

Yaesu FTTALK v2.7

This program was written by me DJ0HF and is designed to allow simple operation of a Yaesu Ftxx Radio for the blind, using single key presses to select most options and should work with many modern Yaesu radio's, it has been tested on a Yaesu 991A but should work with the FT710, FTDX10, FTDX101D/MP and this latest version also works with the FTDX3000, FTDX5000, FTDX9000, FT891 and the FT-450. The program may work with other Yaesu transceivers. It will not work with the FT817 or FT818 for example which use a completely different command set.

The program is free to download along with this documentation and other files but of course although the program has been extensively tested (Thank you Gena M0EBP) you use it at your own risk.

If you haven't already read it then I would recommend reading the Getting Started document written by Gena (M0EBP) which is part of this package.

And although I have made this program/package free for all to use none of the files in this package may be modified in any way without my written permission.

If you have a question which is not answered by the documentation, or a problem then I can be contacted via the E-Mail address :-
dj0hf@spencerweb.net

Preparing your Radio

if you are going to use the 9 pin serial port connector on your radio then you need to set the following menu item in the radio. Cat Rate 38400 or whatever speed you want to use, though I strongly recommend 38400 Baud and then connect the 9 pin serial port to a serial port on your computer or via a serial to USB adapter to a USB port on your computer. If you are planning on using the USB connection on your radio then you also need to set the following menu items in the radio. USB GPS/232C to RS232C, then 232C Rate to 38400 and as for the nine pin connection CAT Rate to 38400 plus setting CAT RTS to off/disable. Now you can connect a standard USB cable between the USB port of your radio and a usb port on the computer. Windows will select a driver for the radio port and it may

work okay though Yaesu recommend downloading and installing the Yaesu com port driver to use the cat functions.

In a moment you will need to enter the com port number and connection speed into the configuration file, if you are not sure how to find the com port or speed, or simply want to do it the easy way then you can run the program 'find my radio' in this package which will search all the com ports and tell you the com port number and speed and will also automatically put that information into the configuration file.

FTTALK is a Windows program and should run fine on all version from XP onwards, so also Windows 7, 8, 10 and 11 though it has only been tested on windows 10 and 11.

Setting up the config file

Unzip the FTTALK folder onto your computer.

Use a text editor to change the first line in fttalk.cfg to match your comport between 1 and 99 and the second line Serial speed for the radio, I recommend 38400.

The third line power should be set to the power level you want to use when you first connect the program to the radio between 5 and 100. Initially this value is set to 100 watts and you can then vary the power with the P command and the cursor keys between 5 and 100 watts, however there are a few radio's which allow 200 watts and if you set this parameter to 200 then this will be the initial power and the P command with the cursor keys will allow you to vary the power between 5 and 200 watts.

The fourth line is swr and if set to 0, in tune mode you have to press the S key to hear the SWR but if you set it to 1 then when in tune mode the SWR is repeated continually until you exit tune mode, allowing you to tune a manual ATU.

The fifth line is ATU and when set to zero and you press T then the program will use the automatic ATU built into your radio or if your radio doesn't have an automatic ATU set to 1 the program will expect you to use an external manual ATU to tune your antenna.

So if your radio has an automatic ATU then set the SWR to 0 and the ATU to 0 then when you press T the radio will do an auto tune of the antenna and if you want the SWR just press S. However auto tuning is often very

fast and so the radio may revert to receive mode before you have a chance to listen to the SWR, in which case the radio just sends 1.0 to 1 and not the real SWR.

If you have a manual ATU then I recommend setting both SWR and ATU to 1. When you press T then the radio will be put into transmit mode with 5 watts and the SWR will be continually repeated so you can adjust your manual ATU for best match.

If you set the ATU parameter to 2 then you can combine both tuning modes. The program will first of all turn on the Auto ATU then wait about 5 seconds and then put the radio into transmit mode and you will be able to hear the SWR as often as you want even though you are using an auto ATU and can be sure the antenna is tuned correctly.

You may be using your radio with an amplifier and want the automatic atu to be turned off, in this case then you need to set the ATU parameter to 1 and if not already turned off while running the program you can use F12 to turn of the auto ATU.

