# Fox Delta

**Amateur Radio Projects & Kits**

**Mini-TNC V1.09**

***New Firmware Mini-TNC V.1.09 Tech Info Document by: Dennis, N5VRP***

***Foxdelta MiniTNC v1.09***
***Packet Radio***
***Setup***

***The first step after you building the MiniTNC v1.09 is to follow the hardware instructions building your cables. Pay close attention to the audio IN, audio OUT, and PTT lines as they are different on some radios. My radios can use the Byonics ready-made cables and they do supply power to the MiniTNC kit. No need to install a 2.1mm dc cable in this case.***

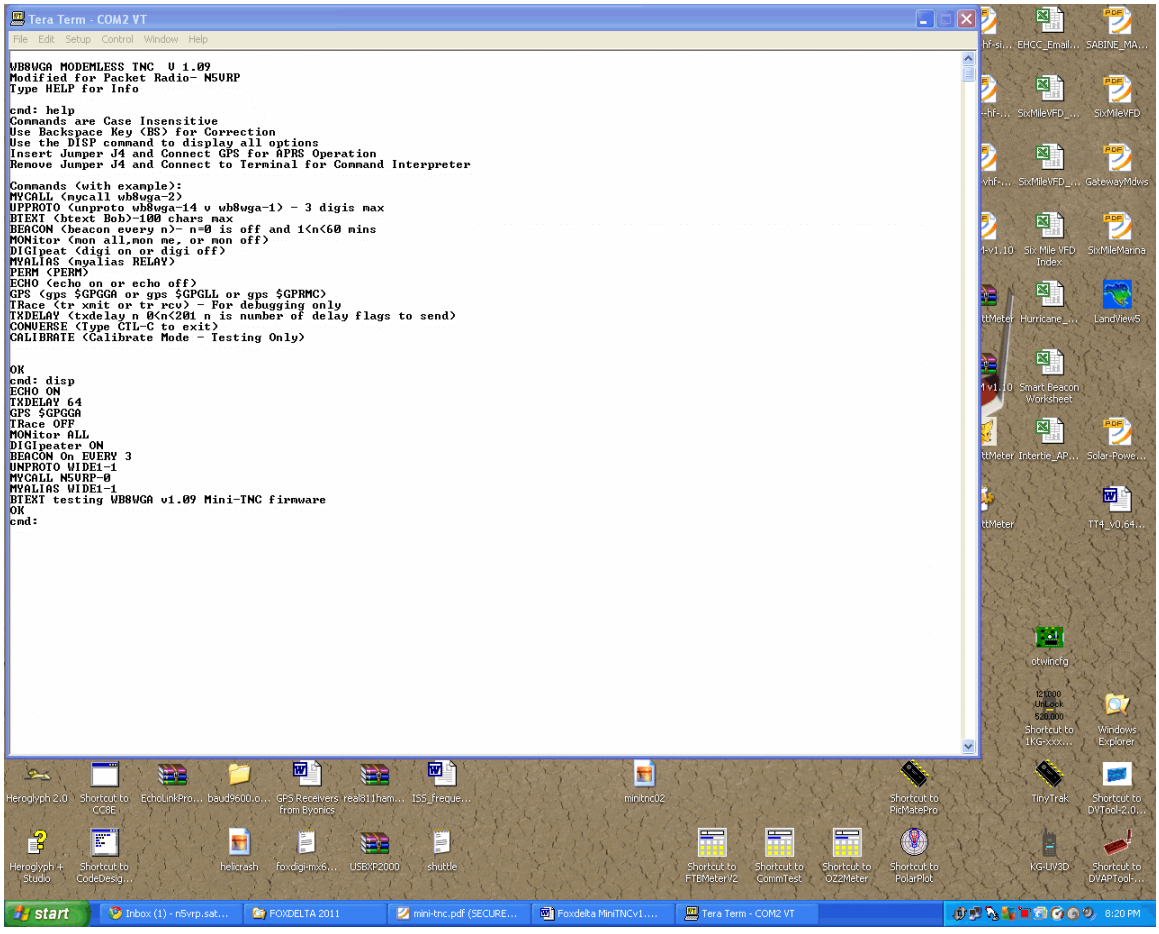
***Since most computers do not have a 9-pin D'sub serial port these days, I used a Byonics USB to Serial Converter. I installed the USB drivers according to its documentation.***

