 seconds). This function works by pressing the [EXIT] button on the front panel of the transceiver only.

   To unlock, repeat the same action.

Manually saving the frequency settings to a memory location "MEM"
Note! The function works only in frequency mode
1. Select a receiver and set the desired receive frequency. Do not forget to set the power and subtones, if necessary, set the direction and value of the transmission frequency shift.
2. Enter the menu by pressing the [MENU] button twice. Use the [▼] [▲] buttons to select the 17 CH-MEM menu item, confirm the selection by pressing [MENU].
3. By buttons [▼] [▲] select the desired memory cell, confirm the selection by pressing [MENU].

Clearing a memory location "DEL"
Note! The function works only in frequency mode
1. Enter the menu by pressing the [MENU] button twice.
2. Use the [▼] [▲] buttons to select the 18 CH-DEL menu item, confirm the selection by pressing [MENU].

3. By buttons [▼] [▲] select the desired memory cell, confirm the selection by pressing [MENU].

Front Panel Menu Operation

1. To enter the menu, press the [MENU] button twice, the display will show the name of the menu item, and to the right its number.
2. Move to the desired menu item using the [▼] [▲] buttons.
3. To change the selected option, press the [MENU] button again, and the current value of the parameter will appear in the line.
4. Select the desired parameter value using the [▼] [▲] buttons or type using the keyboard if the value is numeric.
5. To save the entered parameter, press the [MENU] button again.
6. Exit from the menu mode by pressing [EXIT] or [PTT].

Description of menu items

Menu Number	Function Name	Function Description	Values
01	R-CTC	Sets the CTCSS analog sub-tone for reception	Selectable values from 67.0 to 254.1Hz or OFF
02	R-DSCN	Sets the DCS digital subtone for reception (direct codes).	Selectable code values from D023N to D754N or OFF.
03	R-DCSI	Sets the DCS digital subtone for reception (reverse).	Selectable code values from D023I to D754I or OFF.
04	R-MOD	Opens the Speaker	QT - opens when the received CTCSS code is correct. QT + ANI - opens upon receipt of both valid codes, CTCSS and ANI. Note: The ANI ringing tone is always heard, regardless of the option selected, unless disabled in the 24 RING menu
05	T-CTC	Sets the CTCSS subtone for transmission.	Selectable values from 67.0 to 254.1Hz or OFF
06	T-DCSN	Sets the DCS digital subtone for transmission (direct codes).	Selectable values from D023N to D754N or OFF
07	T-DSCI	Sets the DCS digital subtone for	Selectable code values from D023I to D754I or OFF

Menu Number	Function Name	Function Description	Values
		transmission (reverse codes).	
08	T-DTMI1	Transmits preset DTMF code Codes transmitted by pressing the [PTT] button.	OFF - codes are not transmitted. DTMF1 - DTMF8 - one of eight preset DTMF codes is transmitted D1 + ANI - D2 + ANI - one of eight DTMF codes and an ANI code are transmitted. ANI - only ANI code is transmitted.
09	T-DTM2	Transmits preset DTMF code Codes transmitted when the [PTT] button is released.	OFF - codes are not transmitted. DTMF1 - DTMF8 - one of eight preset DTMF codes is transmitted D1 + ANI - D2 + ANI - one of eight DTMF codes and an ANI code are transmitted. ANI - only ANI code is transmitted.
10	POWER	Transmitter Power Level	"HIGH" - large (25W). "MIG" - medium (10W). "LOW" - small (5W).
11	W/NA	Channel Bandwidth	"WIDE" Chanel spacing of 25 kHz. "NARR" Chanel spacing of 12.5 kHz.
12	COMP	Comapner	"ON" Compander is on. "OFF" Compander is off.
13	SRMR	Scrambler	"ON" Scrambler is on. "OFF" Scrambler is disabled.
14	SFT	The direction of the shift of the transmit frequency relative to the receive frequency	OFF - no shift. "+" - the transmission frequency will be higher than the reception frequency. "-" - the transmission frequency will be lower than the reception frequency.

