microFSK (c) ZLP Electronics 2012

mFSK.exe is a Windows program that enables communication with the microFSK module fitted into your interface. It allows you to configure all the parameters that can be configured in the interface. Parameters include;

Mode;
5 bit baudot.
7 bit ASCII.
8 bit ASCII.

Baudrate;
45
45.45
50
56
75
100
110
150
200
300

Along with the "standard" baudrates above, the user can specify ANY baudrate between 10 – 600 baud and the mFSK module will generate the appropriate timing for the signals.

Polarity;
Normal
Reverse

Stop Bits
1
1.5
2

UnShiftOnSpace
On
Off

All combinations of the above parameters are valid and are supported by the mFSK module.

The FSK RTTY options "Mark" frequency and "Shift" can only be set by your radios menu system or via your radio control (CAT) software.
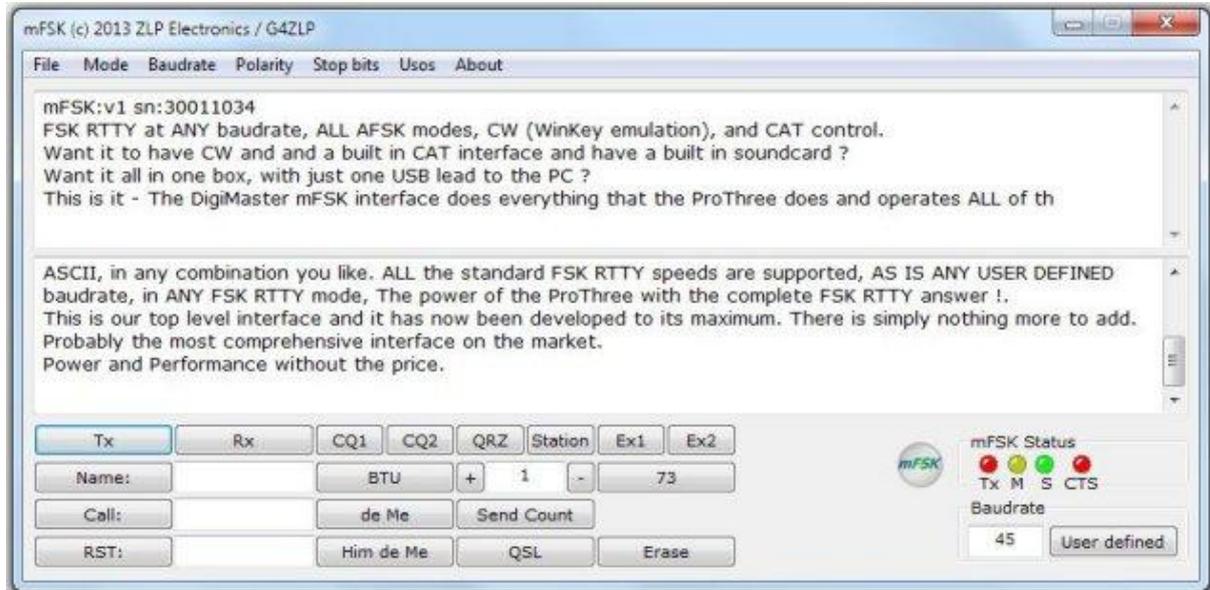
Software Installation:

Simply unzip the files into a directory on your PC, example C:\mFSK

Then, from your desktop create a "short cut" to the program C:\mFSK\mFSK.exe

This will create a shortcut on your desktop.

Double click on the shortcut icon and the mFSK program will open;

Connecting the software to the mFSK module.

The "File" menu option provides 2 options;

[1] mFSK port selection.

[2] Exit.

Click the menu option "File", then "mFSK port selection", then select the port to which the mFSK is attached. A message similar to the following will appear;-

"mFSK:v1 sn:30001016"

The interface is now ready for use with the software's default parameters.

If you select a port that does not exist, the message "Unable to open port" will appear.

If you open the wrong port the port will open but you will not get any open message.

In either of the above 2 cases, simply make your selection again.

The default parameters.

By default, the parameters that are set are as follows;

Mode = 5 bit baudot.

Baudrate = 45.45 (Same as 45).

Polarity = Normal.

UnShiftOnSpace = ON.

