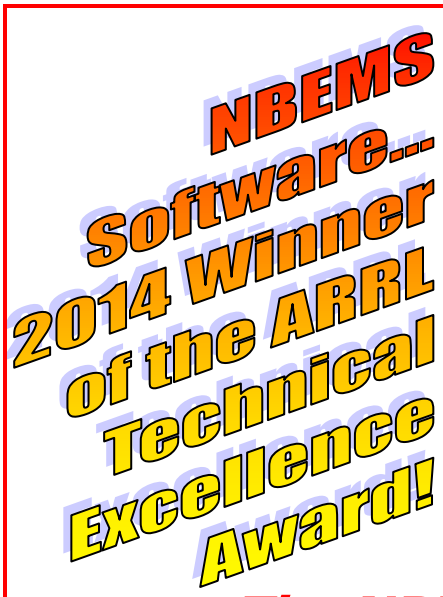

The Wellington Radio Club Guide
For The
Installation and Configuration Of PBC Basic NBEMS...
NARROW BAND EMERGENCY MESSAGING SYSTEM

<>

For Reliable and/or Rapid Transfer of complex documents such as Lengthy Text, Formatted Messages, Lists and Spreadsheets Primarily Utilizing Acoustical Coupling And Certain Digital Interfaces

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Otherwise known as

The NBEMS Guide for Digital Dummies!

Version 4 – 3/15/14

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The purpose of this install & configuration guide is to help ensure uniformity, simplicity and success in Basic NBEMS communications primarily for FM emergency use. So far Basic NBEMS has been endorsed by not only the WRC but also the Boca Raton Amateur Radio Association, Central & South PBC ARES, PBC Skywarn and the Eagle Wings Foundation, a disaster relief group. All expect to use complex documents. These groups have formed the PALM BEACH EMERGENCY MESSAGING ASSOCIATES, PBEMA, to promote Basic NBEMS interoperability, (http://qsl.net/k4wrc/PBC-BASIC-NBEMS.html).

The Wellington Radio Club's goal is to empower emergency communicators, even those with little technical background, to send & receive information reliably and rapidly. Our approach is to simplify and streamline the steps needed to get on the air with only NBEMS's FLdigi and FLmsg. For example, rather than looking at a bewildering array of a hundred digital mode variations, the focus is on just one or two digital modes known to be reliable with acoustical coupling. This eliminates the need to purchase and learn about digital interfaces and special cables. The approach helps people move up the operating learning curve rapidly and more easily maintain their critical basic skills.

PBC Basic NBEMS permits operation with almost all base stations or handhelds using a computer configured and setup according to this Guide. This portability is invaluable when operating from EOCs, Shelters, Points of Distribution, CERT Command Posts, NGO offices, and similar emergency/disaster locations and ensures interoperability.

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For assistance setting audio levels, in PBC Basic NBEMS operations, or configuring a Digital interface, contact these WRC Elmers:

AC4FC – Chris chris_hite@bellsouth.net
AF4RL – Rich rich@lucibella.com (Mac literate)
K4MGW – Marc bornannoyed@gmail.com
K4WAG – David david@theftcontrol.com
KS4NB – Larry larry33414@aol.com

For practice and on-the-air training join the:

THE WRC's PBC NBEMS NET

SUNDAYS 6:30pm 147.285+ PL 103.5 <<<>>> ELMERS are usually available at 6PM

THE BRARA NBEMS NET

FRIDAYS 7:30pm 145.290 PL110.9

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This Guide was developed by the above Elmers and edited by Larry KS4NB.

Downloading NBEMS Files

Go to **www.w1hkj.com**, the web site of the free, award winning software.

Look for the FLDIGI and FLMSG download page…
these are the only two files necessary for **basic** NBEMS operations to send & receive text, pre-formatted message forms and files containing lists, tables or spreadsheets. Only the latest, tested versions are available on that page.

Make sure to download only the versions for your operating system. Our experience is that the same steps apply to the nearly all recent versions of FLdigi and FLmsg.

