



Narrow Band Emergency Messaging System Basic Setup

Narrow Band Emergency Messaging Software (NBEMS) is an Open Source software suite that allows amateur radio operators to reliably send and receive data using nearly any computer (Windows, Mac, and Linux) and any analog radio without requiring a dedicated digital infrastructure or specialized modem hardware. NBEMS works on both VHF/UHF FM and on HF.

NBEMS is a solution available for moving messages, data and other text-based information over amateur radio frequencies, to handle emergency communications.

The use of the NBEMS software requires nothing more than a laptop or desktop computer and an amateur radio transceiver (even an HT) to send and receive data/text using the NBEMS soundcard-based digital software.

NBEMS consists of several programs:
Fldigi – Fast Light Digital modem application
Flarq – Fast Light Automatic Repeat Request
Flwrap – embed a checksum in a file
Flmsg – ICS forms, Radiogram, text, CSV
Flamp – Amateur Multicast Protocol

The NBEMS system is designed to operate on all amateur bands, but is optimized for short to medium range communications such as SSB VHF, or HF with an NVIS antenna can provide. It can however be utilized on VHF FM, and even operated through a FM voice repeater if needed.

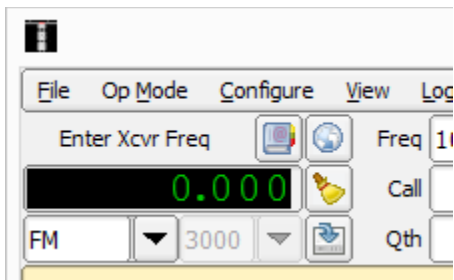
For local portable, mobile and fixed station operations on 2m and 70cm FM (repeater or simplex), MT63 2K long is our preferred mode for form transmission and has been chosen for the following reasons:

- Can be used very effectively without a sound card interface (audio coupling)
- Extremely effective under poor RF conditions

- Extremely accurate decoding (major duplication of data and forward error corrected)
- Very forgiving on sound card tuning and calibration when used on FM
- Excellent for sending larger situation reports or databases

