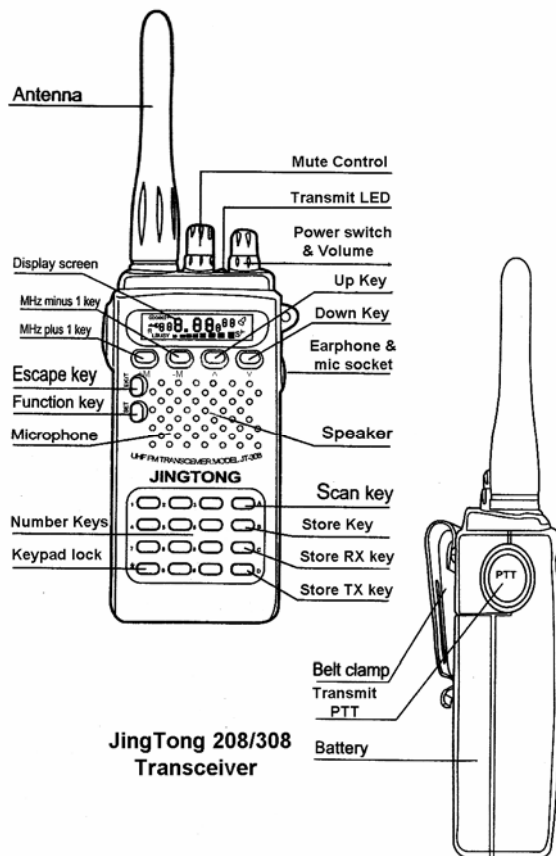


## AHARS - JINGTONG JT-208 / 308 Short Form Users Manual

### Common Features:-

- 30 Channels
- 3 operating modes
  - Direct frequency entry via keypad
  - Memory mode by channel number
  - Memory mode by frequency
- Programmable repeater shift
- Programmable repeater offset
- Split frequency operation for Tx / Rx
- Selectable frequency steps of 5/10/12.5/25Khz
- CTCSS operation with 1 of 38 codes on Tx /Rx
- Inbuilt battery saver when muted
- External earphone & microphone operation.



### General Specifications :-

- Frequency Range
  - JT-208 136-174 Mhz
  - JT-308 400-470 Mhz
- Voltage – 7.2V NiMH rechargeable battery
- Channels – 30
- Antenna Impedance 50 Ohms
- Modes – Simplex, Repeater, Split Tx/Rx
- TX Output Power 1.8 – 2.5 Watts
- Modulation FM =< 5Khz Deviation
- Spurious emission <-60dB
- Current on TX =< 600 mA
- Negative Ground
- Dimensions 100 x 50 x 30 mm
- RX sensitivity < 0.16 uV (12dB Sinad)
- Mute sensitivity < 0.2 uV
- Mute sensitivity < 0.2 uV
- Intermod rejection 50dB
- Audio Power > 300mW
- RX current =< 100 mA – muted 20 mA

### Power / Volume control :

Turn clockwise to switch on power, and adjust control for suitable volume level.

### Mute Control :

Turn anti-clockwise to un-mute & clockwise to mute receiver.

### LED indicator :

When unit is muted the LED is not lit, when receiving a signal the LED will be green and in transmit mode will indicate red.

### Setting Frequency Step size : (DF mode)

This function sets the size of the frequency step when using the up / down keys under the LCD display. Before the step size can be set the unit needs to be in the 'direct frequency' mode (DF) by pressing [SET] [1] (this should be the default).

To change the step size press [SET] [4] . Continue to press [4] and you will see the step size changing in the following rolling sequence :-

→ 25 → 125 → 10 → 5

Select the step size you require – the default 25 Khz will be adequate for setting most repeater channels. When you have selected the required step size push [EXIT] button.

### Setting Repeater Offset : (DF mode)

- The repeater offset function is accessed by pushing [SET] [7]. The frequency of offset is then entered as follows :-
- For 600 Khz (JT-208 VHF) from the keypad enter 0060 – the unit will beep and display the offset as  $0.600$  - To exit press [EXIT].
- For 6 Mhz (JT-308 UHF) from the keypad enter 0600 – the unit will beep and display the offset as  $6.000$  - To exit press [EXIT].