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Program Installation

FLDIGI

Click on fldigi-3.21.xx_setup.exe where saved on your computer

(Will be different filename for Apple or Linux)

Follow prompts

You will be asked where to install, please use the default setting.

FLMSG – Same as above

IMPORTANT NOTE: Write down the folder location where you have saved FLMSG.

You will need that info during the FLdigi configuration process.

When finished, you should end up with shortcuts to each of the programs on your desktop.

Shortcuts can be moved to a different location at a later date if desired.

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BEFORE YOU CONTINUE TO THE CONFIGURATION PAGE, PLEASE READ THIS:

USE ONLY THE SETTINGS SPECIFIED

Most of the settings used will be pre-set "default" settings. To many, there are a very confusing number of possible FLdigi settings. Many setting combinations will NOT allow you to be compatible with other stations. After you have gained a familiarity with NBEMS and its on-the-air behavior, there maybe other settings you may wish to change.

Example: The default configuration activates only the *left* computer speaker. For some, enabling the *right* speaker, or both, maybe be more convenient if you are right-handed. Also, earbud performance maybe improved during transmit. Options are described at the end of the Guide.

MAC USERS - May wish to read page 4 for added FLMSG info. WRC

FLDIGI Configuration

This procedure will ensure that all stations using acoustical coupling have the same settings.

Click on FLDIGI Shortcut on desktop… the config Wizard will appear.

For now, only complete whatever Operator/Station info you know, then –> SAVE+CLOSE

Click "Configure" On FLDIGI Tool bar:

Click UI, General Tab

Check all 4 circles under exit prompts

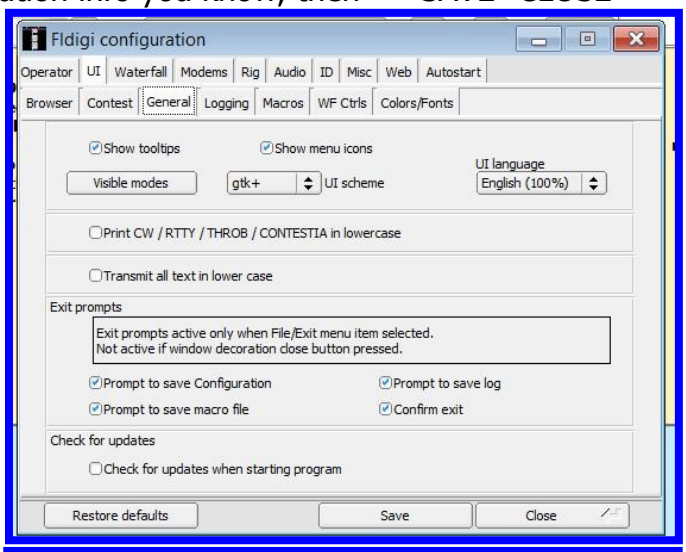
Check show tooltips

Check show menu icons

Leave all else at default

Click Save

(Click "Save" anytime changes are made)



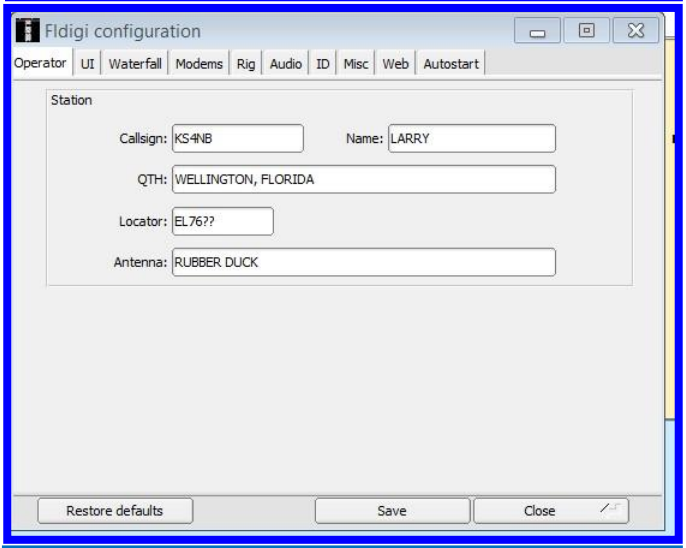
Click Operator

(Usually completed with the Wizard)