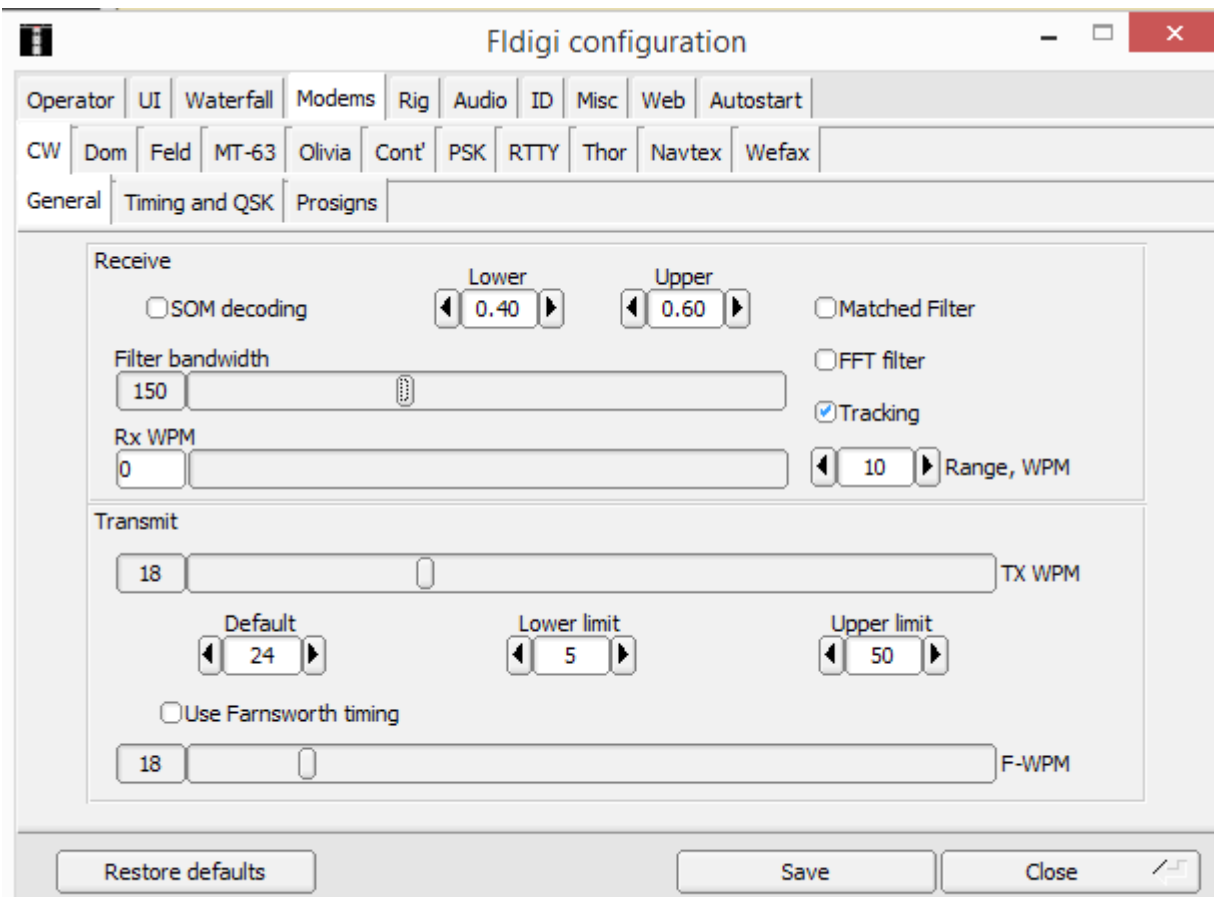
Basic information and software download: <http://www.w1hkj.com/> . Be sure to check here often as they are updating the programs frequently to add features and fix minor bugs. You may want to subscribe