DDSVFO User Manual

Version 6.2

By PU4WLG

Introduction

This manual explains how to use the modification made to your radio. Your radio nolonger has the 16 digit channel display 1 up to 40 CH. Insted, it now has an Oled dispay capabel of graphics. Depending on the user selection, it can show channel mode or a full VFO mode.

The channel selector was also replaced with a digital encoder that has 2 funtions, one is a push putton that alows you enter, change selected information or leave the user / service menus, and select tuning steps. The other funtion is a dial that alows you to move arround in the menues or move the digits in Channel or VFO modes.

Note:

In VFO mode, you can change the frequency by and ammount in steps from 10Hz to 1MHz.

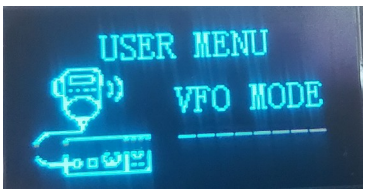
If requested, theVFO mode has an exact frequency reference for using an external transverter.

There is a possibility to unlock the service menu and the system can be modified to a limit of up to 500 negative channels and 500 positive channels. The VFO mode can be modified to run free from 1 MHz to 99 MHz, but the default for the USA CB is 26.965 MHz to 27.405 MHz . It'll depend on the adjustment made by the technician . (**But be aware that if the settings are modifey outside this range, you'll be operating illegally**).

The new system comes with user menu, polyphonic beeps, spectrum scanning function and auto-scan.

<u>If you got the complete system, your radio has a conversion or to complete reception of the HF band.</u>

<u>Illustrative photos of the DDS WLG 6.26 system :</u>



CONTENTS

FEATURES OF KNOBS AND SWITCHES AFTER MODIFICATION

The **NB/ANL** switch keep as a filter. (Depends on the modification made by the technician).

*The **CB PA** switch has no additional function.* (Depends on the modification made by the technician)

The **HI LOW** switch keep as a filter. (Depends on the modification made by the technician)

*If requested, the **BRT/DIM** switch has an exact frequency reference function in the case of using an external transverter.* (Depends on the modification made by the technician).

*Button Key **selector (Dial)** has function Step channel mode and race mode bandwidth and access to menu user/settings. (It has different time of intervals)*

***VOICE LOCK** knob has normal function and may deviate up to several kHz up or down, depends on how it was defined by the technical DDS installer .*

*Note: **VOICE LOCK** acts as a unified tuner clarifier or not unified in channel mode , but also serves as a spurious diversion in Radio Receiver mode.*

LSB / AM / USB Knob has normal function.

S/RF CAL SWR Knob has normal function.

RF GAIN / SWR CAL Knob has normal function.

VOL / SQ Knob has normal function.

Dynamike Knob has normal function.

Understanding the functions of the selector switch button.

The radio selector switch has a button now, through that single button you'll be able to fully control the digital system.

The first thing you need to learn is that this button will have different press times depending on the desired function. **(Don't be scared it is very easy to understand.)**

The button has two functionsin Channel mode. 

<u>Option 1 Step .</u> (Short press. Less than 1 second pressed)
<u>Option 2 User menu.</u> (Middle touch. 2 seconds pressed)
<u>Option 3 User menu .</u> (Touch and hold)

Suppose your radio is on Channel mode and you briefly press the selector switch button (short press). This makes the Step function of the channel mode, changing from 10 in 10 channels or 1 in 1 channel.

Note that the corresponding number will flash quickly. (Note: if you leave it standing for more than 5 seconds at the 10 in 10 channels steps, the system will automatically return to the standard 1 in 1 step).

So you have already learned that the selector switch button has the function of switching steps from channel skips to channel mode.

If you are in channel mode and the touch on the selector switch button lasts more than 1 second, you will access the user menu. To return to channel mode, just briefly touch the button.

You have already learned the functions of the selector switch button for channel mode!