Fill all fields you can

(Look up location later on QRZ.COM)

Click save

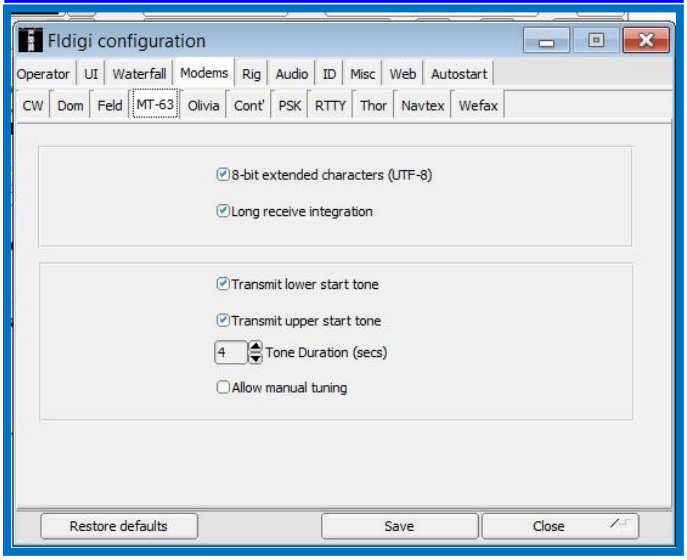


Click MODEMS, MT63 Tab

Check first 4 selections

Uncheck Allow Manual Tuning

Save

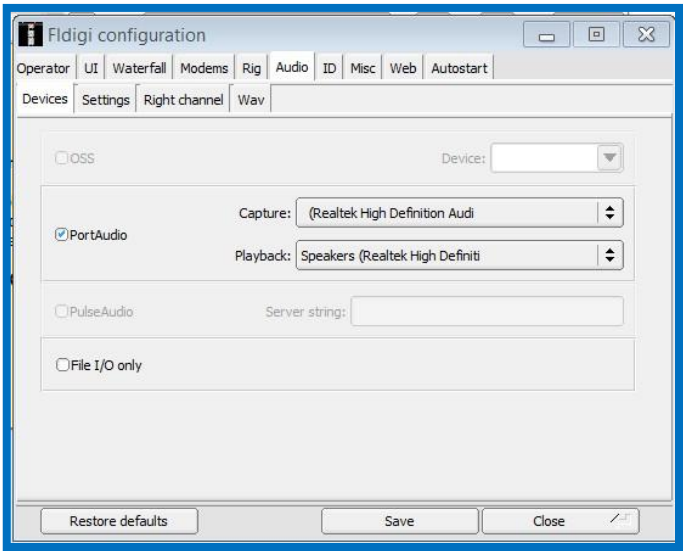


Click Audio, Devices tab

Make sure port audio is checked

Make sure that your computer's mike and speakers are selected

Save

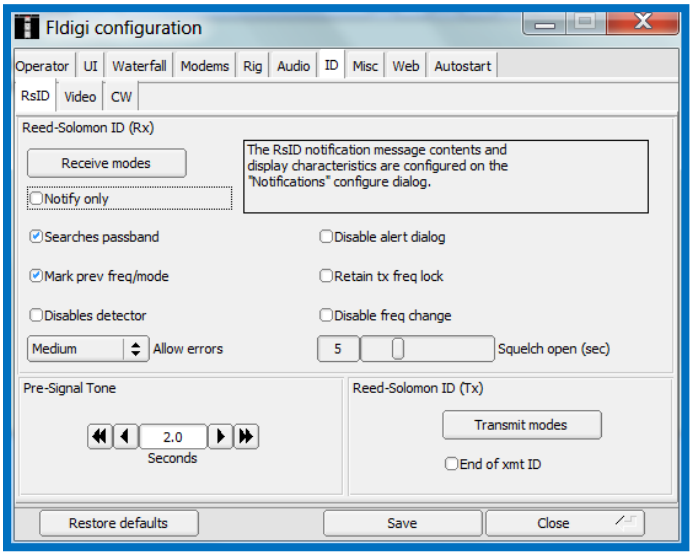


Click ID, RsID tab

Set the *Pre-Signal Tone* to 2 seconds

Save

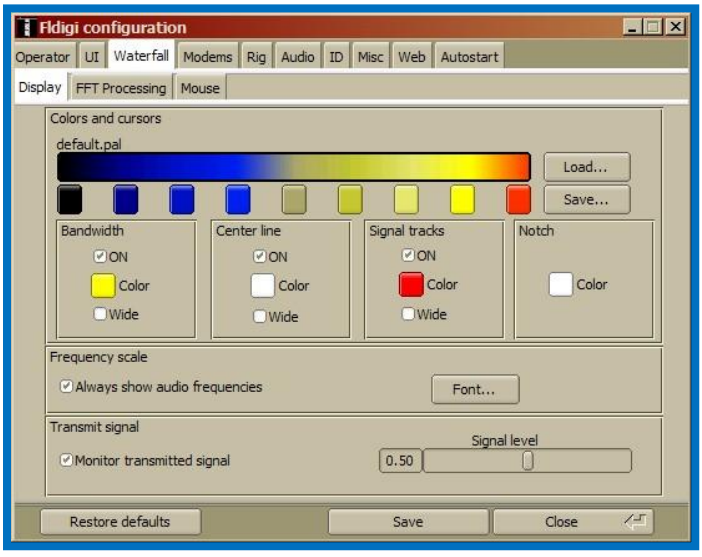
(Some of the unexpected benefits of the pre-signal tone were as an alert to remind operators to properly position mics/speakers, etc. and as a visual signal strength indicator to permit a quick radio volume adjustment).



Click Waterfall, Display tab

Enable/click on *Monitor transmitted signal* in the Transmit signal bottom area.

