AR8000UK The New Concept - Basic operation quick reference guide

(1) NEWUSER / EXPERT status BEEP & FUNCTION The AR8000 has been preprogrammed with defaults when shipped from the factory. Two parameters (NEWUSER/EXPERT and FUNC/2ndF) greatly affect the way in which the AR8000 microprocessor operates so careful setting is required. This procedure may be skipped should you be happy to accept the default settings. **It is strongly recommended that NEWUSER mode and 2nd Function are used during familiarisation of the AR8000 receiver. Press and hold the [FUNC] key** on the top left hand side panel. Use a combination of the UP/DOWN keys and **[DIAL]** to change the settings. Press **[ENT]** to accept the new parameters. ***(Refer to section 6-3 page 31 of the operating manual).***

(2) Entering a frequency through the keypad Press the **[2VFO]** key to first select "VFO mode" (should the receiver be scanning or searching etc). Each time the **[2VFO]** key is pressed VFO "A" and VFO "B" alternate between active and stand-by (the top frequency being active). Example of frequency entry 145.800 MHz. Press **[1] [4] [5] [.] [8] [ENT]** ***(Refer to section 6-4 page 33 of the operating manual).***

(3) Correcting frequency readout during input Should an error be made while entering frequency data (by pressing the wrong numeric key), it may be corrected using the BACKSPACE facility. This facility enables rapid correction of errors prior to the completion of entry by the **[ENT]** key. Example of frequency data correction while keying 433.250 MHz. Press **[4] [3] [3] [.] [2]** then assume **[7]** by mistake. Press **[UP>]** and the number "7" clears from the LCD. Press **[5] [ENT]** to finalise the correct entry. ***(Refer to section 6-5 page 35 of the operating manual).***

(4) Correcting incorrect frequencies after input If for any reason the currently displayed active VFO frequency is incorrect, it may be changed by two methods: Firstly the correct frequency may be input to replace the currently displayed incorrect frequency, there is no need to clear the VFO data first. Secondly the frequency data may be "edited" by means of a highlight flashing cursor. **Example of frequency data correction using the cursor:-** Start by keying in a frequency to start with: Press **[8] [1] [.] [8] [ENT]** to input 81.8 MHz. For this example let's assume that the actual frequency required is 82.8 MHz. Press **[FUNC]** and then either the **[UP]** or **[DOWN]** key to call the highlight cursor. Initially the flashing highlight cursor appears in the MHz position. Key in **[2]** to correct the current incorrect display (which is showing 81.8 MHz rather than 82.8 MHz). Alternatively use the **[DIAL]** to scroll through the digits just like a tuning dial. When the correct frequency is displayed press **[ENT]** to accept the corrected frequency data. ***(Refer to section 6-6 page 35 of the operating manual).***

(5) Changing frequency - Using the [UP] [DOWN] keys The UP / DOWN keys and rotary **[DIAL]** provide convenient methods of frequency change. The speed at which the receiver steps up or down depends upon the STEP SIZE which is default to AUTO. Should you **press and hold** either the **[UP]** or **[DOWN]** key for more than one second, the squelch will be defeated and the receiver made to tune automatically either upward or downward depending upon the key in use. Tuning will stop when the key is released. The speed of tuning using the **[DIAL]** may be increased by a factor of x10 while the "F" function legend is displayed (by using the [FUNC] key). ***(Refer to sections 6-7 & 6-8 page 36 of the operating manual).***

(6) Changing frequency STEP size The preprogramming of AUTO step size may be manually overridden so you may choose alternative settings at will or when bandplans are updated. Should you wish to change the default step size press **[FUNC] [2]**. The third line of the LCD will flash the current default size (perhaps "25.00" kHz) and the word "AUTO" to indicate default operation. The fourth line of the LCD has the legend "STEP SET" to indicate that the AR8000 is expecting you to change the step size. In NEWUSER mode, the **[DIAL]** is used to alter the STEP size. The sizes available being: 0.05 kHz (50 Hz), 0.1 kHz (100 Hz), 0.2 kHz (200 Hz), 0.5 kHz (500 Hz), 1.00 kHz, 2.00 kHz, 5.00 kHz, 6.25 kHz, 9.00 kHz, 10.00 kHz, 12.50 kHz, 20 kHz, 25.00 kHz, 30 kHz, 50 kHz, 100.00 kHz, 200.00 kHz, 250 kHz, 500.00 kHz. When the desired step size is displayed press **[ENT]** to accept the new step size.