In VFO mode (Running band or HF receiver) the button has 3 functions.

<u>Option 1 Step .</u> (Short press. Less than 1 second pressed)
<u>Option 2 User menu.</u> (Middle touch. 2 seconds pressed)
<u>Option 3 Scan spectrum .</u> (Touch and hold)

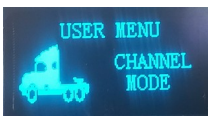
In this mode you have to briefly pressing the selector switch button, you'll only change the steps of the step, notice that the corresponding number will flash.

By pressing the selector switch button for more than 1 second and releasing it in less than 3 seconds, you'll access the user menu.

By pressing and holding the selector switch button after 3 seconds, the system will start the spectrum scanning mode. (Details on this function on page 7).

You have already learned the functions of the selector switch button for VFO mode!

In the user menu the button has 1 function to access the desired item.



<u>Option 1 Access the item .</u> (Short press. Less than 1 second pressed)
<u>Option 2 Access the item .</u> (Middle touch. 2 seconds pressed)
<u>Option 3 Access the item .</u> (Touch and hold)

All items in the user menu, can be accessed with the 3 options of pressing the selector switch button, except for the settings menu item that can only be accessed with option 2, that which is holding the button for an average of 2 seconds and let go.

See how easy it was?

Using the radio in Channel mode.

The channel mode remains the preferred one for most users, for this reason the channel mode of version 6.26 has been updated to use the maximum possible size. The numerical source of the frequency meter has been increased using 100% of the available area at the top of the display.

The digit of the channels was also updated with a numerical font occupying 100% of the available area at the underside of the display, a font was used imitating a standard 7-segment display.

To use this mode, you'll enter the user menu using option 2 of the selector switch button (see pages 4 and 5). The option 2 that accesses the user menu is by holding the button for more than 2 seconds and releasing less than 3 seconds. In channel mode you have the clarifying potentiometer that may be working with unified tuning or not, it depends on how the unification was defined in item 6 of the settings menu. You can also deactivate the frequency meter and display its code in place, to do so, turn off the frequency meter in item 5 of the settings menu. (For the settings menu, see page 9).

The channel mode has steps step (channel hop) from 10 to 10 channels or 1 in 1 channel, to switch these steps use the first option of the selector switch button (short press).

The channel mode will not constantly show the AM/USB/LSB modulation mode, but with each change in the mode switch, the system will display the current position of the switch for 3 seconds and return to the frequency meter or user name.

Using the radio in Race band mode (VFO)

The band Scan mode is an advanced mode of your DDS system, this mode has been optimized, thus the user of the radio can switch between steps which can be 10Hz up to 1MHz, also has a PTT status indicator, and it has a spectrum scanning function which, in my opinion, was the most useful feature of the system, because with it you can see how the RF spectrum is doing and you can also use auto-scan function.

The VFO mode features VFO TX/RX and the modulation mode AM, USB, LSB . It shows the frequency, user code and PTT status that will indicate if the radio is receiving , transmitting , beeping and even a possible failure in the PTT key , in this case it will show a design similar to a PTT .

If an **X** is displayed in place of the PTT status, it means that your transmission is not active and the reasons can be transmission time out (see item 8 of the settings menu) or if you are in RECEIVER RADIO mode.

To use your equipment in VFO (Running Band) mode you'll enter the user menu , select the item RUNNING BAND and give a short touch on the selector switch button.

In VFO mode you can switch steps of the scan using option 1 of the button which is a short press, if you use option 2 of the button which is a medium press, the system will return to the user menu.

A very interesting feature is the RF spectrum scan , you can use this feature in VFO (Bandwidth) mode or VFO (HFRX) mode .

To activate this mode, hold the selector switch button on option 3 , which is pressing and holding the button until you enter the spectrum scanning screen .