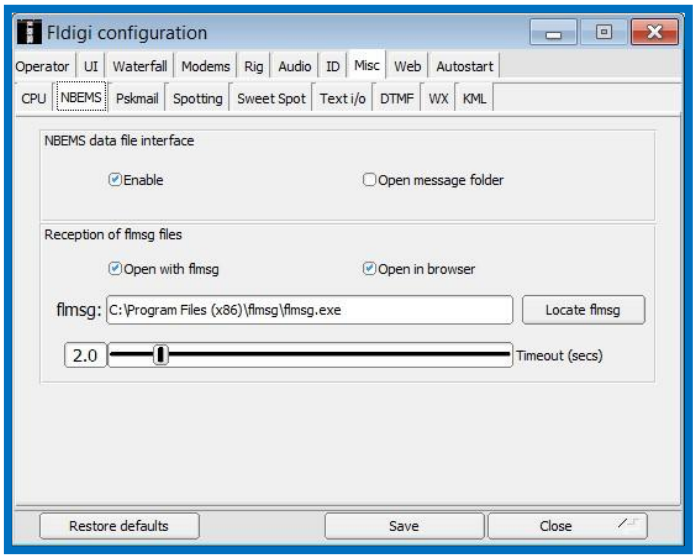
Save



== Many people have a problem with the next step. ==

== It's critical to Auto Receive. ==

== PLEASE... *DOUBLE CHECK THE LOCATION OF FLMSG.EXE* ==



Click Misc, NBEMS Tab

Check Enable in *NBEMS Data File Interface*

Uncheck open message folder

Save

Check Open with FLMSG in *Reception of messages*

Fill the "flmsg:" box by entering the location you wrote down earlier. You can also locate it by using the "Locate flmsg" button.

For ***Windows 7*** it is usually: *C:|Program Files (x86)|flmsg-1.1.33|flmsg.exe*

For ***Windows XP*** it is usually: *C:|Program Files|flmsg-1.1.33|flmsg.exe*

Save and then close the configuration window.

IMPORTANT NOTE: IF YOU REPLACE FLMSG WITH A NEWER VERSION, YOU *MUST* RETURN TO THIS FLDIDGI CONFIGURATION STEP AND RE-LOCATE THE *flmsg.exe* FILE!

