

Elecraft K3 - MMTTY v.1.68 Setup Information
prepared by Tony McClenny, N3ME

My equipment consists of:

Elecraft K3 Radio:
Dell Computer

This software, designed by JE3HHT (Makoto "Mako" Mori) and updated by AA6YQ (Dave Bernstein) allows you to send and receive RTTY signals using a serial port on your computer.

Download the software (MMTTY Engine Ver. 1.68 from:

<http://mmhamsoft.amateur-radio.ca/mmtty>

This software runs on Windows XP, Vista & Windows Seven.

Elecraft K3 Radio setup and connections for AFSK RTTY:

1. Turn the Elecraft K3 transceiver "Off".
2. Connect "Line In" port on rear of transceiver to computer "Line Out" using a monaural cable.
3. Connect "Line Out" port on rear of transceiver to computer "Line In" using a stereo cable.
4. Turn the Elecraft K3 transceiver "On".
5. Press the "MENU" button briefly and "MAIN" will display on K3
Turn the "VFO B" knob until "MIC SEL" is displayed
Turn the "VFO A" knob until "Line In" is displayed
Press the "MENU" button briefly to turn off the "MENU"

The line-in level, which is adjusted using the "SPEED/MIC" knob located on the front panel of the K3, should be adjusted as you transmit using MMTTY and adjusted for five (5) bars on the ALC meter.

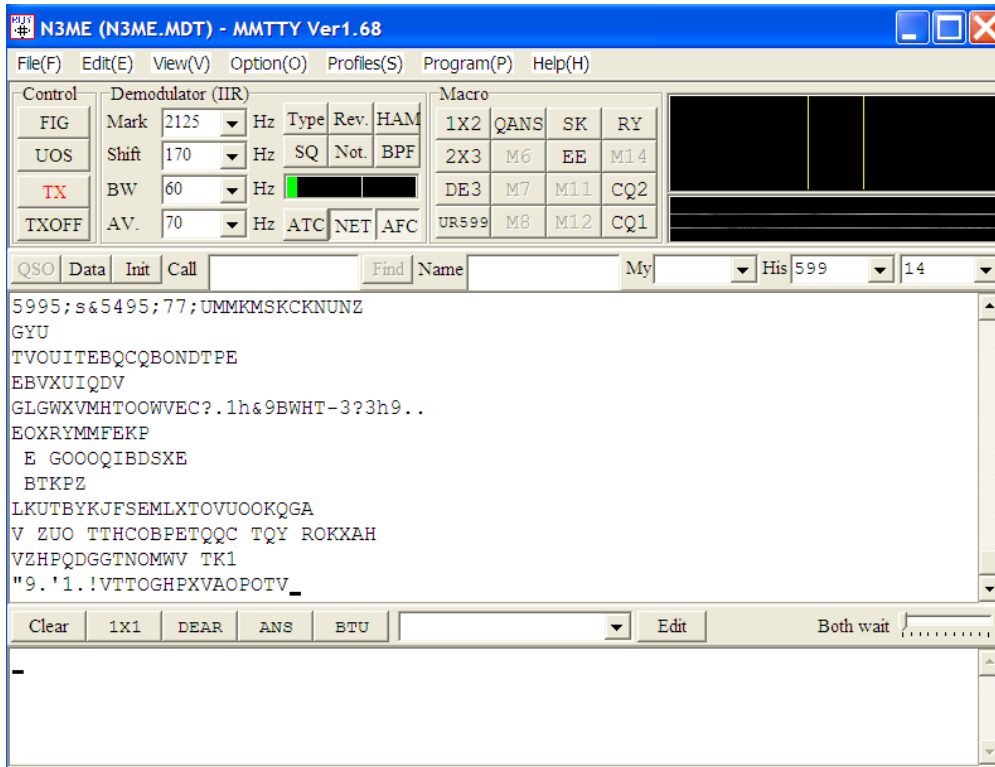
6. Press and hold the "MENU" button until "CONFIG" is displayed on the K3
Turn the "VFO B" knob until "RS232" is displayed
Turn the "VFO A" knob until "38400 b" is displayed
Press the "MENU" button briefly to turn off the "MENU"
7. Turn the "CMP PWR" knob on the K3 transceiver to $\frac{1}{2}$ maximum transmit power level
Press and hold the "VOX" button to set to "PTT"
Press the "MODE" button repeatedly to set "MODE" to "DATA"
Press and hold the "DATA MD" button until "45 bPS" is displayed on the K3
Turn the "VFO B" knob until "AFSK A" is displayed on the K3
Briefly press and release the "DATA MD" button
The transceiver is now set for "AFSK RTTY" operation for as long as the "MODE" remains set to "TX DATA".
8. Press and hold the "PITCH" button and set "MARK/SHIFT" by turning the "VFO A" knob. It is suggested to use "2125 - 170". You must also configure the MMTTY software to the same "Mark/Shift" setting.
9. Press the "TEST" button so the K3 display shows, "TX TEST". Then transmit RTTY and view the ALC Meter. The level of input from the computer sound card should display 4 solid bars and the 5th bar should blink on and off. If your level is below or above this display level, turn the "CMP/PWR" knob to adjust to this level. At present, the level is "6".

When the level is set correctly, press the "TEST" button to return the K3 to "TX NORM".