The system will scan frequencies at the step where you were in VFO mode , for example: If you were in 10KHz step, note that the frequency will be in infinite loop running in steps of 10 in 10KHz, if you want a smaller or greater step, do a short press in the button and the system will return to the VFO mode, set the desired to step and use again the 3 option of the button that is pressed whithout hold.

To control the amplitude of the graph in the scan, use the RF-GAIN switch on your equipment.

The scan mode has two operating options and to switch between these two options, just turn the selector switch to the left or right, turning the selector switch to the right, you will

have an auto-scan function that is differentiated by the dividing lines screen, as shown in the next figure.

In auto-scan mode , the system will scan the spectrum for any parasitic signals in the RF spectrum . Finding any signal outside the natural pattern, the system will stop at that signal and will remain infinitely as long as that signal is present ; if this signal is interrupted, the system will wait for 3.5 seconds, if the signal does not return, the system will return to scan the spectrum in search of any signal outside the natural standard. In case the system finds an unwanted signal and you want to return to spectrum scanning , just turn the selector switch to the left and wait for it to continue scanning ; to activate auto-scan again, turn the selector switch to the right.

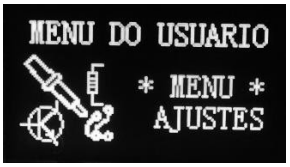
If you found someone modulating and would like to stay on that frequency, use option 1 of the selector switch button which is a short press on the button or simply press your device's PTT . Note that the system will return to Run Band mode or RECEIVER HF mode.

User menu

The user menu is the shortcut screen where you can select and enter all the functions of your DDS 6.26 system. This screen always starts with the CH MOVEL MODE item. In this menu you will always have access to the CH MOVEL MODE and RACING BAND, but the item RECEIVER RADIO and SETTINGS MENU will depend on how the system was configured, because if you have not purchased the version with HF listening option, the item RECEIVER RADIO will not be present in your system. For security, the item **MENU SETTINGS** appears only if you connect the radio holding the selector switch button.

To enter the user menu you must use option 2 of the selector switch button, which is giving a medium touch (2 seconds pressed), entering this menu you can select the available items by turning the selector switch to the right or left, to access any of the items, use option 1 or 2 or 3 of the selector switch button, the SETTINGS MENU item can only be accessed using option 2 of the selector switch button.

Settings menu



In the menu settings we have the ability to adjust 9 items. These items are basic system settings, such as changing the user name , the number of the desired beep, the time interval between PTT and beep, Anatel Table On/Off, Frequency Meter On/Off in channel mode, Unify or not unify the tuner tuning, control screen brightness, Limit time in carrier seconds, align transverter.

To access this menu , you must first enable the settings menu item in the user menu , and to enable this item, you must turn on the radio by holding the selector switch button until information appears on the screen, ready. Now that the SETTINGS MENU item is enabled , you can enter the user menu using option 2 of the selector switch button, being in the user menu, you must turn the selector switch to the SETTINGS MENU item, to enter the menu you need to use option 2 of the selector switch button.

To exit the SETTINGS MENU , you must use option 3 of the selector switch which is holding the button until you exit the settings menu.

The first item in the settings menu is the user name.

To change this item, you must use option 2 of the selector switch button.

Note that a cursor will appear over the desired position and the word ADJUST, if you want to change the cursor position, use option 1 on the button and to change the letter, you can turn the selector key to the right or left.

To change items, use option 2 on the button again or you can exit the settings menu using option 3 on the selector switch button.

The next item in the settings menu is the desired beep option that can be selected from 0 (no beep), up until 20 beep or the random beep option (DRAWN) .

To select the beep you have to use option 2 of the button, select the desired beep by turning the selector to the right or left and you can test the desired beep by pressing the PTT, if the desired beep is this, you can exit the settings menu using the option 3 on the button, or select a next item using option 2 of the selector switch.

The next item in the settings menu is the time option between the PTT and beep, this item will define a correction in the PTT intervals to correct possible “pops” in the speaker. You can use the range from 0 (no range) up to 10.