*At this time, I have the radio attached to the MiniTNC via the Byonics #HTKP (powerpole type) on both of my MiniTNCs so have someone to communicate with for this demo. KC8RPK, Ernie locally let me use his callsign to demo this program. You will see them on the following displays as we will be talking back and forth via packet radio mode using the MiniTNC stations.*

*Next, we need to setup the CONFIG PARAMS which tell the firmware what to do.*

*Below is the display of on of the setups.*
*The other setup is identical, except MYCALL which one is N5VRP-0 and the other is KC8RPK-0. All other params are identical.*

*This is for packet radio mode using the MiniTNC v1.09 firmware ONLY.*




*First, you will see the Sign-on Message showing the version level which previously did not allow packet radio encoding/transmit of packets. It would however display incoming packets.*

*Also, the terminal program used is Hyper terminal supplied with all versions of Windows. Others for Linux and Mac OS can be used. Even interesting yet is the newer Pocket-pc's and hand-held's CAN use this device to send/receive packet radio messages. Great for emergency communications and very, very inexpensive thanks to Foxdelta.*

*After the sign-on message is a display of the HELP which outlines all the commands and params with examples. These examples are a little different between APRS and mine for Packet Radio mode.*

*Keep in mind the MiniTNC will digipeat packet radio packets as it a subset of APRS text mode. APRS started with packet radio adding much needed expansion to do more than just text communications thanks to Bob Bruninga, WB4APR. But do not undercut Packet Radio as all mode of digital have there place in emergency and day-to-day communications.*

*The next display shows the command 'DISPLAY' which displays the params needed to communicate between two or more packet stations.*

*The defaults except for the following need to be set before operating.*

*To do this, set your hyperlink terminal com port to:*

*ComX (where x=1,2,3,4), 9600 baud rate, 8 bits, no parity, and one stop bit.*

*Next, turn ON your MiniTNC with firmware v1.09 PIC16F88 installed on the pcb. You should see the Sign-on Message like the above picture shows ("WB8WGA Modemless TNC v1.09 ….").*

*Then the 'cmd:' prompt will appear. This is where you enter the command params for your MiniTNC such as below.*

| | |
|---|---|
| *BEACON EVERY 3* | *means every 3 minutes a btext message will be sent.* |
| *MYCALL N5VRP-0* | *your callsign should be placed here plus ssid (0-15).* |
| *MYALIAS WIDE1-1* | *this will allow digipeating to occur. One hop.* |
| *UNPROTO WIDE1-1* | *this will allow your callsign to be replaced with other Stations included in your simplex area to communicate. (Once you beacon each station will pickup callsigns).* |

*BTEXT <enter here whatever you desire to be beaconed every x minutes set by the beacon command above. It can contain up to the maximum allowed characters (100).*

*That is all you need to do as far as setup.*

*If you do not get this far, then cabling, params (very implicit/exact) are required as they are check by the firmware. If the params are not correct to the letter it will NOT work at all. This is true for all APRS products of Foxdelta as the firmware checks for correctness.*

*Keep in mind the PIC16F88 and others are small computers on a chip and do not have terabytes to work with. They are dedicated devices and doing a simple process. More expensive devices do more, but they are also more complex to setup and use.*

## *Now, let get talking to another station.*

*If you are in a community of packet users, you will be seeing by now (depending on propagation) other stations appearing on your display decoded by the MiniTNC.*

