

# BASE STATION

Dual-Band UHF / VHF Desktop Radio.

*compact*

## User Manual



**blackbox**  
2-way radios



# BASE STATION

Dual-Band UHF / VHF Desktop Radio.  
*A compact*

## DATASHEET



### SPECIFICATIONS

Frequency range: VHF: 136MHz-174MHz  
UHF: 400MHz-480MHz  
Memory channels: Up to 128 channels  
Frequency stability: 2.5ppm  
Frequency step: 2.5kHz/5kHz/6.25kHz/10kHz/12.5kHz/25kHz  
Antenna impedance: 50Ω  
Operating temperature: -20 ° C to +60 ° C.  
Supply voltage: 110v  
Dimensions: 4.25" x 4.25" x 1.5"

### TRANSMITTER

RF power: 4w/1W.  
Type of modulation: FM  
Emission class: 10KHz/11KHz/3E (W/N).  
Maximum deviation: ±5 kHz/±2.5 kHz (W/N).  
Spurious emissions: < -60 dB.

### RECEIVER

Receiver sensitivity: 0.2 µV/cf (12 dB S/N40).  
Intermodulation: 60 dB  
Audio output: 1.25 watt



**OPTIONAL:**  
Use any headset  
or speaker mic  
with the base!



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## **Basic Operation**

### **Turn ON/OFF**

Switch on the radio by turning the Power/Volume knob clockwise until a click is felt. To switch off the radio, turn the Power/Volume knob counter clockwise until a click is felt.

### **Volume Adjustment**

Rotate the Power/Volume knob to adjust volume. Clockwise to increase the volume and Counterclockwise to decrease the volume.

### **Channel/Frequency Selecting**

Press the VFO/MR key to select channel mode or frequency mode.

Press the A/B key to select the display line that you would like to change.

-Press and release the [▲] up or [▼] down key to move to the next channel or frequency step

-Press and hold down the [▲] up or [▼] down key to move through the channels or frequencies.

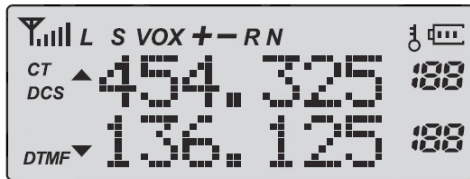
## Over View


- 1 Power/Volume Knob
- 2 Antenna
- 3 LCD Display
- 4 PTT Button & Speaker
- 5 VFO/MR (frequency mode/channel mode)
- 6 LED indicator
- 7 A/B key (switches between frequency/channel on the display)
- 8 BAND key (switches UHF/VHF band when in VFO mode)
- 9 Accessory/PC Data Port  
(to connect an external accessory or programming cable)
- 10 Power Jack (only use an approved power supply)



## Radio Over View



## LCD Display



ICON	Description
	Signal
VOX	Function 'VOX' enabled.
+ -	Frequency offset direction for accessing repeaters.
R	Reverse function activated.
N	Narrow Band (12.5mHz) selected.
CT	'CTCSS' tone is activated.

DCS	'DCS' tone is activated.
DTMF	Dual-tone multi-frequency signaling activated
▲ ▼	Current channel or frequency selected. (A or B)
188	Memory channel number.
S	Dual monitor function activated.
	Battery Level indicator
	Keypad lock function activated.
L	Low transmit power.

## Key Functions

- [PTT/Speaker]: Press and hold down the PTT/Speaker to transmit; release it to receive.
- [VFO/MR]: Press the [VFO/MR] to switch between frequency (VFO) mode and channel (MR) mode.
- [A/B]: Press the [A/B] to select the top or bottom channel/frequency on the display.
- [BAND]: Press the [BAND] to switch between UHF and VHF band when in VFO mode.  
1750Hz TONE FOR REPEATER ACCESS: If the user needs to establish long distance communications through an amateur radio repeater which is activated after receiving a 1750 Hz tone. Press and hold on the [PTT], then press the [BAND] button to transmit the tone.
- [\*SCAN] KEY: Press and Hold the [\*SCAN] key for 2 seconds to start scanning (frequency/channel).  
On repeater channels: Press the [\*SCAN] key to activate the Reverse RX TX function, it will exchange the receive and transmit frequencies.
- [# P/O] KEY: When in channel mode, press [# P/O] key to temporarily switch High/Low transmit power.  
Press and Hold the [# P/O] key for 2 seconds to lock/unlock the keypad.
- [MENU] Press the [MENU] key to view and reprogram the radio settings  
When in a menu settings press the [MENU] key to save any changes.



[EXIT]

Press the [EXIT] key to exit the menu.

[▲] [▼]

Press and release the [▲] up or [▼] down key to move to the next channel or frequency step.

Press and hold down the [▲] up or [▼] down key to move through the channels or frequencies.

When in scan mode press and release the [▲] up or [▼] down key to change scan direction.

**NUMERIC KEYPAD:** Used to change channel or frequency



Used when manually programming the radio.

While pressing PTT and transmitting, pressing any of the numeric keys will send the signal code. (Signal codes are programmed via PC software).