========== MAC USERS FLMSG PROCEDURE ==========

For **Apple/Mac OS X (From Rich, AF4RL):**

Click on "*Locate Message*". A file browser is opened to the "Applications" folder.

Right click on the flmsg icon.

Select "*Show Package Contents*".

Double click "*Contents*".

Double click on " *MacOS* ".

You will be viewing an icon labeled "flmsg".

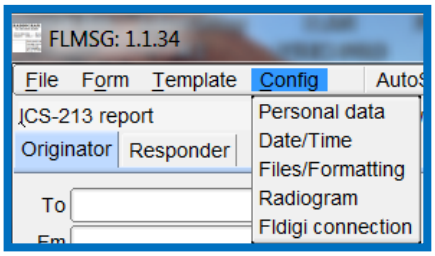
Drag and drop the icon onto the "flmsg:" entry box and the value will be correctly entered.

WOW! You have completed the hardest steps in configuring FLdigi.

Configuring FLmsg is next... it's a lot easier!

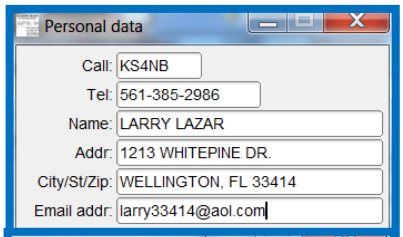
FLMSG Configuration

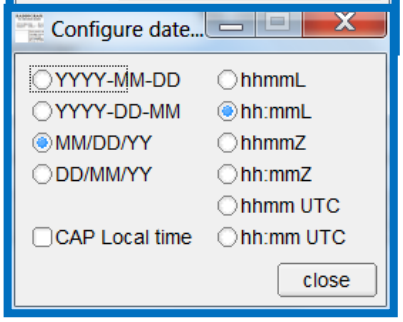
(When updating your FLmsg installation, be sure to go to the FLdigi configuration step on page 5).



Most of the traffic using Basic NBEMS on FM will be local. For that reason, most people elect to use local time. This also reduces confusion about dates because the Zulu date is often different than the local date.

If the FLmsg Configuration Wizard doesn't open automatically, click on "Config" and select the appropriate category.





PERSONAL DATA

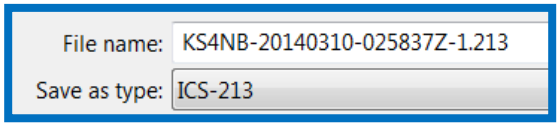
Your call sign is required. Depending upon your net protocol or your assignment, you may wish to add your "tactical call" such as "Wellington EOC-KS4NB".

DATE/TIME

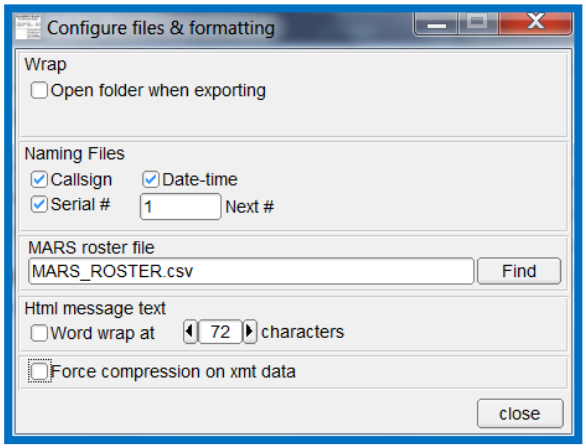
Shown are the most common local time and date formats.

FILES AND FORMATTING

When you are ready to transmit and click "AutoSend", you will be asked if you want to save the message. It highly recommended having FLmsg automatically create the name. Below is the file name for KS4NB's first ICS-213 message. It is very logical and easy to decipher! For the



same file name format, use the "*Naming Files*" selections shown.



RADIOGRAMS and FLDIGI CONNECTION:

NO CHANGES. For now, use the default selections.