to the NBEMS Yahoo group to keep informed. The following screenshots are from version 3.21.82.

Figure 1. The FLDIGI menu bar



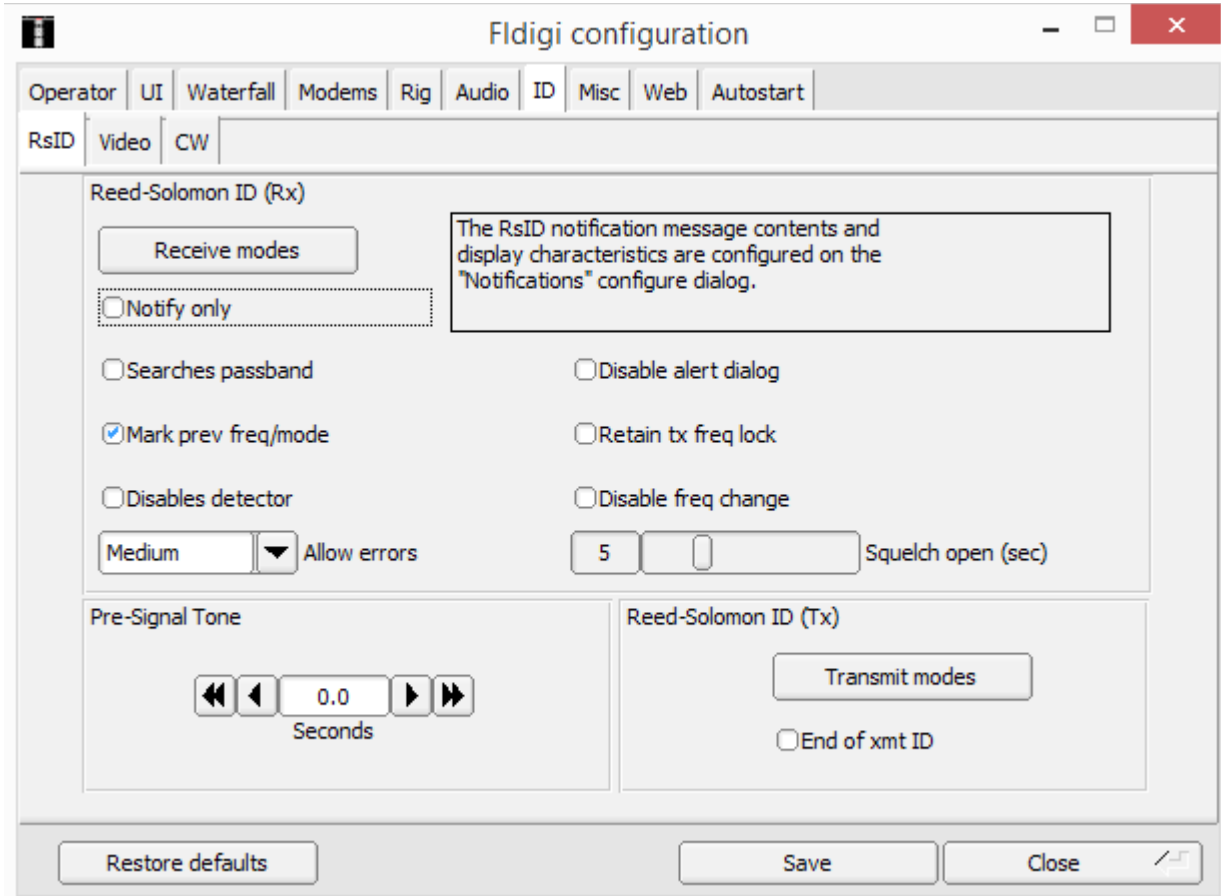
From the main menu bar in FLDIGI, click “Configure” as shown in Figure 1.