Active frequency must be divisible by step size. There is just one small point to keep in mind, the active frequency must be divisible by the step size... in 99% of cases they will be. **Note: AUTO-STEP and AUTO-MODE are linked** to the preprogrammed bandplan data. When one of the parameters is changed from the default "AUTO" the bandplan will be ignored. This is useful for tuning through bands with unusual modes and channel steps.

To reinstate AUTO step size, the receive MODE must be returned to "AUTO" using the "MODE SET" menu which is accessed by pressing [FUNC] [3]. *In EXPERT user mode the tuning step size may also be programmed in multiples of 50 Hz (between the limits of 50 Hz to 999.95 kHz) so that unusual step sizes other than stated are possible.* ***(Refer to section 6-9 page 37 of the operating manual).***

(7) STEP OFFSET facility To ensure that the AR8000 can follow unusual bandplans, the active frequency (in VFO mode) or lower band edge (in search mode) may be offset in a positive (+) direction by half the current step size. For example, to tune from 71 MHz in 12.5 kHz steps offset by 6.25 kHz carry out the following key sequence: **[7] [1] [ENT]** to select 71.000 MHz. **[FUNC] [2]** to enter the "STEP SET" menu. Press **[PASS]** to select STEP OFFSET the legend "+" appears to the right of the word "STEP". Rotate the **[DIAL]** on the top cabinet until the "12.50" kHz step size is displayed. Press **[ENT]** to select the data input. The receiver will return to VFO mode and the frequency displayed will be updated to read 71.0062 MHz (the actual frequency is 71.006250 MHz but the LCD does not show the 50 Hz digits). This means that the displayed frequency has been offset by +6.25 kHz. Rotating the **[DIAL]** clockwise will increase the frequency by 12.5 kHz so that the new frequency will be displayed as 71.0187 MHz (the actual frequency being 71.018750 MHz). The receiver is now tuning in 12.5 kHz steps with a step offset of +6.25 kHz. ***(Refer to section 6-10 page 39 of the operating manual).***

(8) Changing receive mode The AUTO MODE defaults may me manually overridden at any time should you wish to select an alternative receive mode on any frequency. To change the receive mode press **[FUNC] [3]**. The third line of the LCD will indicate the current mode in use. A hash symbol "#" to the left of the mode indicates the current setting. The right arrow symbol ">" indicates the new mode choice which is altered by using the **[DIAL]** control on the top panel of the cabinet. To return the STEP and MODE to default, select ">AUT" and press **[ENT]**. The display returns to VFO mode. The modes are allocated in order: "NFM AM USB LSB CW AUT WFM", "AUT" refers to AUTO MODE. When "AUT" is selected, the receive mode and step size will be selected automatically using the preprogrammed AR8000 bandplan data.

Note: AUTO-STEP and AUTO-MODE are linked to the preprogrammed bandplan data. When one of the parameters is changed from the default "AUTO" then the bandplan will be ignored. This is useful for tuning through bands in unusual modes and channel steps. **To reinstate AUTO step size, the receive MODE must be returned to "AUTO" using the "MODE SET" menu which is accessed by pressing [FUNC] [3]**. ***(Refer to section 6-11 page 40 of the operating manual).***

(9) [ATT] Attenuator ON/OFF To toggle the attenuator On/Off while in VFO mode press **[FUNC] [1]** the legend "A" confirms selection and incoming signals will be reduced in strength. To toggle On/Off again just repeat the sequence **[FUNC] [1]**, the legend "A" is extinguished when the attenuator is OFF. The selection of attenuator may also be programmed into memory channels and when defining program search. ***(Refer to sections 6-12 page 42, 4-5, 22 & 23 of the operating manual).***

(10) Storing receive data into memory - memory input in VFO mode Lets assume that you wish to store the frequency of 88.3 MHz with the attenuator Off into memory bank "A" location "00" (A00) while in VFO mode. Start by selecting VFO mode then key in the frequency of 88.3 MHz, "mode and step size" are set to the default AUTO. **Press:- [2VFO]** to place the receiver into VFO mode. **[8] [8] [.] [3] [ENT]** to select the desired frequency, the mode and step size will be automatically set by the AR8000 microprocessor. **Press and hold the [ENT] key for more than one second** to enter **memory input mode**. The third line of the LCD will display the legend "BANK" and the highlight cursor will be positioned over the bank identification letter such as "A". The microprocessor will automatically select the **youngest** free memory location. You may change the bank identifier at this time by rotating the **[DIAL]** on the top cabinet or by typing in a new letter using the numeric keypad. Note: You will notice that to the right of the keypad numbers, there are small orange letters which are bank identifiers. Key 1 is "A", key 2 is "B" etc. The lower case bank identifiers may be accessed using the CASE SHIFT key **[.Aa]. Remember, if you take too long entering data (90 seconds) the display will revert to it's original condition (2VFO mode)**. Assuming that you wish to store 88.3 MHz in the very first memory channel irrespective of what may already be stored there press **[1A]** then select the first channel by pressing **[0] [0]** Next type **[ENT]** to accept the memory location A00. The highlight cursor will move to the fourth line to the right of the legend "TXT".