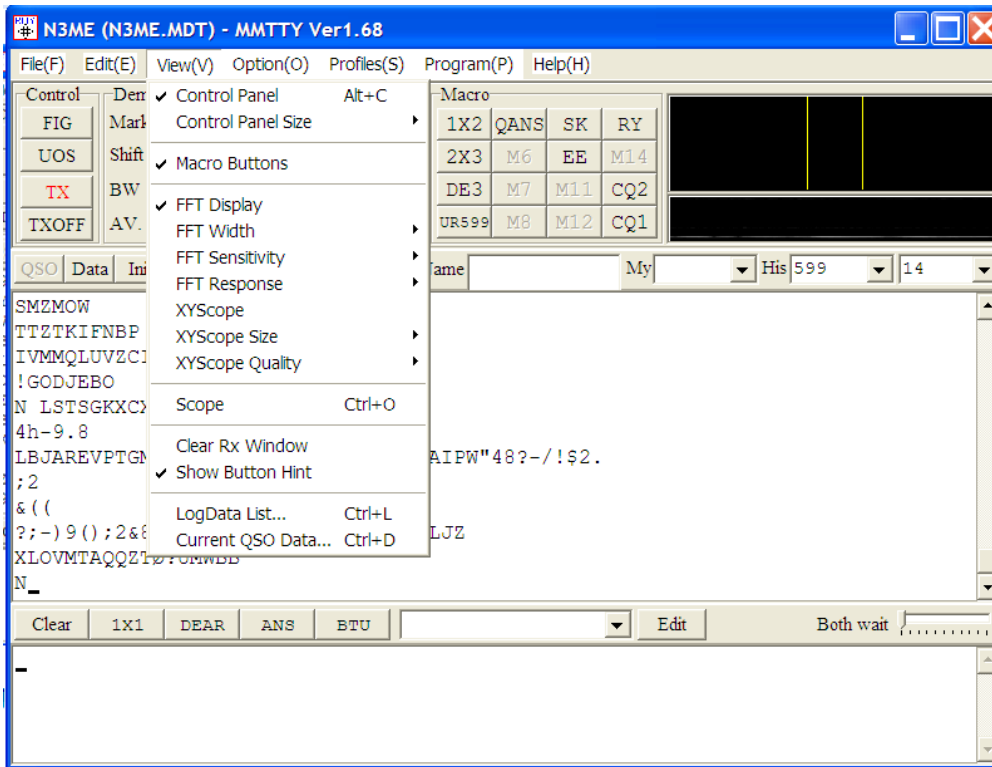
10. Select the desired filter(s) using the "XFIL" button.

MMTTY Software Setup:

From Main Menu



Click on "View(V)



Place checkmarks as shown in the above picture.

Click on "Control Panel Size" and select "Small"

Select "FFT Width" as "Auto"

Select "FFT Sensitivity" as "Lower"

This is contrary to what you would think, but "Lower" provides the most sensitivity

Select "FFT Response" as "Medium"

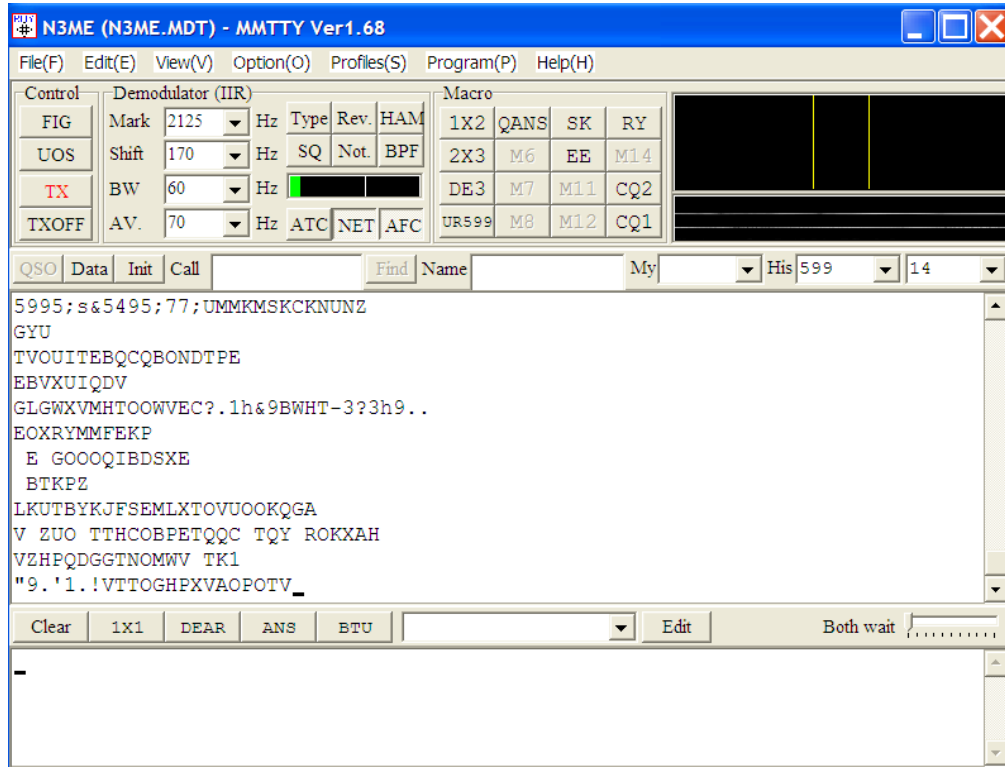
Checkmark "XYScope"