Menu Number	Function Name	Function Description	Values
			Used in conjunction with menu item 15 OFF SET
15	OFFSET	The value of the offset of the transmit frequency from the receive frequency.	Values 00.000 to 90.000 MHz. Used in conjunction with menu item 14 SFT.
16	STEP	Frequency Step	Possible values: 2.5 / 5 / 6.25 / 10 / 12.5 / 25/50 kHz.
17	CH-MEM	Saving a channel to a memory location	Values 0-127
18	CH-DEL	Delete a Channel in a memory location	Values 0-127
19	LED-SW	Backlight Operating Mode	"ON" - the backlight is always on "AUTO" - the backlight is on for 10 seconds after the last event.
20	BEEP	Button Confirmation Push Sound	"ON" - there is confirmation. "OFF" - no confirmation.
21	RING	Loudspeaker alert on receipt of ANI code	OFF - the call signal is not played. 1s-9s - the duration of the ringing tone in the speaker.
22	BCL	Disable transmission on a busy frequency.	ON - transmission is prohibited. OFF - transmission is allowed. Note: The transmission indicator on the headset is on in any case.
23	TOT	Limiting the time of continuous transmission.	OFF Possible values: 30 - 600 sec. (in 30 sec increments).
24	TONE	Repeater Open Tone	Possible values: 1000/1450/1750/2100 kHz. A tone is output during transmission by pressing one of the [▼] [▲] buttons

Menu Number	Function Name	Function Description	Values
25	DTM-TM	The interval between digits in the DTMF message	Possible values: 50/100/150 / 200mS Note: During DTMF sending, voice input from the microphone is blocked
26	SQL	Sets the SQL squelch value.	Possible values: SQL1-SQL9, Recommended value is SQL 1
27	RPT (REV)	Switching on the operating mode, via the repeater	Possible values: ON - enabled. OFF - disabled.
28	DTMF	DTMF Tone Value	8 Tones Values-
29	ANI-ID	Observer the value of the ANI-ID	ANI-ID can only be set by programing
30	AB-SW	Enabling the operating mode, dual transmit/reception	Possible values: ON enabled. OFF disabled (SIMPLEX).
31	MODE	Operating Mode	A-B Mode SCAN
32	LANGUAGE	Display Language	Chinese/English/Korean?
33	RESET	Factory Reset	RESET-NO RSET-SET Clears Menu RESET-ALL Clears Memories and Menus
34	UP-STR-COLOR	Sets the VFO A Screen Color (Upper)	BLUE/ SKY-BLUE/ BLACK/ PURPLE/ RED/ EMERALD
35	DN-STR-COLOR	Sets the VFO B Screen Color (Lower)	BLUE/ SKY-BLUE/ BLACK/ PURPLE/ RED/ EMERALD

Table 2: Menu Options

Personal and group call

1. Select menu item 04 R-MOD, option "QT + ANI" (speaker opening method).
2. Set the time of the ring signal by ANI-code, in the 24 RING menu item.

Personal call

Press the [PTT] key and hold it down and enter the ANI-code of the called station on the microphone key pad. At the end of the dialing, transmit the necessary information by voice.

Group call to specific stations

For example, the group contains stations with ANI codes: 12345, 12789, 23888.

You can only make a call to stations whose ANI code begins with 12.

To do this, press the [PTT] key and type [1] [2] [*] [*] [*] on the microphone keypad.

In this case, the call will not sound in the station with ANI-code starting with 23. Note. An asterisk [*] can replace any code digits, or even all.

Remote control of the unit
Note! You must first program the control codes using a computer (CHIRP).

In the program, the tab "DTMF Groups" Factory recommended settings.

The length of the control codes can be from 1 to 7 characters.

The length of the control codes can be from 3 to 5 characters.

Reset, Transmit Inhibit, Complete Inhibit and Monitor codes must start with "#". The master code must be the same as the identification code.

Figure 3: Example of remote-control values

Native ID Code

Individual station ID-code. It is also ANI-code (Automatic number identification).

Master Control ID Code

Master code. Used to activate control codes.

Alarm Code

Alarm code. Upon receipt of this code, the receiving remote station outputs an alarm signal to the speaker and the message "ALARM" on the display. If the ANI code is received together with this code, then it is also displayed on the display.

