Set Up FLDIGI For NBEMS

S. W. Judd, WB8YLO

February 4, 2016

Introduction

The FLDIGI program is a popular soundcard digital modem program. It is available for Windows, Linux, and OSX computers. NBEMS is the Narrow Band Emergency Messaging System. NBEMS is a suite of programs that work with FLDIGI to facilitate formal message communications during an emergency situation. NBEMS attempts to incorporate the needs of FEMA, the Red Cross, MARS, and ARES into a common suite of programs.

The FLDIGI program is the program that does the actual communication with your transceiver. It also communicates with other programs in the NBEMS suite that implement specific requirements for effective emergency communications.

There are certain configuration options that must be set up in FLDIGI before using other NBEMS programs. The remainder of this article will outline these configuration requirements.

Modem Setup

Assuming that you have already been using the FLDIGI program for general digital communications, first thing to set up for NBEMS is how you want your modems to behave. Select Configuration -> Modems.

DominoEX Mode

Select the 'Dom' tab. You may enter some text in the 'Secondary Text' box that will be displayed during idle time in the status field of the FLDIGI screen when using the DominoEX modes. The information, such as your callsign, location, and/or organization, may be specifically required by your organization. Once the information is entered, (or left blank), click on the 'Save' button.

MT-63 ModeSet Up FLDIGI For NBEMS

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MT-63 Mode

Next, click on the 'MT-63' tab. There are several check boxes you will need to either check or not check.

The first box is '8-bit extended characters (UTF-8)'. Checking this will allow the full UTF-8 set of characters to be sent. Unchecking this will allow only the 7 bit ASCII character set to be sent. Checking this box gives the most versatility.

The 'Long receive integration' check box enables the MT-63 long modes. The long modes increase the reliability of MT-63 and should probably be checked.

The 'Tranmit (lower/upper) start tone' boxes enable or disable the upper and lower tones to be sent at the start of the transmission and before the text transmission begins. This is useful to see on the waterfall that the bandwidth of the MT-63 signal is what was expected. These should probably be checked. The 'Tone Duration (secs)' spin box sets the length of time that the upper and lower tones are transmitted. The default value of four is fine and should probably be left alone.

The 'Allow manual tuning' check box determines the center frequency of the transmitted MT-63 signal. If checked, you can set the transmit signal wherever you want on the waterfall. It will then be up to you to make sure the full bandwidth of the selected signal fits into the waterfall and that your selected center frequency matches that of the stations you are communicating with. If unchecked, the signal will always start the lower tone at 500 Hz. MT63-500 will occupy 500 Hz - 1000 Hz centered on 750 Hz. MT63-1000 will occupy 500 Hz - 1500 Hz centered on 1000 Hz. MT63-2000 will occupy 500 Hz - 2500 Hz centered on 1500 Hz. On HF, it doesn't really matter if it is checked or not. However, on VHF/UHF, where frequencies are channelized, leaving it unchecked will force all stations to be

centered on the same frequency and will probably be more reliable. Click on the 'Save' button.

Olivia Mode

The bandwidth should be set to 500. Tones should be set to 8. The items in the Receive synchronization box should be a Tune margin of 8 and Integration tuning of 4. The 'Reset FEC blocks' box should be unchecked. The '8-bit extended characters' box and the 'xmt start/stop tones' boxes should be checked. Click on the 'Save' button.

Thor Mode

Select the 'Thor' tab. You may enter something in the 'Secondary Text' box that will be displayed during idle time in the status field when using the Thor modes. The information, such as your callsign, location, and/or organization, may be specifically required by your organization. Once the information is entered, (or left blank), click on the 'Save' button.

Miscellaneous Settings

Select the 'Misc' Tab. There are several configuration options to be set here.

NBEMS Tab

The 'NBEMS data file interface' section determines how FLDIGI interacts with the other NBEMS programs. Checking the 'Enable' box allows FLDIGI to work with NDEMS and should be checked. The 'Open message folder' box pops up the file chooser showing the transmitted files on message transmit if checked. Leaving it unchecked prevents it from automatically popping up on every sent message. It is only a matter of your convenience and will not prevent interoperability so it is your choice.

The 'Reception of flmsg files' section determines how FLDIGI behaves when a wrapped flmsg file is received. You can choose to open the message with the FLMSG program or not. You may display the received message in your browser or not. You may choose to do both. It only affects how you work at your station and does not affect interoperability. I find it more convenient to check the 'Open with flmsg' box only. I can then display it in the browser if I need to from the FLMSG program. Click on the 'Save' button.

Sweet Spot

Select the 'Sweet Spot' tab. There are three boxes labelled 'CW', 'RTTY', and 'PSK et al.'. The numbers in these boxes determine at what frequencies, in Hz, the most sensitive spots are for these modes. I set the CW box to 700, the RTTY box to 1000, and the PSK et al. box to 1500.

Checking the 'Always start new modems at these frequencies' box will make FLDIGI set the waterfall signal to these frequencies when the respective Op Mode is selected. It is especially important to make sure that all stations communicating together have the same setting for the 'PSK et al.' box if using MT-63 modes and the 'Allow manual tuning' box is checked. This will ensure that all bandwidths start at the same center frequency. Click on the 'Save' button.

Autostart Settings

Select the 'Autostart' tab. Locate and enter the programs you need in the appropriate box. For programs not named, such as FLARQ or FLMSG, you can enter there names in the Prog 1, 2, or 3 boxes. Pressing the Test button will start the named program entered in the box if it is correct. If the program doesn't start, then there is an error in what you entered. Find the problem and re-enter the corrected file location. Once the Test button works, checking the 'Enable' box will cause the program to start automatically when you start FLDIGI. Click on the 'Save' button then click on the 'Close' button. The configuration is complete.

Additional Settings

There are several other settings that may make working in a network easier and/or more reliable. These settings do not affect interoperability but may affect efficiency.

The TxID button, located in the upper right of the FLDIGI screen, causes the program to transmit a set of tones that identifies the transmission mode you are using when set to 'On'. Enabling TxID lets everyone on the net know what mode is coming.

The RxID button, also located on the upper left, will cause your receive mode to change to the mode being transmitted by another station if it is set on and the other station has their TxID set on.

Conclusion

In order to ensure interoperability among all stations on a network, it is important that all stations set those settings that affect interoperability to be the same. The net manager or your organization will determine what the best settings are for the type of operation you are involved in. It is up to you to make sure they are set correctly.

You may also need to set up several macros to meet the needs of your net or organization. Setting up macros will be handled in another article.

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