Select "XYScope Size" as "Big"

Select "XYScope Quality" as "Highest"

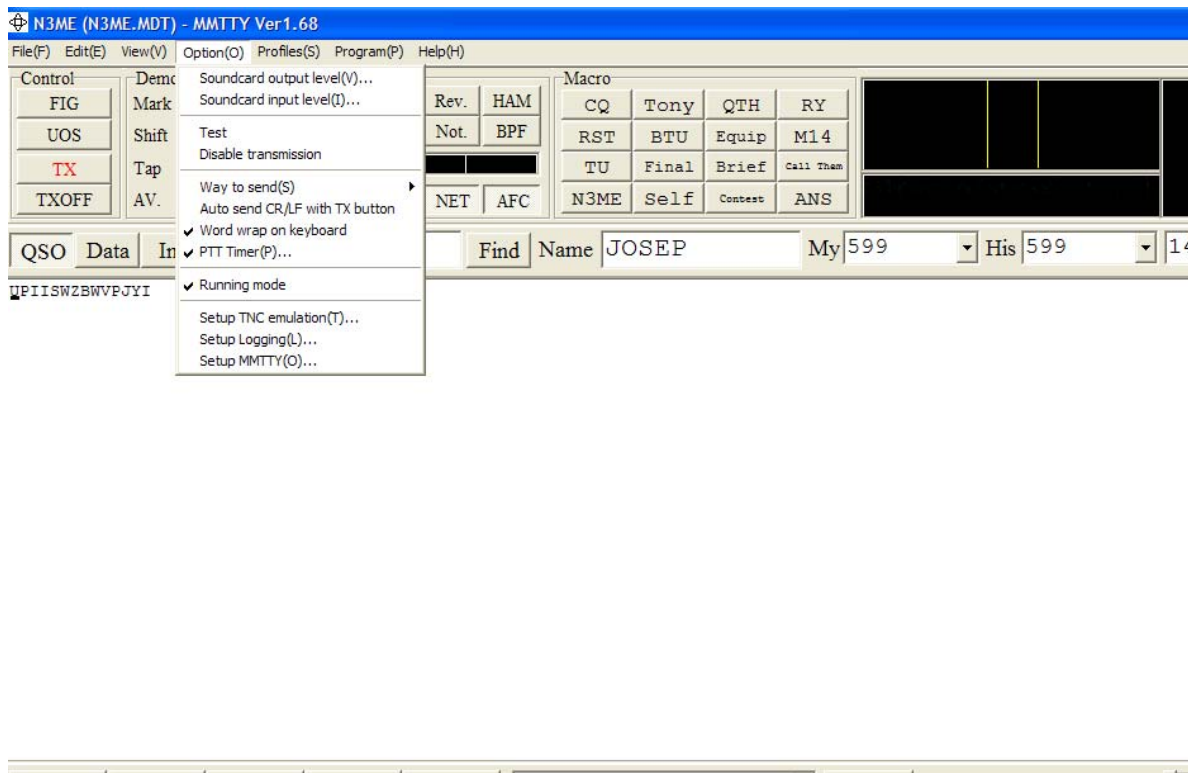
Checkmark "Show Button Hint"

Note: While following these next instructions, the MMTTY software will constantly close the "Option(O)" menu and you will have to return to the menu bar and click on "Option(O)" to continue the necessary setup.



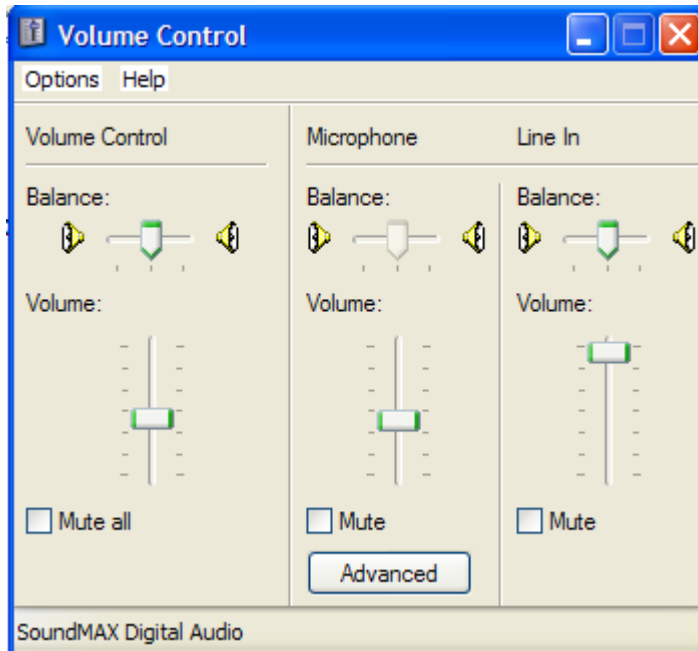
From Main Menu

Click on "Option(O)"



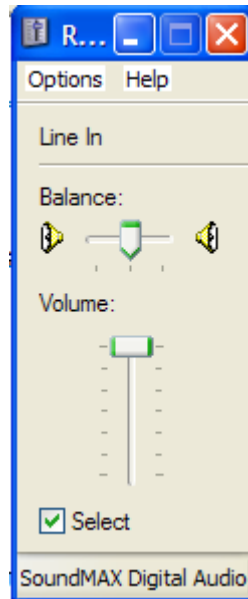
From the "Option(O)" Menu

Select "Soundcard Output Level(V)



Go to the "Line In" Balance and set as shown in above picture

From the "Option(O)" Menu
Select "Soundcard input level(I)..."