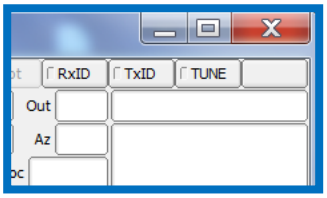
Congratulations... You have completed the initial steps in setting up PBC Basic NBEMS for FM and MT63 communications. Now the computer and radio audio levels must be adjusted.

The quickest and best way is to work on-the-air with an experienced NBEM user. This Guide's cover page lists Elmers and how to contact them.

Do not add the optional settings until you have some Basic NBEMS operating experience under your belt.

OPTIONAL SETTINGS

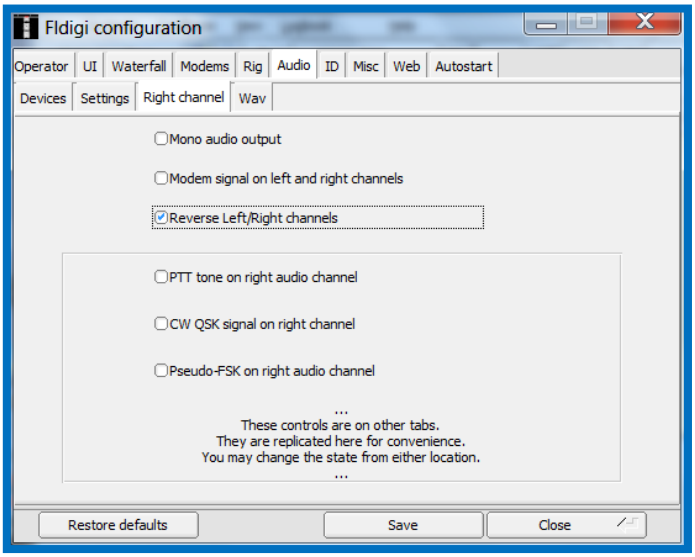
COMPUTER SPEAKER OPTIONS: To operate with the simple acoustical coupling method and to implement an option below, you MUST know where the computer speakers are located. Contrary to common sense, some speakers are even located underneath the computer!



LOCATING YOUR LEFT COMPUTER SPEAKER*:* The FLdigi default configuration activates the *left* computer speaker. On the FLDIGI main screen, click on the uppermost right button: TUNE. It should turn **RED** and a tone should come through the speaker that is currently selected. To turn off the test tone, click on the TUNE button once again.

The optional settings are made from the "FLdigi configuration" windows as shown.

OPTION 1: RIGHT SIDE SPEAKER SELECTION



Some operators may prefer to enable the *right* speaker for convenience when transmitting. That is when the radio mic is held near the computer speaker.

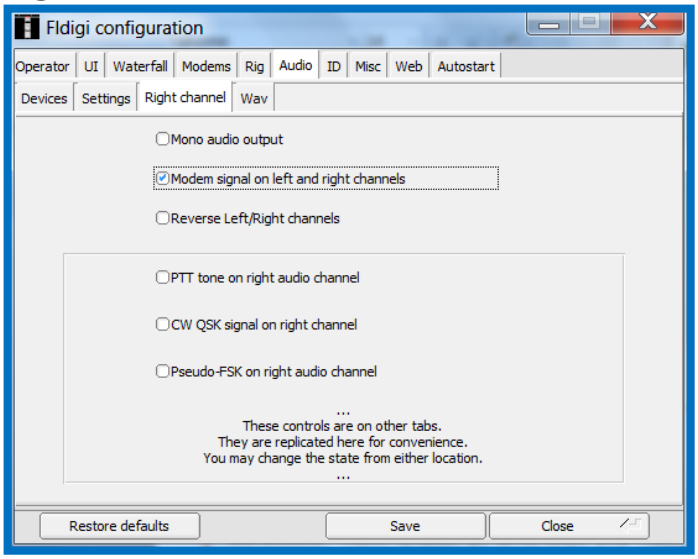
Click AUDIO, Right channel tab

Check the *Reverse Left/Right channels* box.

Save

Test this feature: Click the **TUNE** for the tone. It will come from the speaker that is currently selected. Now check or uncheck the *Reverse* box. The tone will switch back and forth between speakers.