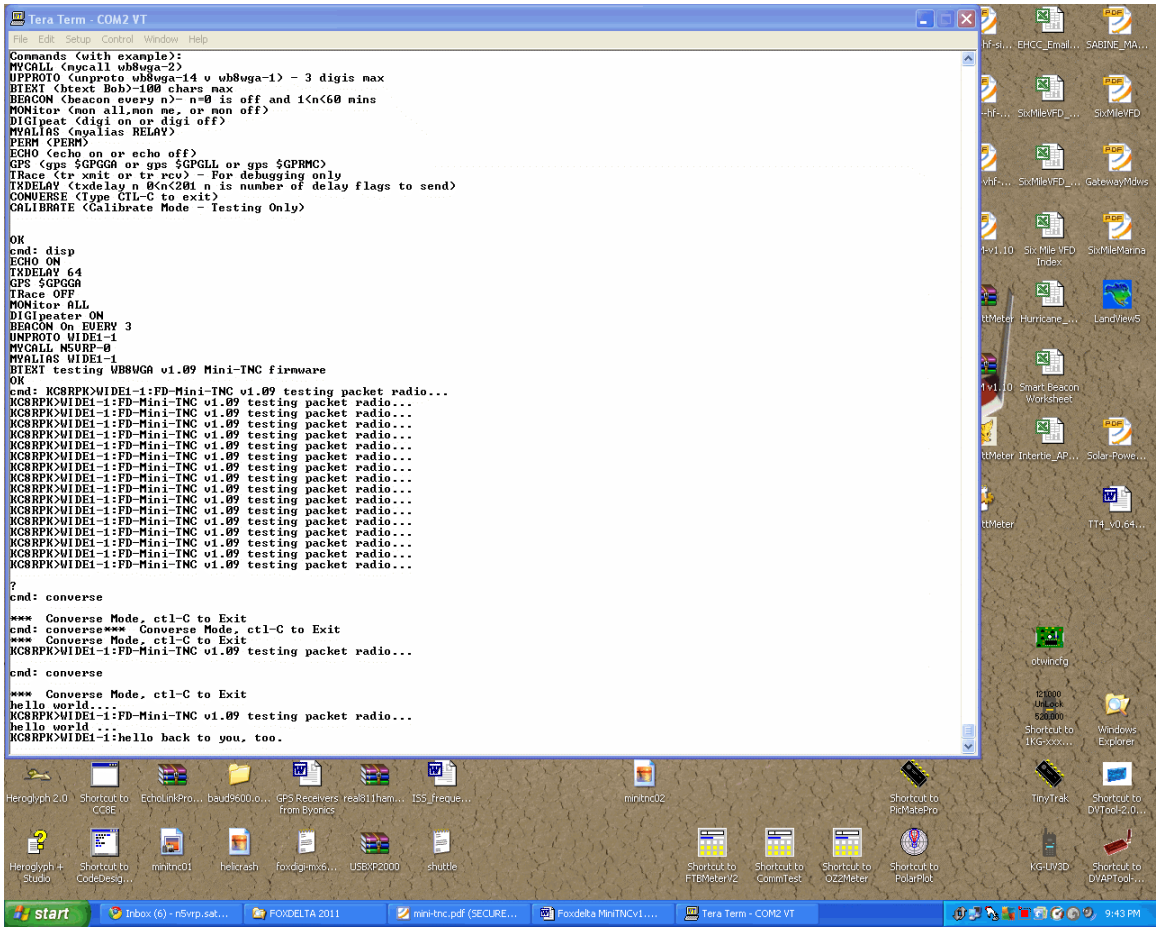
*To communicate just enter the CONVERSE mode by typing this command after the 'cmd:' prompt. To do this if receiving packets on say 145.010 or your areas packet frequency (not APRS), type CTL-C on your keyboard by holding down the CTRL key and then the 'C' key. It will then give you the CMD: prompt. At this time before you receive another packet type the word 'CONVERSE' at this time you will see a "Converse Mode, type CTL-C to exit."*

*After a few seconds it will place you cursor on the next line. You are ready to type up to 255 characters or less followed by the ENTER key which will send the message. All users listening on frequency will receive the message on their display.*

*Below is a display of all activities while I was writing this documentation. My email address for contact will be on the Foxdelta website and will try to help all.*

*Make sure you have checked all your hardware out and no chips are plugged in upside down or something. Usually problems are very simple.*

## *Mini-TNC Connectors:*




***Have a great time packeteering and keep in mind this same device WILL DO APRS as well, but you need a little different PARAMS for unproto, myalias, and btext.***

***Btext will require you longitude and latitude otherwise APRS can not place you on the map of the world. I'll write another document for that as this was only for Amateur Radio Operators, which desired to do packet radio.***

***73'***
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