The alarm can be turned off by pressing any of the buttons: [A], [B], [C], [D], [PTT].

Identity Display Code

Code for outputting DTMF messages to the display.

Upon receipt of this code, the station displays on the display all received DTMF parcels after it. The code is active only during one transmission-reception.

Revive Code

Reset code for transmit and receive interlocks. ("Remote Stun Code" and "Remote Kill Code").

To activate, press the [PTT] button, while holding it, dial the code for clearing the locks (# 77) and then the master code of the required station (54321).

Remote Stun code

Transmission disable code. Prohibit transmission by a remote controlling party

To activate, press the [PTT] button, while holding it, dial the code for resetting the locks (# 33) and then the master code of the required station (54321).

The blocking is deactivated by the reset code (# 77).

Remote Kill code

Code for disconnecting reception and transmission.

To activate, press the [PTT] button, while holding it, dial the code for resetting the locks (# 44) and then the master code of the required station (54321).

The blocking is deactivated by the reset code (# 77).

Remote Monitor Code

Monitoring activation code to use the system to eavesdrop

To activate, press the [PTT] button, while holding it, dial the code for resetting the locks (# 22) and then the master code of the required station (54321).

The selected station will go into transmit mode for 7 seconds. and it will be possible to listen to their surroundings through their microphone.

In this case, the transmission indicator on the headset does not light up.

Current state
The current state of the station.
> Normal - no blocking is enabled in the remote station
> Stun - transmission from the remote station is blocked
> Kill - blocking of reception and transmission in the remote station is enabled

Manually Programming
Use the arrows on the microphone or the "CH+" or "CH-". After scrolling to an item press the "Menu" key to select that item.

Use the microphone arrows or the "CH+" "CH-" keys to move through the sub menu selections.

To set a selection press the menu key again. A long beep to confirms the selection.

Use the "Exit" key to back out of the menu.

To program a repeater in to the radio, follow these steps[1].
Step 1. Enter the receive frequency.
> Use the keypad on the microphone and enter 145.490
Step 2. Set the PL (T-CTC) Code
> Menu > Menu > T-CTC (05) > Menu
> Use the arrows to scroll through the various tones until you reach 141.3 then press "Menu"
Step 3. Set the shift direction
> Arrow up or down until SFT (14) > Menu > + - or off > Menu. it was "-"
Step 4. Set Offset
> Arrow to OFFSET (15) > Menu > enter 00.600 > menu
> (00.600 MHZ is normal Ham Offset).
Step 5. Set Power Level
> Arrow to POWER (10) > High, Mig, Low > Menu
Step 6. Press "Exit" and verify the proper operation of your programmed information.

---

[1] Example is for a 2-meter repeater with a receive frequency of145.490, a transmit frequency of 144.890, an offset of -0.6 MHZ, and a PL code of 141.3.

Step 7. Set to memory channel
Menu > Menu > CH-MEM (17) > arrow to wanted channel # > Menu > Menu > Exit

Technical Specifications

Frequency range	VHF: 136 MHz - 174 MHz
	UHF: 400 MHz - 480 MHz
Emitter class	F3E (FM)
Antenna impedance	50 Ω
Frequency stability	2.5 ppm (-10 ° C - + 60 ° C)
Working temperature	-20 ° C - + 60 ° C. -4 ° F - + 140 ° F
Voltage	13.8V (± 15%)
Current	Receive 0.3A (SOL)
	Transmit 5A (Max.)
Power	L ≈ 5 W, M ≈ 10 W, H ≈ 25 W
Maximum Deviation	± 5 kHz
Spurious radiation	<-60 dB
Receiver sensitivity	0.2 µV (at 12 dB S / N)
Audio output power	2 W (resistance 8 Ω distortion 5%)

Table 3: Specifications

Make sure the red wire is connected with the positive polarity (+) and the black wire with the negative polarity (-) of the power supply.

External speaker interface: Connect with an external speaker for better sound effect when necessary. This interface can connect with a 3.5mm single channel plug.