As this program can be used with many different models of radio, some only cover the bands up to 10 metres, some also cover 6 metres and others 2 metres and even up to 70cm. So set the sixth parameter to the maximum band your radio can handle. So 10, 6, 2 or 70.

The seventh parameter is Auto on if set to 0 nothing happens but if set to 1 then when you start the program it will turn the radio on and when you quit the program with Q it will turn the radio off.

The eighth parameter is DCS which is set to 1 allows DCS on radio's which have DCS like the FT-991A.

Then there are parameters for repeater offsets for the bands 10, 6, 2 metres and 70cm. And are in Khz and include plus or minus. For 10, 6 and 2 metres the maximum offset is 990Khz and for 70cm it is 9.99Mhz (so 9990Khz) for all bands the minimum offset is 10Khz and 10Khz steps are used by Yaesu radio's.

Using FTTALK

Start the program with the FTTalk executable file, you can exit the program at any time by hitting the Q key, I recommend always exiting the

program with the Q key rather than simply closing the window because if you use the Auto power on and off feature the program will be unable to turn the radio off if you didn't quit with the Q key.

The program will connect with your radio and announce connected if it is successful in communicating with the radio. If when you press a key it says radio not connected then usually there is usually a problem with the chosen com port or speed, the windows driver or the cable.

You can voice the help file at any time by hitting the H key.

You put the program into various modes by a single key press and when you use the program for the first time it will initialize on 40 metres. While using the program if you return to a band you have already used then it will return to the last frequency and mode you used on that band.

In this **Frequency mode** which you can re-enter at any time by hitting the F key left and right Cursor/Arrow keys change the frequency by plus or minus 100Hz in all modes other than FM when such a small change isn't useful. In FM mode these keys increase or decrease the squelch. The up and down Cursor/Arrow keys increase or decrease the frequency by 1Khz, the Page up and Page down keys by 10Khz unless you are on 2 metres or 70cm in FM in which case the Page up and Page Down change the frequency in 12.5Khz steps. The plus and minus keys change the frequency in 1Mhz steps.

If you tune the radio using the main tuning knob the program will follow the frequency changes and if you stop tuning on a station and want to know the frequency just hit the F Key. You can get the **S meter** reading at any time by hitting the S key.

Frequency Entry Mode, hitting E will put you in frequency entry mode where you can enter a frequency between 1 and 440Mhz. The Mhz and Khz values must be separated by a full stop/point so for example to go to 14.2Mhz you would enter 14.2 and then hit the Enter key to move to that frequency, or if you want to go to exactly 21Mhz then enter 21 and then the Enter key. Entering an invalid frequency the word invalid will be voiced and the entry will be ignored. If the frequency is not seen as being near an amateur band then the pre-amp will always be switched off and the

radio put into USB mode. If the frequency is higher than 10Mhz and near an amateur band the preamp will automatically be switched on. The mode changes to whichever mode was last used on that amateur band. Pressing F will confirm that the frequency change has taken place if you want to check.

Zero Frequency, if you have been tuning manually with the knob then when you stop on a station you may not be exactly on the Khz frequency which is where most stations transmit. If you tune the audio to sound a bit high frequency and then hit the z key it will zero the frequency for you. If the audio still sounds a bit high pitched hit z again to change to the next Khz step. In CW mode hitting Z will zero the pitch so that you will be transmitting on exactly the same frequency as you are receiving on.

Modulation mode, you can change the mode at any time by hitting the M key and it will cycle through LSB/USB/CW/AM and back to LSB. Except on 10 and up where FM follows AM and then back to LSB.

Digital mode If you have a radio like the FT991A with Fusion C4FM then if you are in FM mode then hitting D will put you into the digital C4FM mode and hitting D again will take you back to FM mode.

In the following modes the up and down arrow keys work to increase or decrease the parameter chosen.

Split Frequency mode is entered by hitting the V key for VFO B when you are in any mode other than FM. This mode can be used to split the receive and transmit frequency when a DX or expedition station says it is working split. So hitting V and then you can use the cursor keys to change the frequency of VFO B and you will be receiving on VFO A and transmitting on VFO B. You can exit split mode by hitting V again.