## How to program frequencies by using the Key Pad:

### Select Frequency Mode

Press the VFO/MR key

### Select Top Line (A)

Press the A/B Key to toggle the ▲ so that it is next to the top display frequency

NOTE: Programming lower display frequency cannot be saved.

### Select BAND

Press the BAND Key to toggle between UHF(400-480MHz) and VHF(136-174MHz)

### Enter Menu

Press the MENU Key to enter programming Mode.

### Select the Function

Press the ▲ or ▼ Key to move through the functions or enter the function # using the key pad.

### Change a Function Setting

Press the MENU Key and then use the ▲ or ▼ Key to select the Function to setting.

### Save the selection

Press the MENU Key to confirm the change.

To add a channel to Memory

Go to Menu 27 and select an empty channel to save to.

Press MENU Key to confirm “Receiving Memory”

Press exit to save as Simplex

NOTE: Any channel number that is already in Memory, must be deleted (Menu 28) before a new settings can be saved for that channel number.

<b>Menu</b>	<b>Display</b>	<b>FUNCTION</b>	<b>Description</b>	<b>Available settings</b>
0	SQL	Squelch Level	When the received signal strength falls below this level the receiver output is muted.	0-9
1	STEP	Frequency step	The increments the frequency will change when in VFO mode.	2.5 / 5 / 6.25 / 10 / 12.5 / 25kHz
2	TXP	power	The amount of RF power that the transmitter produces. High = 4 watts Low = 1 watt	HIGH / LOW
3	SAVE	Electricity Save	The ratio the receiver circuit cycles ON and OFF to conserve energy 1:1 / 1:2 / 1:3 / 1:4	OFF / 1 / 2 / 3 / 4

4	VOX	Voice Activated Transmit Gain Level	Enables you to use transmit without using the PTT. When the audio level is higher than the set VOX Gain Level the radio goes into transmit mode. 10 = Highest	OFF / 0-10
5	WN	Bandwidth	Channel spacing: Wideband 25kHz / Narrowband 12.5kHz	WIDE / NARR
6	ABR	Display illumination Time	Time that the LCD Display will light-up in seconds	OFF / 1-10
7	TDR	Dual Monitor	Enables monitoring of both A and B channels by scanning between them. (It remains on the channel until the transition ends.) The PTT is active for the channel selected.	OFF / ON
8	BEEP	Beep Prompt	Beeps when a key is pressed.	OFF / ON
9	TOT	Transmit Overtime (aka. Time Out Timer)	The maximum period of time that the transceiver is allowed to transmit continuously.	15-600 seconds Set in 15 second intervals

10	R-DCS	Receive Digital Code Squelch	Digital tone received to turn off the squelch. (un-mute the speaker) DCSS decode	OFF / D023N...D754I see DCSS Chart
11	R-CTCS	Receive Continuous Tone-Coded Squelch	Continuous tone code received to turn off the squelch. (un-mute the speaker) CTCSS decode	OFF / 67.0Hz...254.1Hz see CTSS Chart
12	T-DCS	Transmit Digital Code Squelch	Digital tone transmitted. DCSS encode	OFF / D023N...D754I see DCSS Chart
13	T-CTCS	Transmit Continuous Tone-Coded Squelch	Continuous tone transmitted. CTCSS encode	OFF / 67.0Hz...254.1Hz see CTSS Chart
14	VOICE	Voice Prompt	Voice announce setting.	OFF / English
15	ANI-ID	Automatic number identification	Identification number of the radio. Can only be set by the programming software.	5 Digits, 1-9

16	DTMFST	DTMF Speaker Tone	<p>Determines when DTMF codes are heard through speaker.</p> <p>OFF: No tones heard</p> <p>DT-ST: Only manually keyed DTMF codes are heard</p> <p>ANI-ST: Only automatically keyed DTMF codes are heard</p> <p>DT+ANI: All DTMF codes are heard</p>	OFF / DT-ST / ANI-ST / DT+ANI
17	S-CODE	PTT-ID Signal Code	<p>Selects 1 of 15 signal codes for the PTT-ID (Programming software is needed to change the pre set tone)</p>	1 - 15 (Tones are set with software only)
18	SC-REV	Scan Type	<p>TO: Time Operation - scanning will resume after a fixed time has passed</p> <p>CO: Carrier Operation - scanning will resume after the active signal disappears</p> <p>SE: Search Operation - scanning will not resume</p>	TO / CO / SE

19	PTT-ID	PTT-ID Transmit	When to send the PTT ID signal code OFF: No ID is sent BOT: The selected S-CODE is sent at the Beginning of Transmission EOT: The selected S-CODE is sent at the End of Transmission BOTH: The selected S-CODE is sent at the BOT and the EOT	OFF / BOT / EOT / BOTH
20	PTT-LT	PTT-ID Lagged Transmission	Delay the transmission of the PTT-ID in milliseconds	0 - 30 ms
21	MDF-A	Channel Mode Display Format for A (top)	CH: Displays the channel number NAME: Displays the channel name. (set with software) FREQ: Displays programmed Frequency	FREQ / CH / NAME
22	MDF-B	Channel Mode Display Format for B (bottom)	CH: Displays the channel number NAME: Displays the channel name. (set with software) FREQ: Displays programmed Frequency	FREQ / CH / NAME
23	BCL	Busy Channel Lock-Out	Disables the [PTT] button on a channel that is already in use.	OFF / ON