### Turning Repeater Offset on/off : (DF mode)

- This function toggles the repeater offset on or off, as well as setting the direction of the shift positive or negative. To activate push [SET] [6], you will see the LCD display indicate a positive shift by a very small '+' sign to the immediate upper left of the frequency readout. To set to negative offset repeat the sequence [SET] [6] and you will see the sign change to a '--' sign. To turn the repeater offset off, repeat the sequence [SET] [6] and it will be observed that the symbol has disappeared.
- With the offset turned on the unit will now transmit at a frequency  $\pm$  the offset entered, the frequency being displayed on the LCD display. This function is very useful in setting up the memory channels (see section on storing frequencies), but must be turned off for simplex channels.

### Setting Frequencies : (DF mode)

In this mode the frequency can be directly entered from the keypad or with a combination of keypad and [+M / -M ] & the [up/down  $\updownarrow$ ] keys.

- To enter a frequency (for example 146.525Mhz), the frequency may be entered by keying in 1,4,6,5,2,5 at which time the unit will beep indicating frequency has been entered. the LCD will display  $146.525$ . The unit will now transmit and receive on that frequency (provided the Offset is switched off).
- The frequency may also be altered to another frequency by using the following keys – [+M] will increment the Mhz display by 1 Mhz for each push of the key, similarly the frequency may also be decremented by pushing [-M] key.
- The Khz section can be altered by using the [UP  $\uparrow$ ] and [DN  $\downarrow$ ] keys, and will increment or decrement by the Frequency Step value set previously. If the buttons are held down for more than 3 seconds the display will increment or decrement at the step rate until the button is released.

### Storing Frequencies to Memory Channels : (DF mode)

- The unit has 30 memory channels that may be used for storing commonly used frequencies and repeater channels, complete with offset information or with odd transmit and receive frequencies. The procedure is as follows :-

#### Storing Repeater Frequencies : (offset on)

- Set unit to DF mode with [SET] [1], turn repeater offset on [SET] [6], [SET] [6] to set negative offset mode. Enter the required RX frequency (example 147.000Mhz) by entering 1,4,7,0,0,0 unit will beep, then push [B] key, this will bring up a flashing 2 digit channel number in the right hand side of the LCD. Select your required channel / memory location with the [ $\uparrow$ ] and [ $\downarrow$ ] keys, then press [C] and the frequency and offset will be stored.
- Repeat this sequence until you have entered all required repeater frequencies then turn off the repeater offset off by [SET] [6] (no  $\pm$  displayed).

### Storing Repeater or odd splits : (offset off)

- Frequencies may also be entered into memory locations without using the Repeater Shift function, which also allows odd frequency splits to be entered as well. An example may be making a memory location for a reverse repeater channel, this is accomplished by the following sequence. Using our above example, entering the reverse channel for Adelaide VK5RAD repeater, the TX / RX frequencies are reversed, the RX will be 146.400Mhz and the TX will be 147.000Mhz.
- Enter from the keypad 1,4,6,4,0,0 then push key [B], the channel number will flash, select desired channel with [ ↑ ] and [ ↓ ] keys, then push [C] key. Then enter 1,4,7,0,0,0 from the keypad and again push the [B] key then push [D] key, which writes the frequency to the transmit register. This is also the method of programming odd TX/RX splits if required.

### Using & Recalling Memory Channels : (Memory Mode 1&2)

The JT-208/308 units have two modes for using the memory channels, whilst selecting the required channel for both modes is done by the [ ↑ ] and [ ↓ ] keys, the readout is different. The two modes are set by the following sequences.

- Mode 1 : Channel Display
  - This is set by keying in [SET] [2] The display will show **CH-01** to **CH-30** if all 30 channels are programmed. Note – only the programmed channels will be displayed.
- Mode 2 : Frequency Display
  - This is set by keying in [SET] [3] The display will show the frequency programmed into the channel, in our example the LCD will show **147.000** with the channel number displayed as **CH-01** in the upper right hand corner of the display, again only the programmed channels will be displayed.