Should you wish to change the alphanumeric comment rotate the **[DIAL]** on the top cabinet until the chosen letter or symbol is displayed. A maximum word length of seven characters may be chosen. To move to the right and left character positions use the arrow keys. If you are happy with the alphanumeric description press **[ENT]** and the display will return to VFO mode. At any time you may abort the memory input by pressing the **[CLEAR]** key, the display will return to VFO mode. ***(Refer to section 7-1 page 45 of the operating manual).***

(11) Memory recall (M.R) - Recalling receive data from memory Once receive frequency and mode data has been stored into a memory location, its retrieval is quick and simple. Let's assume that you wish to retrieve the frequency of 88.3 MHz which has been programmed into to memory "A00" during the example in the preceding section 7-1 of the operating manual (and above). Press **[SCAN]** to place the receiver into **memory recall mode (M.R)**. The legend "M.RE" appears on the top left of the LCD to confirm operation. The receiver will display a memory channel, mode, frequency and text. If the desired memory channel is not immediately displayed it may be RECALLED by keying in the required location. To recall memory channel "A00" type **[1A] [0] [0]** there is no need to press **[ENT].** The "M.RE SELECT" menu automatically appears when the **[1A]** key is pressed so that the frequency and comments are displayed on the third and fourth lines of the LCD for easy recognition. The receiver will monitor whatever memory channel first appeared when you entered memory recall mode.

Memory channel review / hunt The **[DIAL]** may be rotated to review, hunt for and select memory channels. From VFO mode press **[SCAN]** to enter memory recall "M.RE" mode then rotate the **[DIAL]** to select the required memory channel. This is a useful tool for reviewing memory contents and hunting for a specific channel when you forget where you stored it! Should you know the location of the required memory channel, the keypad method of memory recall will be much faster. The receiver will monitor whatever memory channel is displayed in "M.RE" mode.

Note: If you have activated the PASSWORD protection, it is not possible to access memory banks a, b, c, d, e, f, g, h, i, j until the password has been keyed in each time the set has been switched On. Please refer to the PASSWORD section (9) of the operating manual for further information. ***(Refer to section 7-2 page 46 of the operating manual).***

(12) Transfer of memory channel to VFO Should you wish to tune away from the memory channel and benefit from not having to re-enter the frequency, mode, attenuator setting, channel step and step offset, the data may be quickly transferred from memory to either 1VFO or 2VFO modes. **Transfer to 1VFO** To transfer to 1VFO simply press **[ENT]**. The display will clear except for mode, frequency, attenuator status (if the attenuator is switched ON) and signal meter. Tune using the UP/DOWN keys or **[DIAL]**. **Transfer to 2VFO** To transfer to the active VFO of 2VFO mode press **[FUNC] [2VFO]**. The display will change to 2VFO mode with the chosen memory data being displayed in the upper "active" VFO position. Tune using the UP/DOWN keys or **[DIAL]**. ***(Refer to section 7-3 page 47 of the operating manual).***

(13) Editing, copying, moving & swapping channels These facilities are beyond the bounds of this guide. ***(Please refer to section 8 page 47 of the operating manual).***

(14) PASSWORD operation - memory & search banks The password facility prevents preying eyes from accessing and reviewing your memory, scan and search banks. PASSWORD PROTECTION of the AR8000UK IS NOT INTENDED AS AN ABSOLUTE SECURITY SYSTEM. The special protected banks have a small identifier a, b, c, d, e, f, g, h, j. Password operation does not affect the access of data in banks A, B, C, D, E, F, G, H, I & J. As default from the factory the "password" is not in operation so that all banks may be accessed. ***(Please refer to section 9 page 57 of the operating manual).***