Antenna interface: Connect external antenna to this interface. The impedance of the antenna should be 50 Ω

Figure 4: Dimensions

Appendix A: Standard Components

Items	Quantity
Body	1
Hand Microphone	1
Rack	1
Power Cord	1
Screws and Microphone Clip	1
Instruction	1

Appendix B. CHIRP Programing

CHIRP is a free, open-source tool for programming amateur radios. It supports a large number of manufacturers and models, as well as provides a way to interface with multiple data sources and formats. (Homepage: https://chirp.danplanet.com). CHIRP runs on Windows 2000, XP, Vista, 7, 8, and 10, Max OS X, and Linux. OS X support is limited to Intel architecture. CHIRP is distributed as a series of automatically-generated builds. Any time a change is made to CHIRP, a new build is created for it. Thus, CHIRP is versioned by the date on which it was created. The latest build available should be used.

An experimental driver has been created for CHIRP specific to the BJ-318. It is based on the BJ-218 and LT725UV driver and is integrated into the CHIRP baseline. This Appendix discuss the BJ-318 unique aspects of CHIRP. For general help on using CHIRP, see https://chirp.danplanet.com/projects/chirp/wiki/How_To_Get_Help.

A commercial tool for programming the BJ-318 is available from RT Systems (Homepage https://www.rtsystemsinc.com) that runs under Windows 7, Windows 8, Windows 8.1, and Windows 10.

Download and Upload Instructions

After installing CHIRP, and before programming the radio, it is necessary to fist select the radio make, and model, and identify the specific serial port for the computer. (Figure 5).
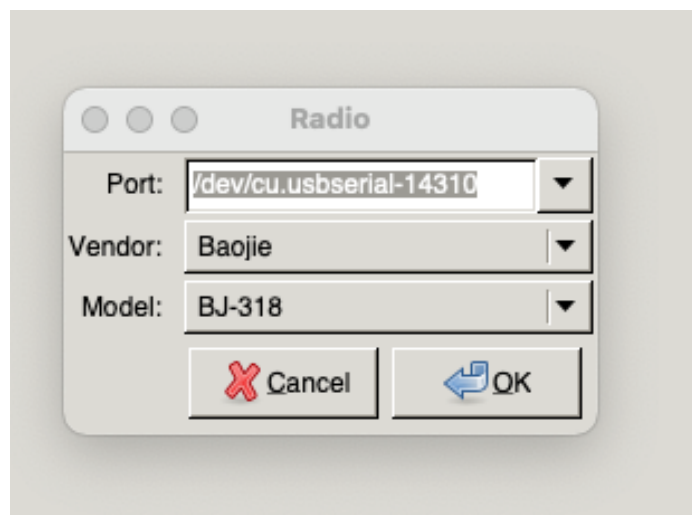
Figure 5: CHIRP Computer Port, Make and Model Selection

After selecting the proper port, make and model, it necessary to download and save an image of the unprogrammed radio.   It is critical to follow the "Notes" **(**Figure 6) exactly. This is especially true when using a programming cable with a Prolific PL2303 USB to UART RS232

Chip. Many of the very low-cost USB cables use a counterfeit Prolific USB to serial chip that have a number of driver problems. Even with non-counterfeit chips, it may be difficult to properly transfer data between the radio and computer unless the radio computer communications handshake occurs in the correct sequence.   An unmodified copy of the downloaded radio image should be saved before programing.
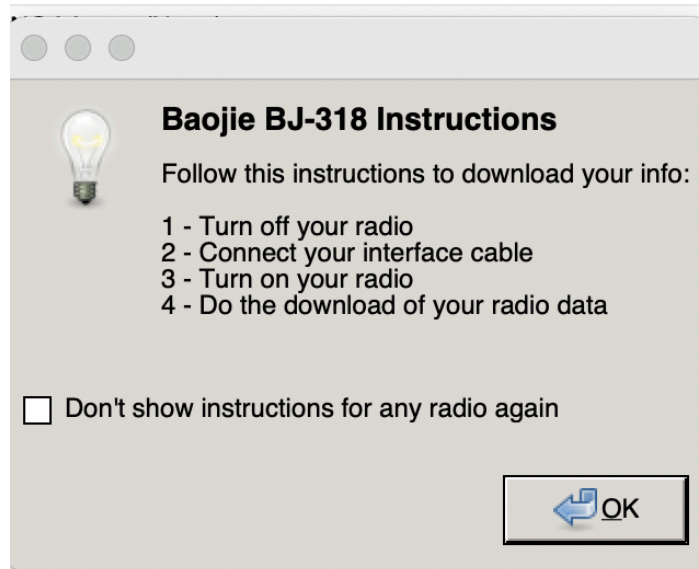