StopBits = 1.5.

If you wish to operate with different settings you can select the parameters from the menu bar. All standard baudrates can be selected from the top menu bar. Should you wish to enter your own non-standard baudrate simply enter the baudrate into the lower "USR" window and click the "USR" button. The interface will calculate the timings for ANY baudrate between 10 – 600 baud.

The other buttons;

Tx: Puts the interface into Tx mode and data in the Tx window will be sent to the interface for transmission. If there is no data to be transmited the interface will enter "Tx standby" mode and will immediately transmit any data entered into the Tx window.

Rx: Puts the interface into Rx mode.

CQ1: Puts the contents of the text file "cq1.txt" into the Tx window.

CQ2: Puts the contents of the text file "cq2.txt" into the Tx window.

QRZ: Puts the content of the file "qrz.txt" into the Tx window.

Station: Puts the contents of the text file "station.txt" into the Tx window.

Ex1: Puts the contents of the text file "ex1.txt" into the Tx window.

Ex2: Puts the contents of the text file "ex2.txt" into the Tx window.

RY OFF: Not implemented in this version of software.

73's: Puts the contents of the text file "73.txt" into the Tx window.

Name: Enter the name of the person you are in contact with (use cu-n-paste).

Call: Enter the callsign of the person you are in contact with (cut-n-paste).

RST: the RST of the person you are in contact with (cu-n-paste).

The Counter window: Starts at "1" and increments or decrements hen you click "+" or "-".

The contents of any of the above windows can be sent to the "Tx" window by clicking on the appropriate button.

BTU: Sends "BTU"

de ME: Sends the contents of a text file called "deme.txt" – you can edit this as appropriate.

Him de Me: Sends the contents of the "Callsign" window followed by the contents of a text file called "deme.txt"

Send Count: Sends the content of the "Count" window.

QSL: Sends the text "QSL"

USR: Sends the contents of the baudrate window to the interface (must be in the range 10-600).

Operating the software:

Put your radio into "FSK - RTTY" mode.
Select your mark frequency on the radio and the shift.
Normal settings are 1275 for the mark and 170 for the shift.
Type (or cut-n-paste) your message into the bottom window and click "Tx"
The software will now send the data in the window to the interface module and the interface module will activate the FSK signal according to the parameters you have set and the radio will transmit them. As each character is transmitted it will be echoed back to the PC.
Note that not all the characters that you can input are valid in all FSK modes, but the interface will automatically translate any invalid characters into appropriate valid characters. For instance there are no lower case characters in 5 bit baudot so the interface will automatically translate any lower case characters into upper case characters for transmission, BUT the character returned to the PC for displaying in the top window will always be the same character that you entered.
When you wish to stop transmitting simply click the "Rx" button".
NOTE: When the interface has no data to transmit, the interface will not hold the radio in PTT, instead, the interface will deactivate the radios PTT line and will not activate it again unless there is data to be transmitted, in effect, when there is no data to be transmitted but you have not told the interface to switch to "Rx" the interface will remain in "Tx standby". When in "Tx standby", the interface will immediately transmit any data that is entered into the lower window. This feature is useful for contest operations. If you wish to type into the lower Tx window without it being transmitted you must click the Rx button.
The mFSK software has been developed to control the mFSK module. It has not been developed to receive or decode transmitted data from your radio. You can use any software to decode the RTTY that you receive.
Operating FSK is very different to operating AFSK modes, in AFSK your soundcard generates tone for you and generates them in a waterfall at the frequency that you select when you click on a trace. By clicking on a trace when operating AFSK you are effectively changing your operating frequency.
This is not the same when you use FSK, in FSK you transmit at your "Mark" frequency which you set on your radio and you must Rx at the same frequency. When using FSK you should set your receiving software to match your "Mark" frequency and when changing frequency you should tune your radio's Rx frequency to bring the traces to your frequency rather than click on a different trace which would result in your Tx and Rx being at different frequencies. You should note that many receiving packages show the Rx signal at the difference between Mark and Space settings rather than at the actually mark or space frequncy.

Note how the mFSK software sits on top of your Rx software.
In this example the IC746 was used to transmit the FSK and the FT857 was used to receive it, the 857 was physically next to the 857 so some overloading is present but the image is to demonstrate only the method.