Repeater mode if you are on a band 10 metres to 70cm and in FM mode then hitting V will put the radio into repeater mode using the offset configured in the fttalk.cfg file. You can step through the band using the page up and page down (10 Khz steps except on 2m and 70cm where they are 12.5Khz Steps) or cursor keys and the repeater mode will stay on. However if you change mode, band or use the plus or minus keys (1Mhz

steps) then the repeater mode will be turned off. So for example if you hit E and type 29.62 and hit Enter you will be on 10 metres and you can use the m key to change the mode to FM and then just hitting V will put you in repeater mode on this repeater channel, and you also then can use I to insert a CTCSS tone or DCS code.

You can of course save channels which you have set up in repeater mode and recall them later.

Band change mode by hitting the B Key. In band change mode you can go directly to any HF band by hitting one of the number keys 1 is 160Metres, 2 is 80Metres and so on with 0 being 10 metres. After selecting a band using the number keys the radio automatically returns to frequency mode. Or you can use the up and down cursor keys to change band and then F to go back to frequency mode. To reach 6 metres, 2 metres and 70cm the quickest way is to go to 10 meters with the 0 key and then hit b again and use the up cursor to go to the VHF/UHF band you want to use. Or you can use the E key for frequency entry and enter a frequency on the VHF or UHF band you want to go to. If you enter a frequency your radio can't accept then your radio and the program will stay on the last frequency you used and no change will be made.

Tip: An easy way to get to any of the VHF/UHF bands is to say for instance go to 145.5 mode FM and then hit C and 1 to store this mode and frequency in channel 1. Then wherever you are you can always go directly to 2 metre FM by simply hitting G and 1 for Go to channel 1.

The program will automatically return to the last frequency and mode you used on a band and whether split/repeater and/or CTCSS/DCS is in use.

If you are not sure which band you are on just hit the B key again to voice the band and then F will put you back in frequency mode.

Bandwidth mode by hitting the W key. In Bandwidth mode the up and down cursor keys increase or decrease the filter bandwidth in steps, this works in both SSB and CW Modes. This feature is disabled in AM and FM modes.

Power mode by hitting the P key. In Power mode the up and down cursor keys increase or decrease the power in 10W steps. After 10 watts the next lower power is 5 watts. Normally the highest power is 100 Watts but if you

have a 200 Watt radio and set 200 watts in the config file then you can vary the power between 5 and 200 watts

RF Gain mode by hitting the R Key. In RF Gain mode the up and down cursor keys increase or decrease the RF gain.

AF GAIN mode by hitting the A key. In AF Gain mode the up and down cursor keys increase or decrease the AF gain.

Keying Speed mode by hitting the K key and the radio will go to CW mode and announce the current keying speed. You can use the up and down cursor keys to increase or decrease the keying speed in steps of one word per minute. The Yaesu radio's normally have break in enabled and the program will set the radio to the lowest power setting while adjusting the speed to avoid unnecessary interference. Hitting K again will turn off keying speed and return to the mode last used and the last used power setting.

Channel Save, is used to save the current frequency, mode and things like split and CTCSS into a memory channel. There are 100 memory channels in ten banks of ten. The first bank, that is bank 0 are quick memory channels.

To save to a quick memory channel you hit C for channel save and then a number key between 0 and 9 to save the channel. If you want to save to a channel which is not in bank zero then after hitting C you hit B for bank and hit a key 0 to 9 to select the bank and you will be asked for the channel so hit a number key between 0 and 9 to save the information to the channel in that bank. As it can be difficult to remember what you have saved in 100 channels the program creates a text file called memory.txt which is in a human readable form where you can check what you have stored in each memory slot.

Go to Channel can be selected by hitting the G key and works like channel save in that if you now hit a number key between 0 and 9 you will recall the channel from that memory location in bank zero.

If you want to recall a channel from another bank then after hitting C you hit B and then a number key to select a bank and then a further number key to select the channel you want to recall.

Cycle through memory channels, if you go to a memory channel with G then each time you hit U it will take you up to the next memory channel in the selected bank. After channel 9 the function will cycle back to channel 0. You can check the frequency etc with F, or the S meter reading with S and the function will still be active. Choosing any other function like band change or if you change the frequency then the function will be automatically turned off.