Figure 6: CHIRP BJ-318 Download Instructions (Upload Similar)

The BJ-318 sequence for both upload and download is the same.
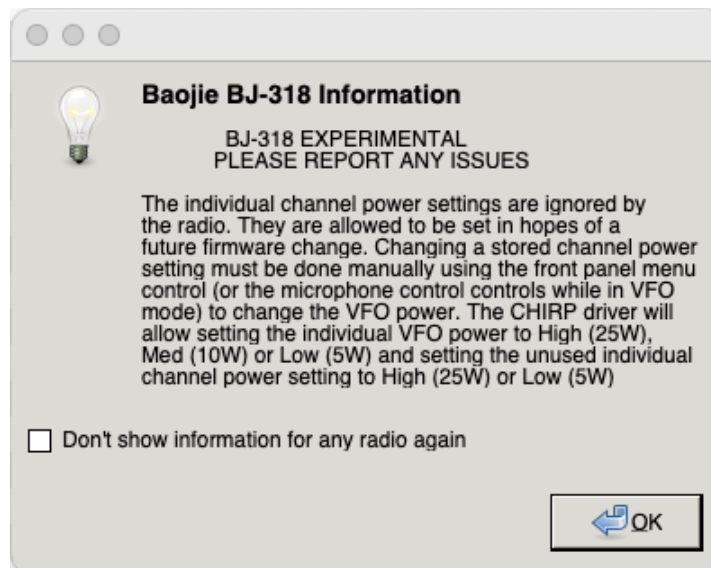
Figure 7: CHIRP BJ-318 Specific Information

BJ-318 Menu Options

Figure 8: CHIRP BJ-318 Memories Upper (Lower Memories Similar)