(15) SCAN - scanning memory channels & banks Let's assume that you wish to SCAN the contents of memory bank "A" (channels 00-49) which have been previously stored with memory data. There are two ways to start scanning: **Firstly From "VFO" or "SEARCH" modes:** Press **[SCAN]** to enter "MEMORY RECALL" mode then press **[SCAN]** again to start scanning. **From "MEMORY RECALL" mode:** Press **[SCAN]** once only to start scanning. **Secondly From "VFO" or "SEARCH" modes:** Press **[FUNC] [SCAN]**. The legend "SCAN" is displayed on the top left of the LCD to indicate that the SCAN process has been initiated. When SCAN has been selected, ALL MEMORY CHANNELS WHICH CONTAIN DATA in the memory bank will be SCANNED irrespective of mode and frequency. ANY BLANK (empty) MEMORY CHANNELS which contain no data will be ignored (skipped). The memory bank identifier (such as "A") will be displayed on the left of the third line of the LCD and memory bank "A" will be scanned with channel numbers changing. When an "active" channel has been located (busy so the squelch opens) the scan process will temporarily pause on the active channel and the full memory location (such as "A03") will be displayed on the left of the third line of the LCD with any identifying accompanying text to the right. Finally when the channel becomes clear again (the signal disappears) and squelch closes, the receiver will wait for an additional two seconds (in default / NEWUSER status) to allow for a reply on the channel before resuming the scanning process. **Note: The key sequence [2VFO] [FUNC] [SCAN] should achieve SCAN regardless of what the receiver is doing. When stopped on an active channel, press [ENT] to transfer the memory data (frequency, mode, step, step offset & attenuator) to the VFO where you may tune away from the channel or listen to it indefinitely until you decide otherwise.** Should you wish to scan a different memory bank, select a different bank using the numeric keypad. For example, to select memory bank "B" press **[2B]**. The letter "B" will be displayed on the left of the third line of the LCD and memory bank "B" will be scanned with channel numbers changing. ***(Refer to sections 10 through 10-5 page 59 of the operating manual).***

(16) Memory bank linking, channel pass etc Many additional facilities are available in scan mode. ***(Please refer to the operating manual for further details starting from section 10-6 page 62 through section 11-7 ending page 73).***

(17) Priority operation Once engaged, the default channel used for PRIORITY is "A00" and the frequency is checked for activity every 5 seconds. First ensure that there is data stored in memory channel "A00". To engage the priority facility press **[FUNC] [4]**. This may be carried out while in SCAN, SEARCH or VFO modes. The legend "P" appears toward the centre of the top line of the LCD to indicate that PRIORITY IS ENGAGED (switched On). Once priority has been activated, the data contents of the memory channel used (default A00) may be altered without affecting the data used for PRIORITY operation which is stored separately and assumes an identity of its own irrespective of the data contents of memory A00. **Should you subsequently wish to alter the priority data, you will have to use the "SET PRI CH" menu detailed in 12-2 of this manual.** ***(Refer to section 12 page 74 of the operating manual).***

(18) SEARCH - search banks and frequency pass - Manual SEARCH between the twin VFO frequencies The simplest form of SEARCH is achieved by programming different frequencies into VFO "A" and VFO "B" while in 2VFO mode. **Starting manual search** To start MANUAL SEARCH press and hold **[2VFO] for more than 1 second**. The mode and step size will always be taken from the "active" (top display frequency) VFO rather than the stand-by (lower display frequency). **Changing the direction of manual search** Depending upon whether the active VFO frequency is numerically higher or lower then the stand-by VFO, the search will continue upward or downward. The direction of search may be reversed by rotating the **[DIAL]** or using the UP/DOWN keys. **Example of manual search** For example, to search manually between 145.000 and 146.000 MHz:- key 145.000 into VFO "A" and 146.000 MHz into VFO "B". Ensure that VFO "A" is on the active upper line by pressing **[2VFO]**. **Press and hold [2VFO] for more than 1 second**. The search process will start in an upward direction. The legend "MANU SRCH" appears on the third line of the LCD to confirm manual search is in progress. **Moving on from active frequencies** Should the receiver stop on an active frequency during manual search, you may force the search to continue by pressing the UP/DOWN keys or rotating the **[DIAL]**. **To cancel manual search** To cancel manual search press **[2VFO]** and the operating mode will return to 2VFO with the VFO frequencies of 145.000 and 146.000 MHz displayed. **Transfer of an active frequency to VFO** Should the search process stop on an active frequency, you may stop the search process by pressing **[ENT]**. The receiver will monitor the active frequency in VFO mode and may be tuned using the [DIAL] or UP/DOWN keys. To restart the manual search process from the start To start the manual search from the original frequency press [2VFO] to return to 2VFO mode than press and hold [2VFO] for more than one second to restart manual search over again. To resume manual search from the current frequency Once you have pressed [ENT] to place the active frequency into VFO mode, you may resume manual search from the current frequency. Press **[FUNC] [2VFO]** to transfer the current active frequency to the active VFO. **Press and hold the [2VFO] key for more than one second** to initiate manual search. If the frequency is still active (preventing manual search) press the **[UP]** key to force the search process forward. ***There are many sophisticated facilities available in search mode. (Please refer to sections 13 page 76 through section 14-7 page 94 of the operating manual).***