Insert CTCSS Tone or DCS code hitting I when in FM mode will ask for a CTCSS or DCS number. You can read the CTCSS numbers from the CTSS.txt file and the DCS numbers from the DCS.txt file. It must be a 3 digit number then when you hit Enter CTCSS or DCS will be turned on. It will be automatically turned off if you change modes, bands or enter a new frequency. If you are setting up a repeater split then it is important to enter the receive frequency first then select repeater before hitting I to set up the CTCSS tone or DCS code.

The CTCSS or DCS status will be saved when changing bands and as part of the channel information so that you can return to it later. The program codes for DCS Normal are 500 to 603 which gives DxxN but if you add 200 to the number so 700 to 803 then the radio will use DxxI the inverted DCS value.

Tune Mode, Hitting the T key will turn on the Radio's transmitter in Tune mode so that the ATU can be used to adjust the antenna matching. If you have set the ATU parameter in the config file to 0, then the auto atu will be activated. If it is set to 1 then you have a manual ATU or you can still use this mode even with an auto ATU. Hitting T again will put the radio back into receive mode. While in tune mode if swr in the config file is set to zero then hitting S will give you the SWR of your antenna. If swr in the config file is set to 1 then the SWR will be automatically and continually repeated until you leave tune mode allowing you to match the antenna even if you are using a manual ATU. Note that when the atu parameter in the config file is set to 0 that after autotuning many radio's go back to receive automatically after about a second making it impossible to check the SWR. In this case set the ATU parameter to 1. The autoatu will still tune the antenna but the radio will remain in tune mode until you hit T again giving you time to check the SWR.

Menu Mode, you can select a menu item by hitting N for menu number and entering a 3 digit menu number and hitting Enter. You can now read the contents of this menu item by hitting Enter again or entering a value you want to store before hitting Enter and the value will be stored in the menu item.

F1 switches the **Preamp** on or off

F2 switches the **attenuator** on or off

F3 switches the **Noise Blanker** on or off

F4 switches the **Noise Reduction** on or off

F5 switches the **Auto Notch** on or off

F6 switches the **Contour Control** to Contour dip and next press to contour peak and hitting it again to Contour off. Contour starts at 1200Hz if fitted.

F7 switches the **Speech Processor** on or off (if fitted)

F8 switches the **VOX** or **CW Break-in** on or off

Level Mode, if after switching on the Preamp, Noise Blanker, Noise Reduction, Contour or Speech processor you hit the L key it will put the program in level mode and the up and down cursor keys will change the level of the last enabled option, Preamp which has 2 levels 10db and 20db, Noise Blanker, Noise Reduction, Contour between 10Hz and 3200Hz or the Speech Processor. You can exit level mode by selecting any other mode such as F, frequency mode, B, band change mode etc.

F11 puts the radio into **Mic Gain Mode** so that you can adjust the mic gain using the ALC readings from the radio.

First it is important to do the tuning operation to make sure your antenna is matched to the radio and you are not going to be transmitting into a high SWR. When you hit F11 you will hear Mic Gain and a reading for example four two meaning the mic gain is set to 42 at the moment. Then the program will voice Peak ALC and it should say 0 as we haven't begun the adjustment yet. Now press the PTT and speak normally into the microphone for about 10 seconds. Now release the PTT and the program will be telling you your peak ALC reading of between 65 and 70 seems to be good for the FT991A. If it is lower than 65 than you can use the cursor

up key to increase the mic gain or if it is higher than 70 then that could be too much ALC and you can use the cursor down key to reduce the mic gain. As the mic gain goes from 0 to 100 it is probably better to hit the key 5 times to change in steps of 5. You will now hear that the peak ALC voicing has gone back to zero. So press the PTT and repeat the operation until you get your ALC between 65 and 70. These ALC readings are just suggestions and you may need to experiment while another station is listening to your transmission and of course if they say you need to increase or decrease the mic gain then just hit F11 and use the up and down cursor keys to change the mic gain and then hit F11 again to exit the mic gain mode.

F12 switches the **Auto ATU** on and off (if fitted)

If you can think of any other features you would like to see added please let me know.