Go to the "Line In" Balance and set as shown in above picture

Checkmark "Line In" ***If this is not set, MMTTY will NOT receive RTTY***

From the "Option(O)" Menu
Left click on "Test", if you wish to test the interface
Characters will be displayed on the MMTTY screen, if the software is working
Left click on "Test" again, to stop the interface test

From the "Option(O)" Menu
Do NOT check "Disable Transmission" as MMTTY will not transmit

From the "Option(O)" Menu
Click on "Ways to send(S)"
Select "Character Out"

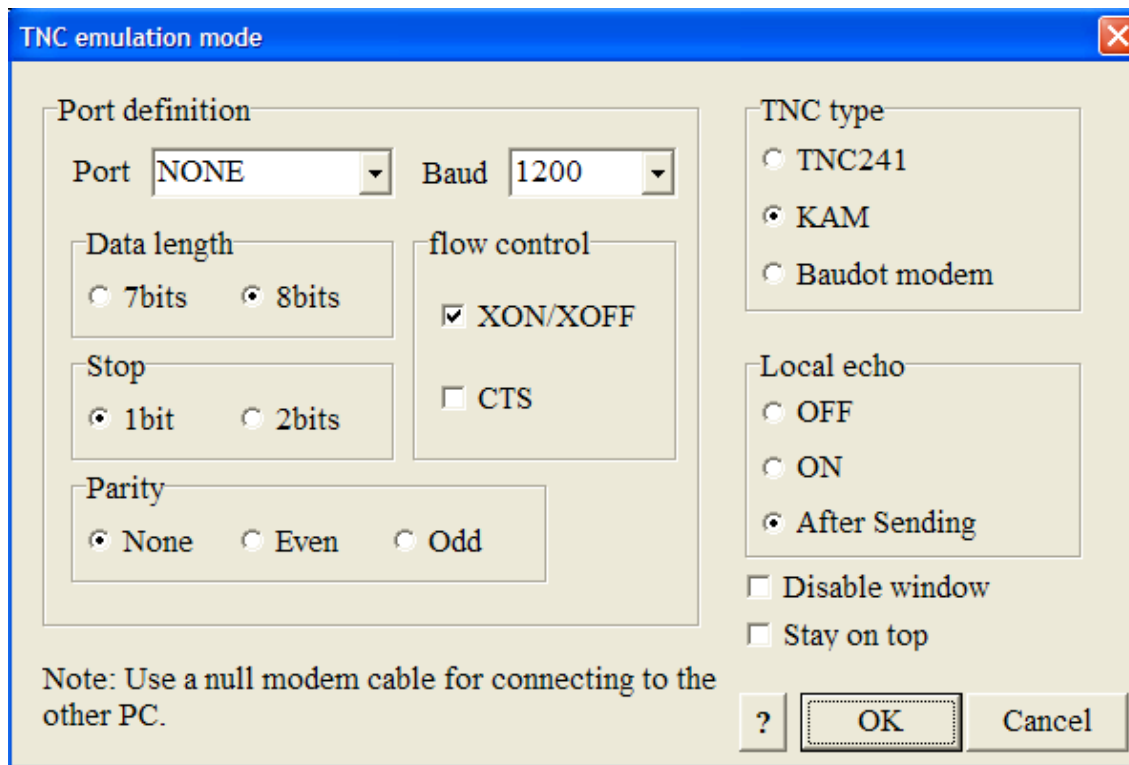
From the "Option(O)" Menu
Do NOT select "Auto send CR/LF..."

From the "Option(O)" Menu
If there is not a checkmark in front of "Word wrap on keyboard", left click on the text

From the "Option(O)" Menu
Use the PTT timer value default setting of "60"

From the "Option(O)" Menu
Use the default setting of "Running Mode"