Figure 2. FLDIGI Configure menu tabs



Notice all the tabs within the “Configure” menu as seen in Figure 2. We will only be accessing a few of them to get started with NBEMS

Figure 3. FLDIGI Configure menu ID tab



Click the “ID” tab and match the settings as shown in Figure 3. Clicking the “Searches passband” option to enable it will cause FLDIGI to jump around to any received signal with an RSID which may not be desired.

Figure 5. Receive Modes

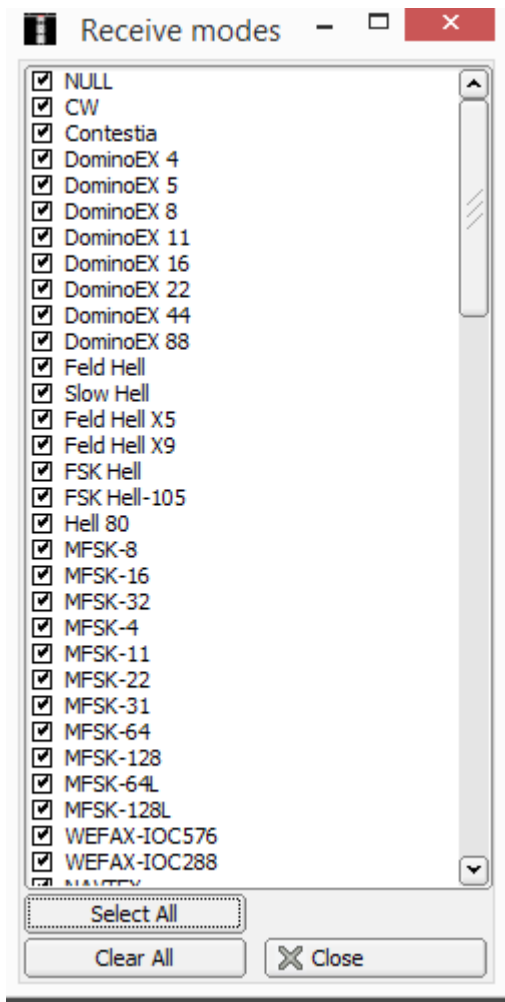
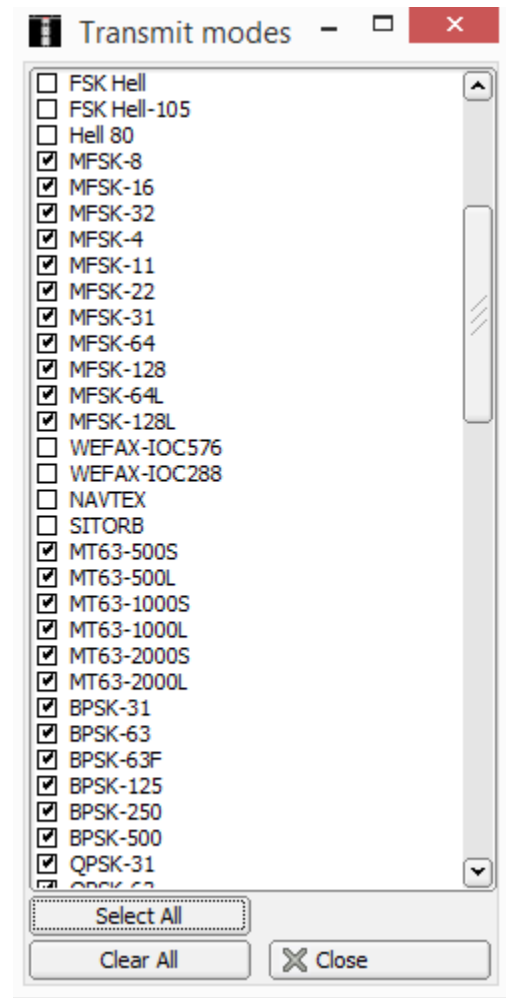
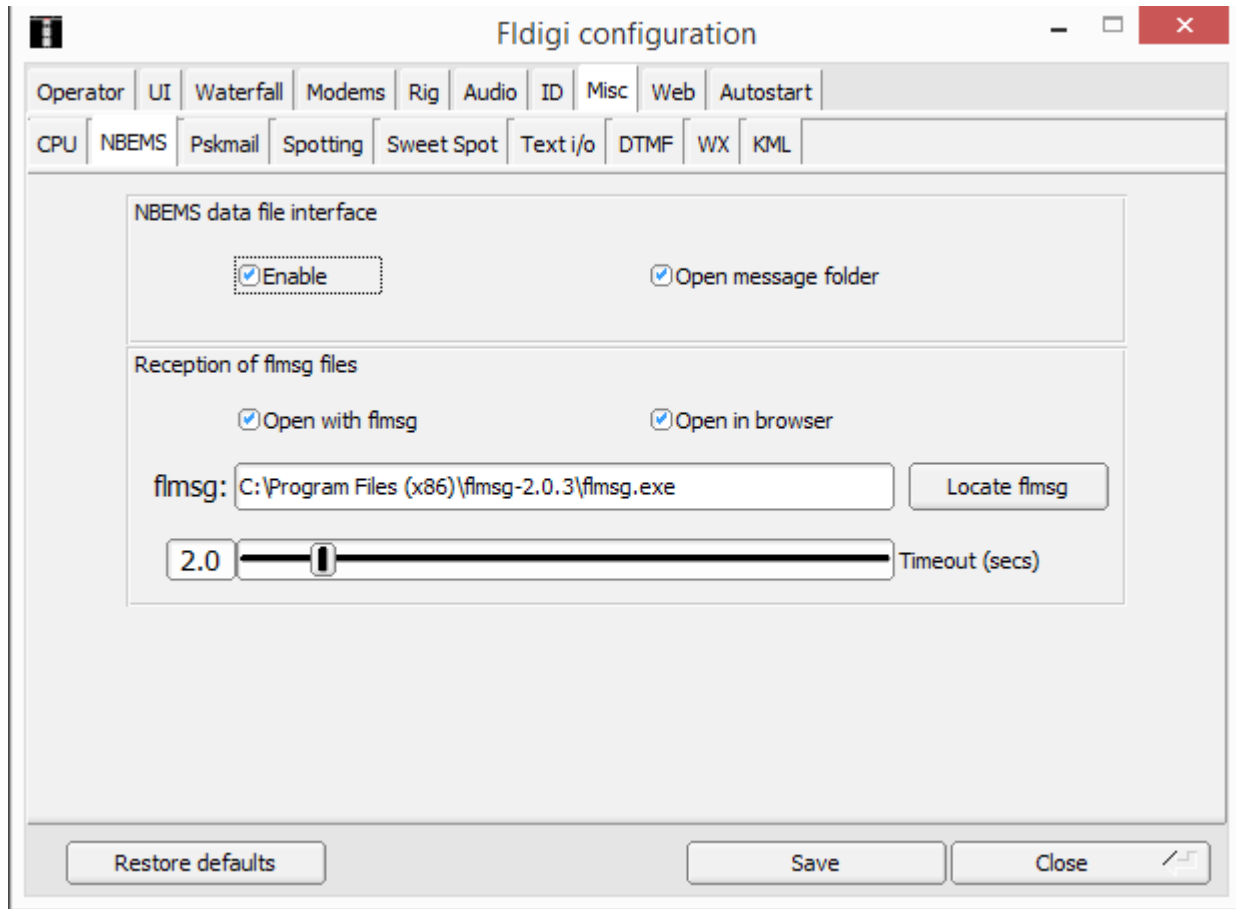