24	AUTOLOK	Automatic Keypad Lock	When ON, the keypad will lock if not used in 8 secs. Pressing the [#P/O] key for 2 seconds will temporarily unlock the keypad.	OFF / ON
25	SFT-D	Frequency Shift Direction	OFF: TX = RX (simplex) +: TX will be shifted higher in frequency than RX : TX will be shifted lower in frequency than RX	OFF/+/-
26	OFFSET	Frequency Shift OFFSET	Specifies the difference between the TX and RX frequencies	00.000-69.990 (MHz)
27	MEM-CH	Memory Channel Programming	Create or modify channels accessed in Channel Mode. (stored in memory)	000 - 127
28	DEL-CH	Delete Channel	Delete channels from Channel Mode. (stored in memory)	000,...127
29	WT-LED	Stand by LED Color	Display color in standby mode	OFF / BLUE / ORANGE / PURPLE
30	RX-LED	Receive Display Color	Display color in receive mode	OFF / BLUE / ORANGE / PURPLE



31	TX-LED	Transmit Display Color	Display color in transmit mode	OFF / BLUE / ORANGE / PURPLE
32	AL-MOD	Alarm Mode	Not Applicable	
33	BAND	BAND SELECTION	In VFO/Frequency mode, sets [A] or [B] to the VHF or UHF band.	VHF / UHF
34	TDR-AB	Dual Monitor Transmit	A / B Transmit selection when in Dual Monitor Mode OFF: Selected	OFF/A/B
35	STE	Tail Squelch	Eliminate squelch tail noise between	
35	STE	Elimination	radios that are communicating directly (no repeater)	OFF / ON
36	RP-STE	Repeater Tail Squelch Elimination	This function is used to eliminate squelch tail noise when communicating through a repeater	OFF / 1 - 10
37	RTP-RL	Repeater Tail Squelch Elimination Delay	Length of time after [PTT] is released until STE tail tone is transmitted	OFF / 1 - 10
38	PONMSG	Power On Message	FULL: Performs an LCD screen test at power-on MSG: Displays a 2-line power-on message	FULL / MGS

39	ROGER	Roger Tone	Transmits a tone at the end of transmission	ON / OFF
40	RESET	Reset	<p>VFO: Resets all menus to firmware default and sets the [A] and [B] VFO frequencies to firmware default.</p> <p>ALL: Resets all menus to firmware default, sets the [A] VFO frequency to the VHF band low limit and the [B] VFO frequency to the UHF band low limit, erases all channels and programs channel 0 to 136.025 MHz and channel 127 to 470.625 MHz</p>	VFO / ALL

### **To program the Base® using PC software and cable:**

1. Visit [kleinelectronics.com](http://kleinelectronics.com) to download the Base programming software (you can also contact your dealer for programming).
2. Turn off the radio and connect it to the PC with the programming cable (see figure on the right).
3. Run the programming software, then turn on the radio. Press “Read” button and change the parameter data as needed.
4. Press the “Write” button to change parameters in the radio.

## **Warranty**

Defects in material or workmanship under normal use and service, items will be repaired or replaced free of charge for 3 Year from date of sale. Simply contact your salesperson for repair or replacement.

Blackbox Radios warrants all products against **manufacturer's** defects as long as the product is still under warranty. The forgoing warranty is limited and is not applicable to: (i) normal wear and tear; (ii) defects or damage caused by misuse, accident (including without limitation collision, fire and the spillage of food or liquid), neglect, abuse, alteration, unusual stress, modification, improper or unauthorized repair, installation, alteration, wiring, or testing, improper storage, use in an unapproved device or if the serial number has been removed; (iii) use not in accordance with the documentation; and (iv) damage caused by the equipment with which the product is used. Visible physical damage invalidates warranty. Incomplete product kits will not be accepted for replacement.

## **Non-Warranty Repairs**

Blackbox Radios standard repair rate is \$60.00. This does not apply to excessively damaged units. If a damaged unit is deemed repairable, the fee may be up to \$85.00 per unit. The repair fee does not include accessories. Radio Programming fees are set at \$5.00 per unit. All goods repaired will require a signature for authorization to do the labor.

## **RETURN TO CUSTOMER (RTC ITEMS)**

Items returned that are deemed “non manufacturers defect,” have the date code missing, or are not within the proper warranty time-period may be repaired with a labor fee at the sole discretion of Blackbox Radios Items deemed “RTC” are not covered under Blackbox Radios, warranty policy and the customer will be responsible for paying the shipping costs to return the products back to the customer. If the customer does not want to receive the RTC items and pay the shipping costs, Blackbox Radios will dispose of the products.

## **Product Support**

Contact your dealer or email: [Support@kleinelectronics.com](mailto:Support@kleinelectronics.com)