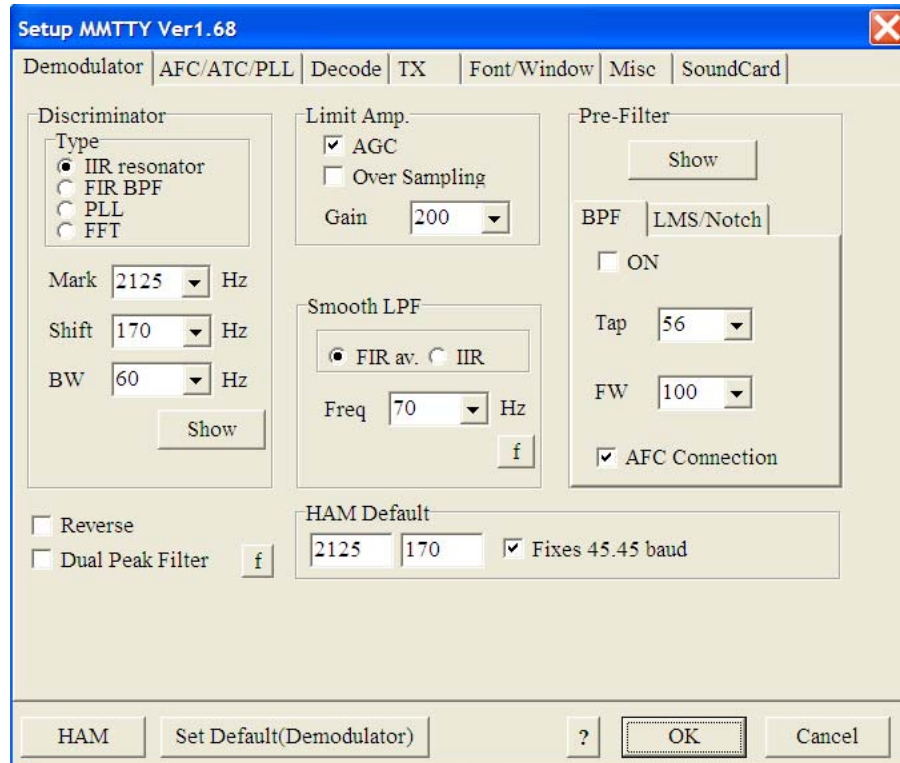
From the "Option(O)" Menu
Left click on "Setup TNC Emulation"



Use the default settings

From the "Option(O)" Menu
Left click on "Setup Logging (L)..." (if desired)

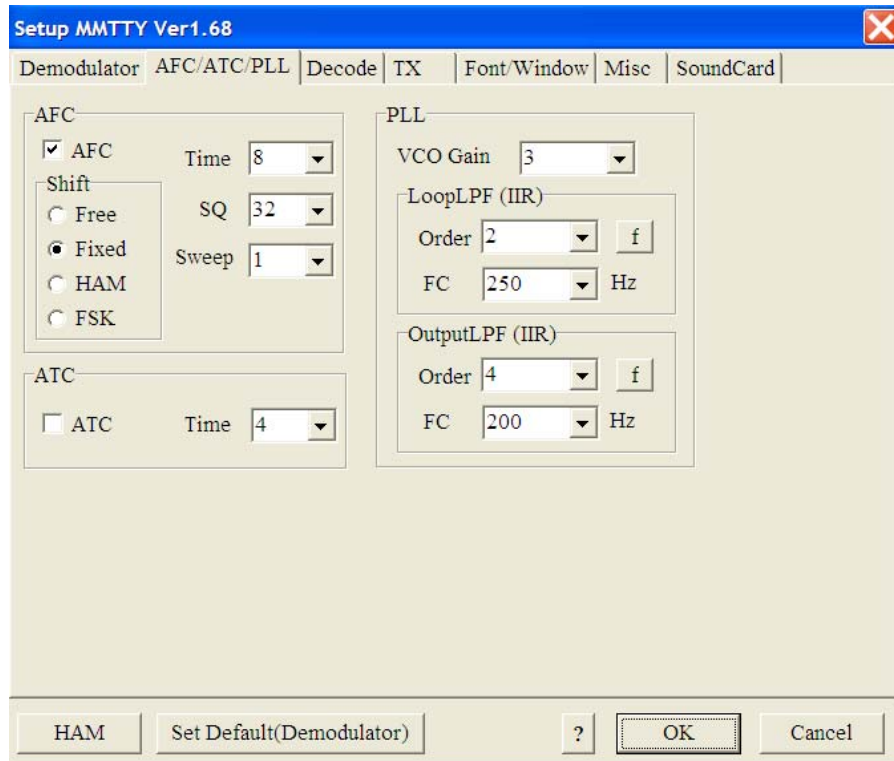
From the "Option" Menu
Select "Setup MMTTY (O)..."
The following window will display



Select "Demodulator" tab

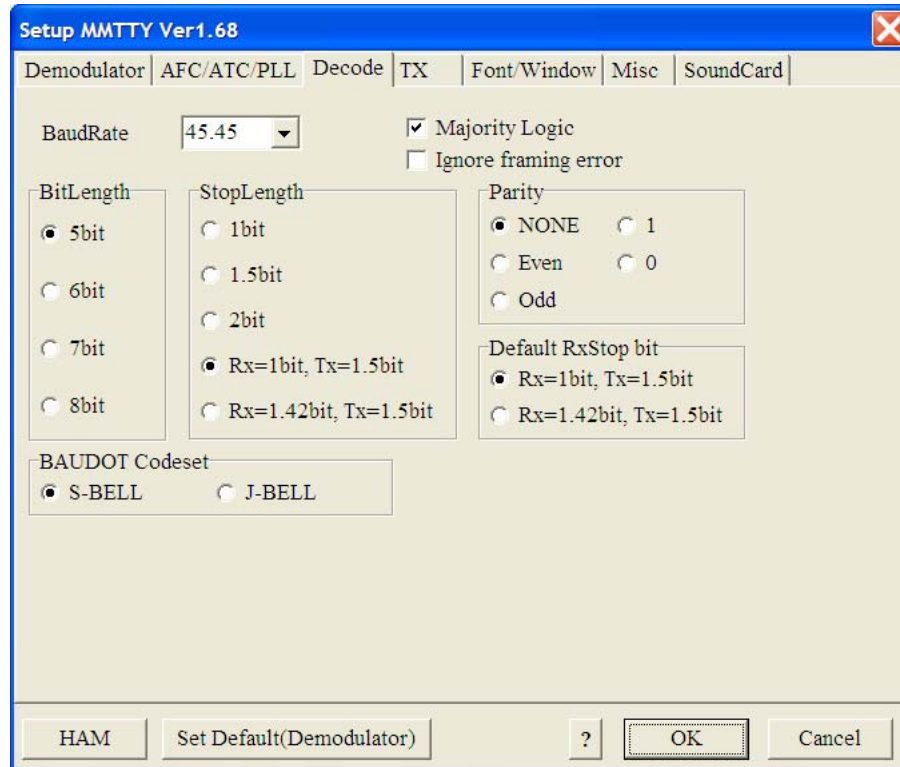
Note: The "Demodulator" settings are program defaults.
Do not change any settings on this tab.