Figure 6. Transmit Modes



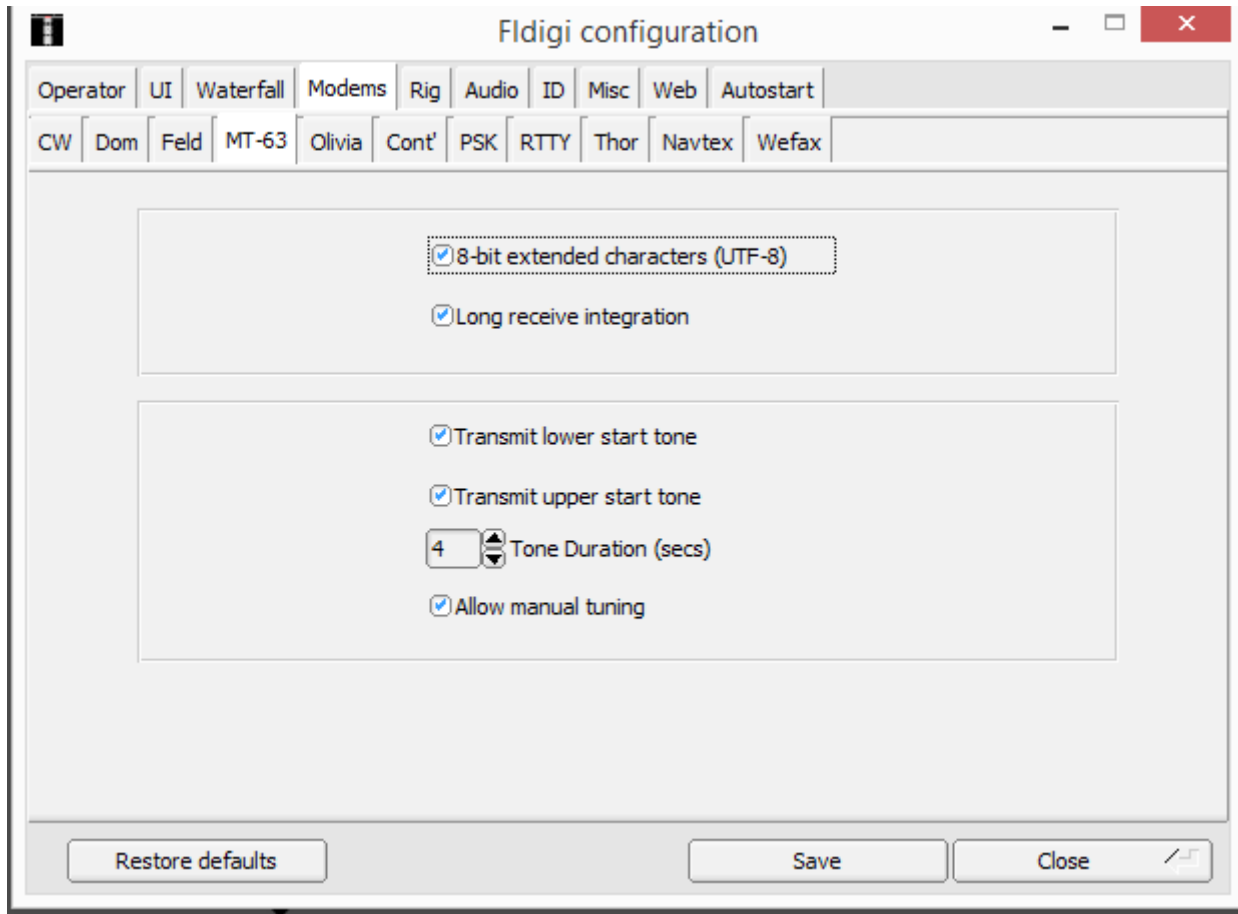
Set your RX and TX modes as desired reference Figures 5 and 6. It may be desirable to limit at least your receive modes to only the modes being used in crowded band situation especially on HF. For the DuPage County ARES NBEMS practice net we will be using **MT63-2000L** so be sure these are checked in both the Receive and Transmit modes