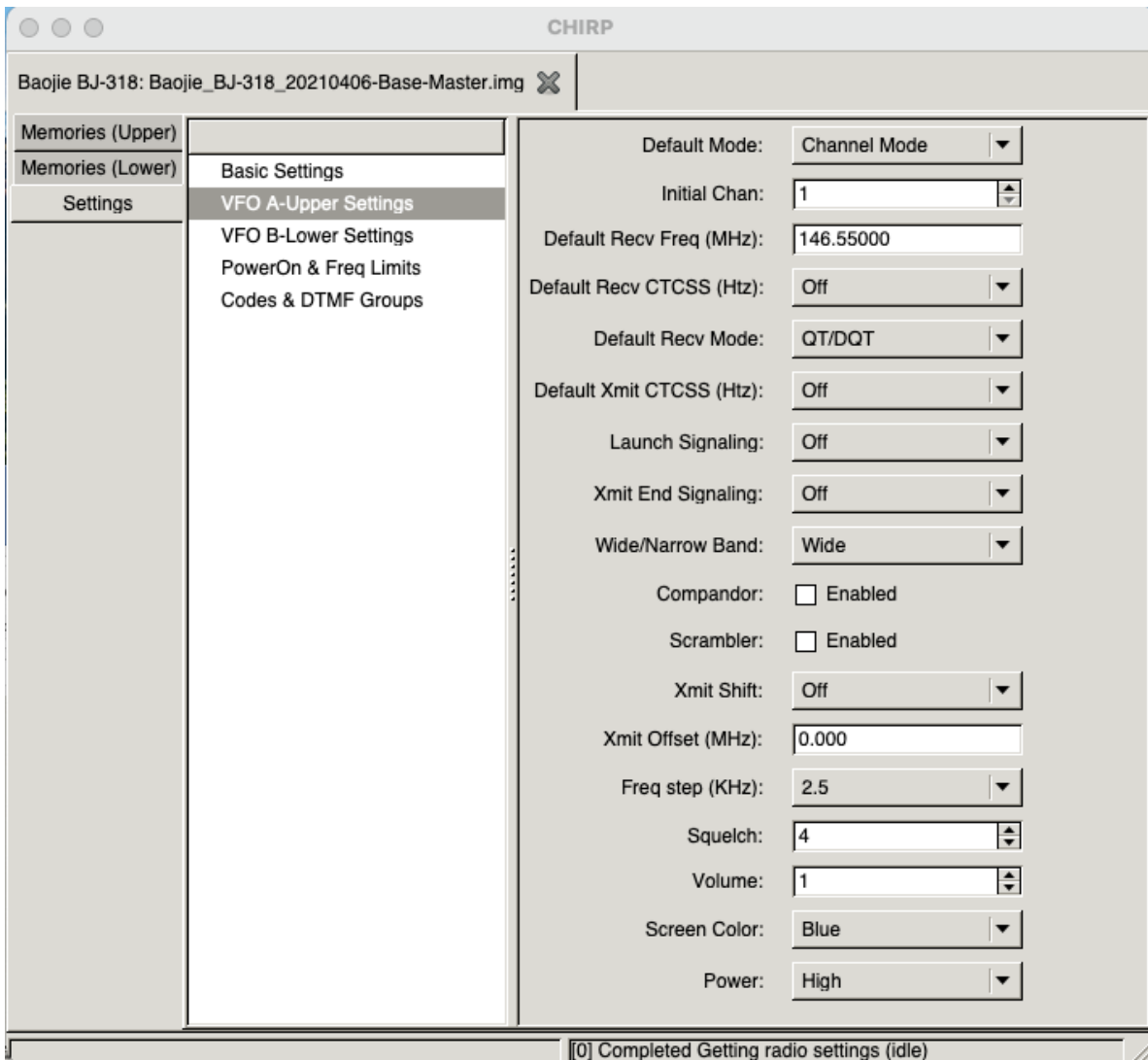
Figure 9: CHIRP BJ-318 Basic Settings

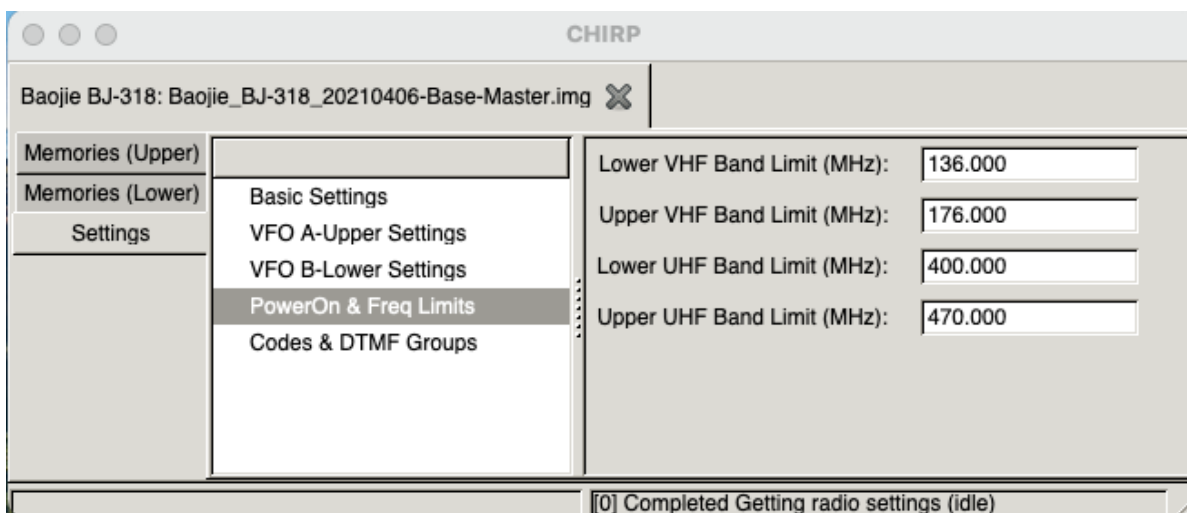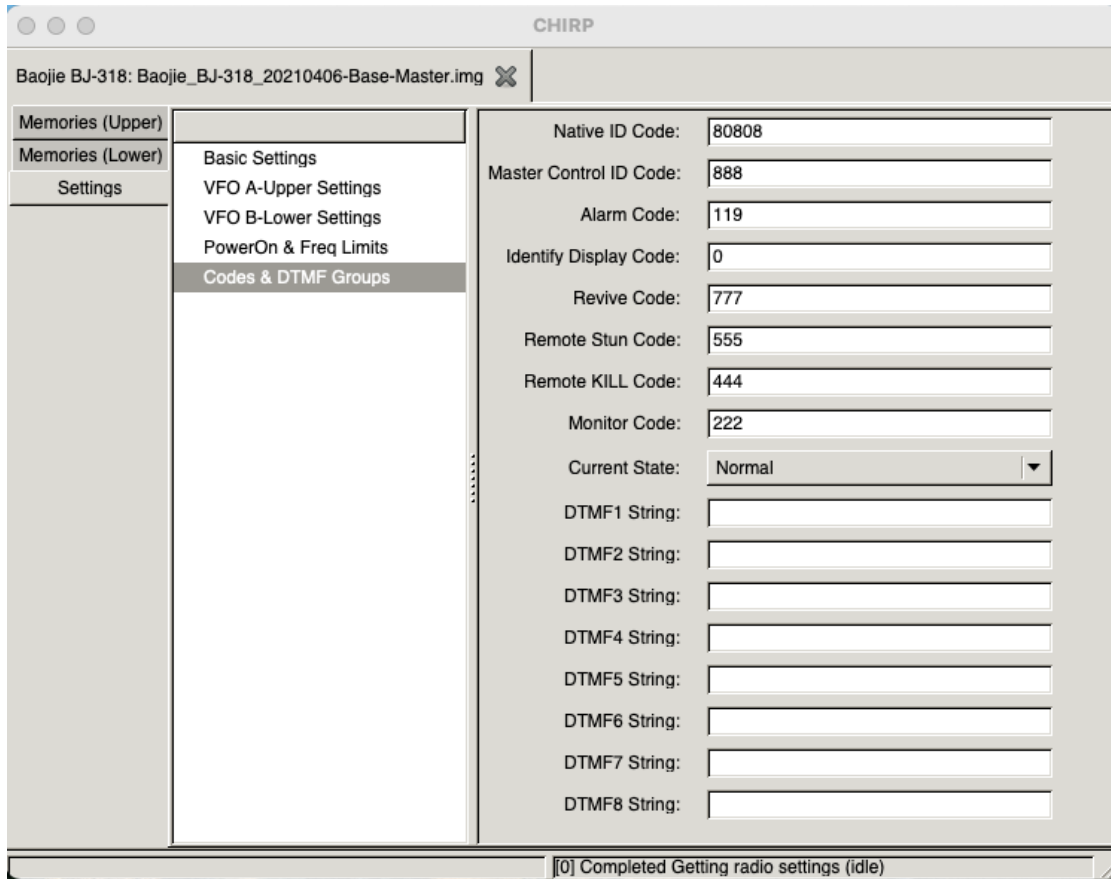*Figure 10: CHIRP BJ-318 VFO A Upper Settings (VFO B Lower Similar)*

Figure 11: CHIRP BJ-318 Power-on and Frequency Limits

Figure 12: CHIRP BJ-318 Codes and DTMF Group

BJ-318 Limitations

Setting	Limitation
Power (in Memories)	The individual channel power settings are ignored' by the radio. The BJ-318 CHIRP software only allows setting individual channel power to Low (5W) or High (25W). Once uploaded, and a channel is active, manually change power levels using microphone control in VFO mode or front panel
Upper Screen Color	BJ-318 screen colors can be set. Sky Blue and Black appear the same
Lower Screen Color	BJ-318 screen colors can be set. Sky Blue and Black appear the same

Table 4: CHIRP BJ-318 Limitations