Select "AFC/ATC/PLL" tab



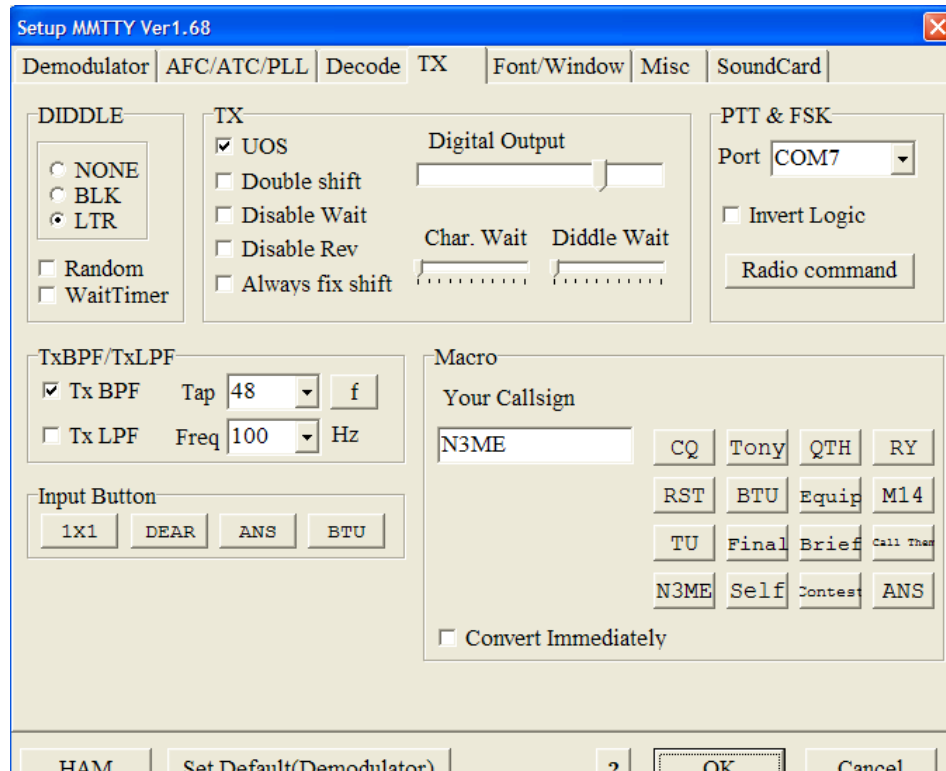
The checkmark in the AFC box causes MMTTY to track the incoming signal. With AFC and NET (selectable from the main program screen) turned on, MMTTY will track the incoming signal and keep you transmitter locked to the received signal when using AFSK.

Select "Decode" tab



The default setting work very nicely.

Select "TX" tab



Set "Your Callsign" N3ME (replace with your callsign)

You can edit Macros now and/or later

Set "PTT Port" COM7 (replace with port used on your computer)

Select "Radio Command" box

Radio command

Port definition

Port: NONE Baud: 38400 Char. wait: 0 ms

Data length: 7bits 8bits

Stop: 1bit 2bits

Parity: None Even Odd

flow control: XON/XOFF CTS

DTR/RTS: PTT

Commands

Init:

Rx: RX;

Tx: TX;\w10

VFO polling: KENWOOD (use auto info)