OPTION 2: USING BOTH COMPUTER SPEAKERS



Multi-NBEMS operators: When they will use the same computer at the same or different times, it may be useful to enable BOTH computer speakers.

The WHISPER coupler or earbuds: Their performance maybe enhanced by choosing to use BOTH speakers.

Click AUDIO, Right channel tab

Check the *Modem signal on Left and Right channels* box.

Save

Test this feature: Click the **TUNE** to get the test tone. It will come from both speakers. To check Whisper unit or earbud performance, plug-in them in. Check or uncheck the *Modem signal* box. Choose the setting producing the loudest tone.

wc

OPTIONAL SETTINGS-(Continued)

CAUTION:
The modes discussed below are not as reliable as MT-63-2KL.
They do not have redundancy and are much less robust than MT-63.

LARGE DOCUMENT/FAST MODES: There may be times when a document is absolutely necessary to send but its file is too large to transmit before the repeater, or a transceiver, times out using the MT63-2KL mode. The PSKxxxR robust modes use both forward error correction and interleaving to achieve improvements over standard PSK. However, they should only be used as a last resort with minimum noise and strong signals. The chart below shows modes 2500 Hz or narrower. The PSK1000R offers about 4½ times the speed of MT-63-2KL and has been used successfully on FM with strong signals.

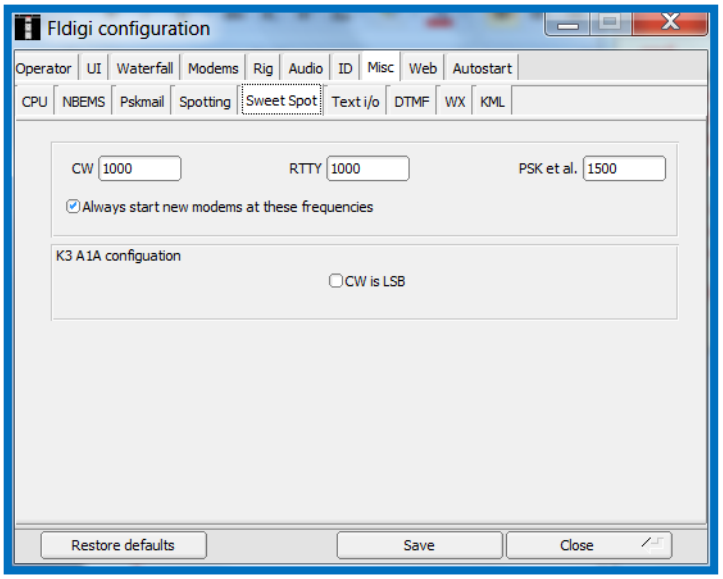
Mode	Baud	WPM	Duty Cycle	BW(Hz)	Modulation
PSK63RC20	63	1100	80.00%	1725	20-PSKR
PSK125RC10	125	1100	80.00%	1700	10-PSKR
PSK125RC12	125	1320	80.00%	2050	12-PSKR
PSK250RC5	250	1100	80.00%	1650	5-PSKR
PSK250RC6	250	1320	80.00%	2000	6-PSKR
PSK250RC7	250	1540	80.00%	2350	7-PSKR
PSK500RC2	500	880	80.00%	1400	2-PSKR
PSK500RC3	500	1320	80.00%	1900	3-PSKR
PSK800RC2	800	1280	80.00%	1400	2-PSKR
PSK1000R	**1000**	**880**	**80.00%**	**1800**	**1-PSKR**

Click MISC, Sweet Spot tab

Set the *Psk et al* to 1500 Hertz

Save

(This keeps the center frequency on 1500 Hz just as on MT63-2kl.)



OPERATING PROCEDURE:

1) Advise the receiving station to make the configuration change above and follow the steps below.
2) Turn off the AFC button, on the bottom right of the FLDIGI screen.
3) Select the PSKxxxR mode on the bottom of the FLMSG screen.
4) Confirm that the receiving station is in the same exact mode you are in.
5) After successful transmission, when you change back to MT-63, turn on the AFC feature.

WRC