Note that on the channels that have been setup as repeater channels with the offset programmed in the ‘--’ symbol is displayed as well, where as the simplex and split channels should have no symbol indicated. Note also that direct frequency entry is not possible from channel mode, you must return to DF mode [SET] [1].

### Deleting Channels :

To delete all channels and setting press and hold the [SET] key and switch on the unit, the unit will beep and display on the LCD **CL - - -**

An individual channel may be overwritten by reprogramming a new frequency and storing it as per the above section on storing frequencies.

### Scanning :

The units have a scan mode which can scan the whole or part of the frequency range or just the channels. In the DF Mode, a frequency may be entered from the keypad as the start frequency – say 144.000Mhz, then the [A] key is held down for approximately 3 seconds at which time the scanning will start, stepping at the rate set in ‘Step Size’. Scanning will continue until a signal breaks the mute or the [A] key is pressed again, or the PTT is operated.

When in memory mode (1 or 2), the scanning function is limited to the programmed channels and loops from the highest channel back to the lowest channel continuously until mute is broken or [A] key is pushed.

### Sub Audible Tones : CTCSS

The units can be setup for CTCSS operation individually or both on TX and RX. Some repeaters use CTCSS tones to help prevent interference from adjacent services from holding the transmitter on, or you may have a favourite channel that you use with someone else and you do not want to hear other traffic on that particular channel. The tones may also be stored into individual channels.

There are 38 standard tones available as shown in the table at the end of this guide and they can be set as follows :

Setting the CTCSS frequency and activating :

- Press [SET] [9] the LCD display shows **cr-01**
- Use the [↑] and [↓] keys to select the required tone from the chart, for example if a sub-tone of 141.3Hz is required, then key up to '22', the display will show **cr-22** , then push the [EXIT] key.
- The tone may assigned to the TX function by [SET] [0] to turn it on or off, or to the RX function by [SET] [8] to turn it on or off (toggle).
- The tone will be sent when ever the PTT is pushed for the duration of the transmission, similarly, the mute will only be broken when receiving a signal with correct CTCSS tone.

It is recommended that the CTCSS tones be only put on stored channels, otherwise it will affect the operation of DF mode operation.

Table of CTCSS frequencies (Select in grey – Tone in Hz clear)

1	2	3	4	5	6	7	8
87	71.9	74.4	77	79.7	82.5	85.4	88.5
9	10	11	12	13	14	15	16
91.5	94.8	97.4	100	103.5	107.2	110.9	114.8
17	18	19	20	21	22	23	24
118.8	123	127.3	131.8	136.5	141.3	146.2	151.4
25	26	27	28	29	30	31	32
156.7	162.2	167.9	173.8	179.9	186.2	192.8	203.5
33	34	35	36	37	38		
210.7	218.1	225.7	233.6	241.8	250.3		

### Locking the Keypad :

The keypad may be locked to prevent accidental operation of the keys by [SET] [\*]

Jingtong Transceiver Key Functions			
Function	Keys	Function	Keys
Lock keypad on/off	[SET] [*]	Start scan mode	[A] or [SET][5]
Direct Frequency Mode	[SET] [1]	Store frequency to memory	[B] select channel [C]
Memory Mode (Channels)	[SET] [2]	Store TX frequency to memory	[B] select channel [D]
Memory Mode (Frequencies)	[SET] [3]		
Set step size	[SET] [4]		
Repeater shift on/off	[SET] [6]	Unknown ? turns 'R' off in LCD	[SET] [#]
Set repeater shift	[SET] [7] enter shift		
CTCSS transmit on/off	[SET] [0]		
CTCSS mute on/off	[SET] [8]	Clear all memories	Press [SET] while turning on the transceiver
Set CTCSS Frequency	[SET] [9] select code		

This table courtesy of G4ILO

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