Frequency offset: OFF LSB USB

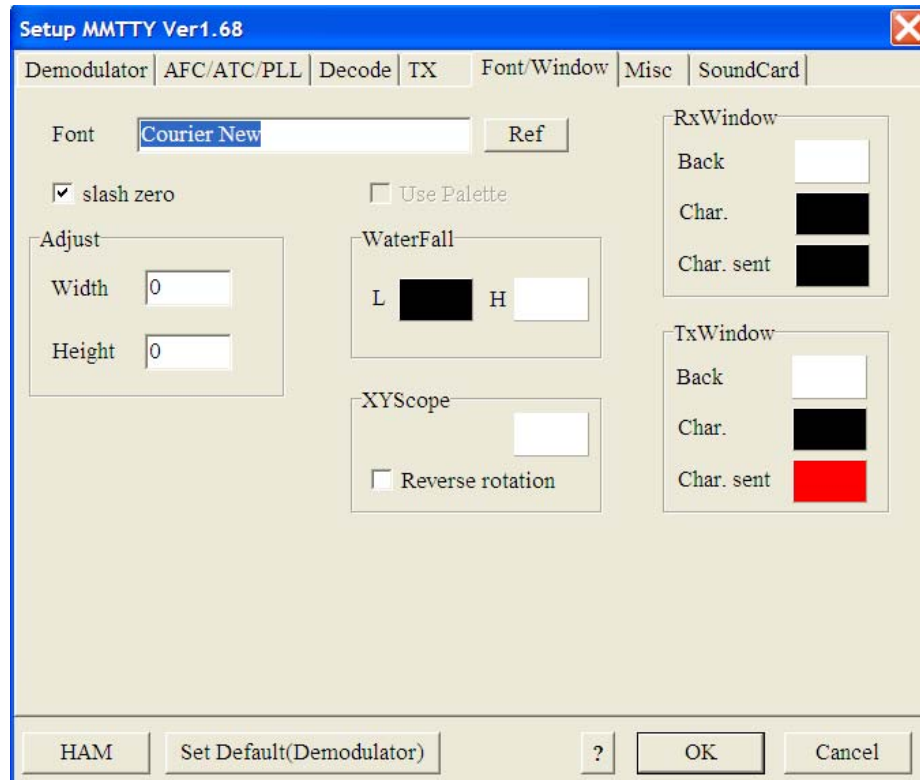
Polling interval: 1 s

KENWOOD Load Save ? OK Cancel

Note: "Commands" are entered automatically, if you select "Kenwood, Elecraft" in the radio box located in the lower left corner of the window.

Click on "OK" to return to "TX Window"

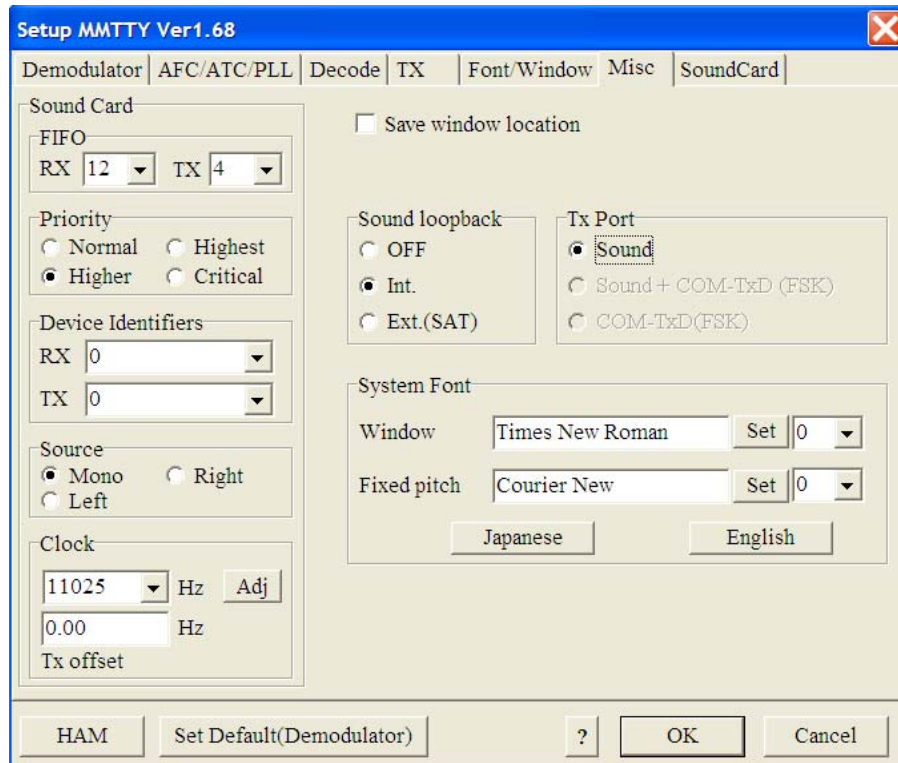
Select "Font/Window" tab



You can experiment with fonts, if you wish.

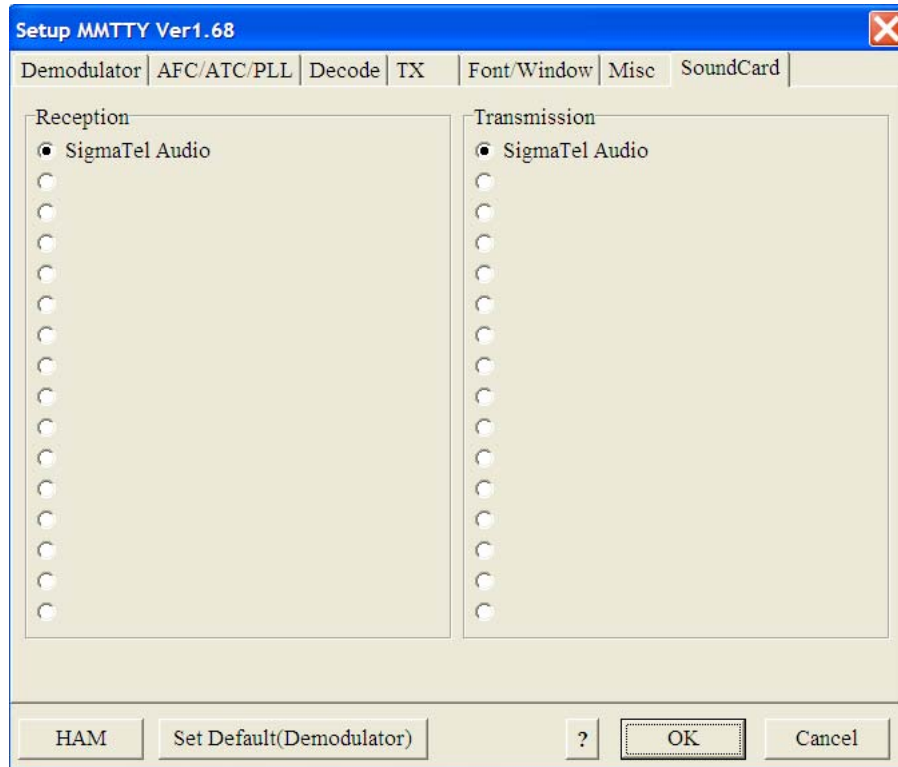
Checkmark the box "slash zero".