To change the interval you have to use option 2 of the button, select the desired interval by turning the selector to the right or left and you can test by pressing the PTT, if the desired interval is this, you can exit the settings menu using option 3 of the button, or select a next item using option 2 of the selector switch.

The next item in the settings menu is the Anatel table, in this item you can leave your radio in accordance with Anatel standards following the table from channel 1 up to channel 80.

To enable or disable the table, you have to use option 2 of the button, select the value 1 to enable or 0 to disable by turning the selector to the right or left, if the desired value is this, you can exit the settings menu using option 3 on the button, or select a next item using option 2 on the selector switch.

The next item in the settings menu is the frequency meter, in this item you will activate or deactivate the frequency meter in channel mode.

To enable or disable the frequency meter, you must use option 2 on the button, select the value 1 to enable or 0 to disable by turning the selector to the right or left, if the desired value is this, you can exit the settings menu using option 3 on the button, or select a next item using option 2 on the selector switch.

The next item in the settings menu is the unification of the clarifier, in this item you will unify the clarification tuning acting on the transmission and reception or you can leave the tuning acting only on the reception.

To enable or disable unified tuning, you must use option 2 of the button, select the value 1 to enable or 0 to disable by turning the selector to the right or left, if the desired value is this, you can exit the settings menu using option 3 on the button, or select a next item using option 2 of the selector switch.

The next item in the settings menu is the screen brightness control, in this item you can adjust the brightness you want .

To adjust the brightness of the screen, you must use option 2 of the button, select the value 0 up to 255 by turning the selector to the right or left, if the desired value is this, you can exit the settings menu using option 3 of the button, or select a next item using option 2 of the selector switch.

The next item in the settings menu is the carrier time control, in this item you can adjust the maximum time in seconds that your radio can transmit, if you select the value 0, the radio will not transmit .

To adjust the transmission timeout, you must use option 2 of the button, select the value 0 up to 99999999 seconds by turning the selector right or left, if the desired value is this, you can exit the settings menu using the option Button, or select a next item using option 2 of the selector switch.

The next and last item in the settings menu is the alignment of the converter, in this item you can adjust the exact reference for the desired model of transverter.

To adjust the tranverter, you have to use option 2 of the button, select the subtraction or addition value by turning the selector to the right or left, if the desired value is this, you can exit the settings menu using option 3 of the button, or select a next item using option 2 of the selector switch.
Generally used - 20MHz to transverter 40 meters. The value - 20MHz should be entered in Hz, that is, for -20MHz you will use a minus sign and 20 000 000, exactly like this: -20000000 but you can make the necessary correction if you are not already giving the exact value of the frequency reference number .

Entering RECEIVER RADIO mode

The receiver radio mode is only available if you have purchased the complete system that includes a mixing board to convert and receive frequencies below the citizen's band. To enter this mode, you have to enter the user menu using option 2 of the selector switch button and select the item RECEIVER RADIO.

If you cannot find this item in the user menu , unfortunately your system is not complete, you can check the reason by contacting your responsible technician.

The receiver mode works exactly like the Band Run mode (VFO) with the exception of the use of PTT that will be disabled in this mode and also has a feature to eliminate spurious, parallel rounds or unwanted QRMs, for this purpose the clarifying pot will act by deflecting

these unwanted signals, but if you can't keep these signals away it is because the signal is actually present at that frequency, so there is nothing to be done. For details of how to use, look on the VFO mode on page 06 .

Making use of the transverter mode

The transverter mode requires the external transverter equipment connected to your radio, this mode is just a reference to the frequency of your transconverter device, you can activate this mode through the key adapted by your technician, usually the key will be BRT/ DIM or CB/PA. The operation of the transverter mode works exactly like the RUN BAND mode (VFO) see page 06 . To make the correct alignment that way, you can check the page 12 .