Figure 7. FLDIGI Configure menu Misc tab



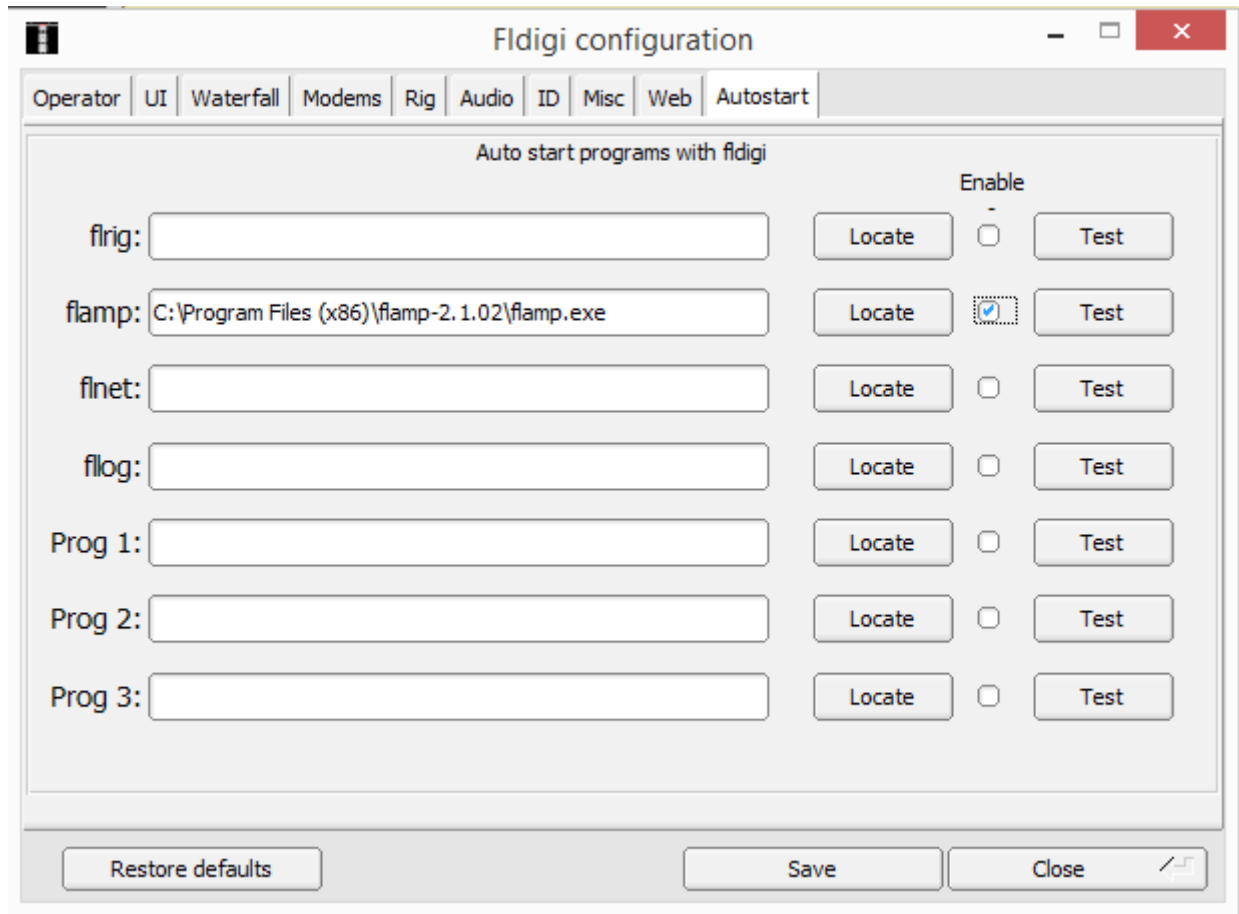
Click on the “NBEMS” tab and make the settings as shown in Figure 7. The option to “Open in browser” will open your received messages in your default Internet browser such as Internet Explorer, Chrome, or FireFox in addition to FLMSG. This is optional and may not be desired in some cases. Click the “Locate flmsg” to locate the executable file for FLMSG. When these options are enabled, a received message will automatically open FLMSG for you if it was closed. You will need to drill down through your C drive to get to the default location. In the example shown, this would be the default location where FLMSG is on Windows 8. **Note: Every time you update FLMSG to a newer version you should come back here to manually point FLDIGI to the latest version of FLMSG you have installed. Pay attention to the versions you have when making updates.**

Figure 8. FLDIGI Configure menu MT-63 tab



On the MT-63 tab as shown in Figure 8, check to ensure all the check boxes are checked, as we will be using MT-63 in our practice net. If your options don't look the same, you will probably need to download and install the latest version of FLDIGI.

Figure 9. FLDIGI Configure menu Autostart tab



On the Autostart tab, you will want to have the FLAMP software start automatically when FLDIGI starts. Doing so ensures you won't miss a message that was sent via FLAMP because FLAMP actually needs to be running to receive messages intended for FLAMP. Click the "Locate" button to locate the executable file for FLAMP. You will need to drill down through your C drive to get to the default location. In the example shown, this would be the default location where FLAMP is on Windows 8. Click the "Enable" checkbox to enable this feature. **Note: Every time you update FLAMP to a newer version you should come back here to manually point FLDIGI to the latest version of FLAMP you have installed. Pay attention to the versions you have when making updates.**

Back on the main FLDIGI screen we need to ensure 2 more options are enabled for NBEMS.

One of the great features of FLDIGI is the ability to setup a station that can monitor Narrow Band Emergency Message System (NBEMS) messages and to then have those messages either pop-up in a FLMSG window or a browser window or both. This is useful if you are away from your station during an event .

To setup FLDIGI to detect messages sent using the Reed-Solomon ID you need to enable the RxID feature. When this is enabled and a message is sent with a Reed-Solomon ID FLDIGI will detect that

message within the current passband and automatically center on that message, switch modes and start to decode the message. To send messages with the Reed-Solomon ID the TxID feature needs to be enabled. Recommend that you have both RxID and TxID enabled.

Figure 10. FLDIGI main screen