Select "Misc" tab



Note: If you get a lost sound indication in the MMTTY window and the program stops responding to RTTY, increase the priority from "Higher" to "Highest". This may also make the transition from RX-TX-RX smoother.

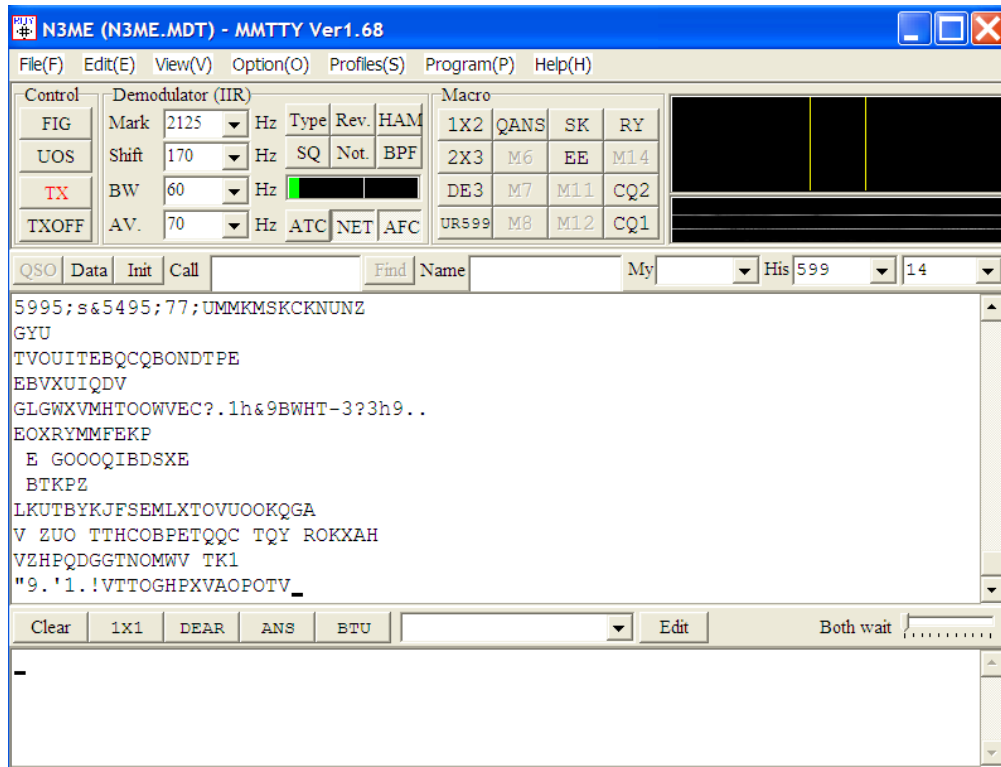
Select "SoundCard" tab



The program will display all available sound cards. Select the sound card you wish to use for MMTTY for both Reception and Transmission. My computer uses Sigmatel digital audio built into the motherboard.

Click on "OK" on the bottom line of the open window to save modifications and return to main MMTTY window.

Main MMTTY Window:



In the "Control" section of the window you will see a number of buttons, which can be turned on and off by clicking on the button. When the button is selected (On), the button color will be light gray.

FIG	should be OFF
UOS	should be ON
TX	will be ON or OFF depending upon sending or receiving
TXOFF	will be ON or OFF depending upon sending or receiving

The boxes in the "Demodulator (IIR)" section of the window should read as follows and/or appear up (not selected).

Mark	2125 Hz
Shift	170 Hz
BW	70 Hz
AV.	70 Hz
Type	should be OFF

Rev.	should be OFF
Ham	Click button at least once to set Mark to 2125 and Shift to 170
SQ	should be OFF
Not.	should be OFF
BPF	should be OFF
ATC	should be OFF
NET	should be ON in AFSK Causes MMTTY to transmit where it last received When in N1MM "Running Mode", N1MM will uncheck the NET option, which allows your receive decoder to follow an off-frequency caller while leaving your transmit frequency unchanged
AFC	should be ON

Frequencies:	160	1.800 - 1.842	
	80	3.580 - 3.645	
		3.590	DX
	40	7.000 - 7.100	
	40	7.020 - 7,040	DX
	30	10.130 - 10.140	
	20	14.080 - 14.099	
	15	21.080 - 21100	
	10	28.080 - 28100	
	6	50.180 - 50.190	