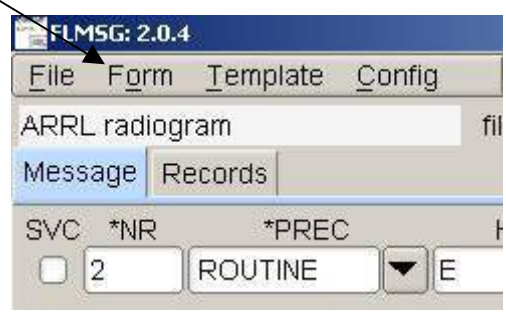
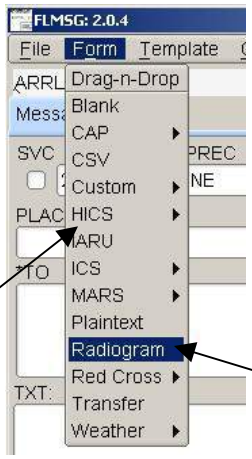
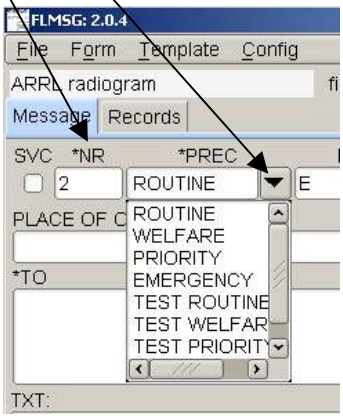
G. Let's Send An FLMSG File Via FLDIGI:

1. FLDIGI Must Be Running**,** ***Before*** FLMSG Is Started. If It Not, Close FLMSG, And Start FLDIGI.
2. Start FLMSG (After FLDIGI Is UP & Running) – The Main Screen Should Appear.
3. From The **Top Menu**, Select **Form.**

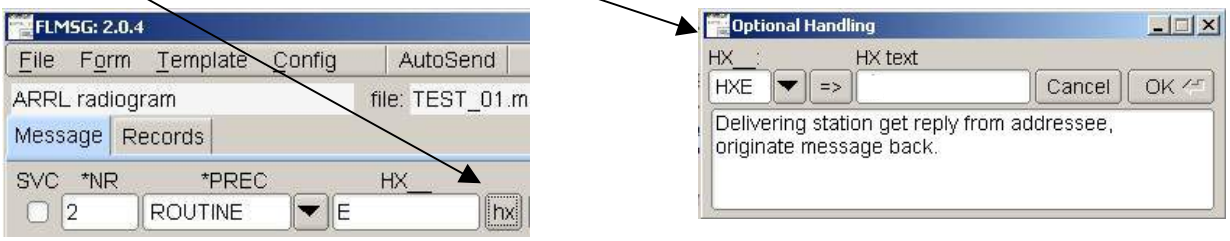




4. Scroll Through The Available Categories (We Are Going To Use The **Radiogram**). Any Category With A ▸ **,** Indicates Multiple Choices.
5. Input The Message Number In The **NR** Field
6. Click In The **Down Arrow** To The *Right* Of The **Prec** (Precedence) Field To Reveal The Choices (Be Sure To Scroll Down To See All Of Them).
7. Click On The Precedence Of Your Choice. (Usually **Routine**)



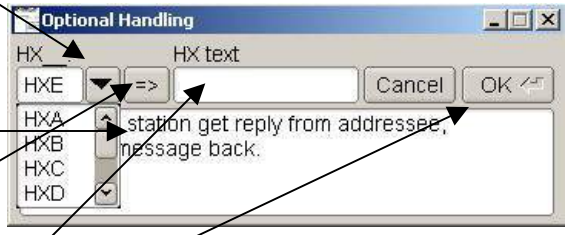
8. Click On The **hx** Button To Display The **Option Handling** Window.

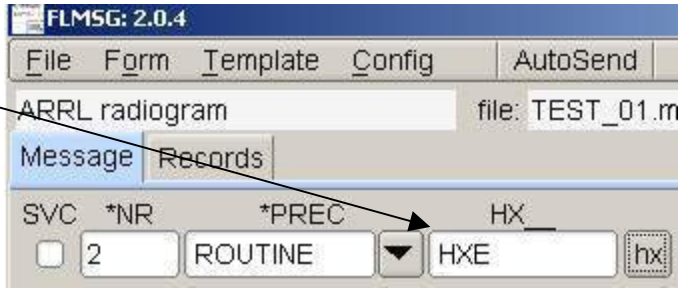


9. Click On The Arrow To The Right Of The HX Field To Reveal The Choices. Again, Scroll Down To See Them All.

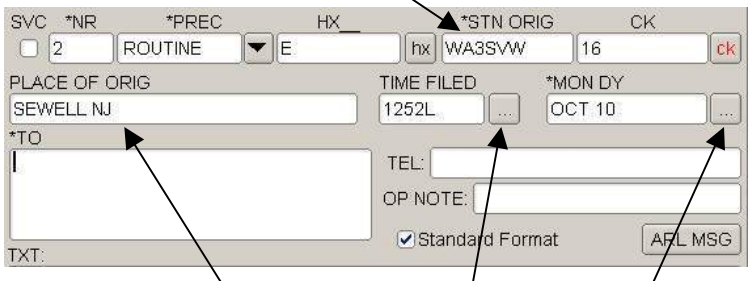
10. You Must Click On Each HX Code To See The Scenario.

11. Once You Have Made Your Decision, Click On The => Button To Place It In The **HX text** Box, Then Click The **OK** Button. Your Choice Then Appears In The **HX_** Window.





12. Enter Station Call Letters In The **STN ORIG** Field.



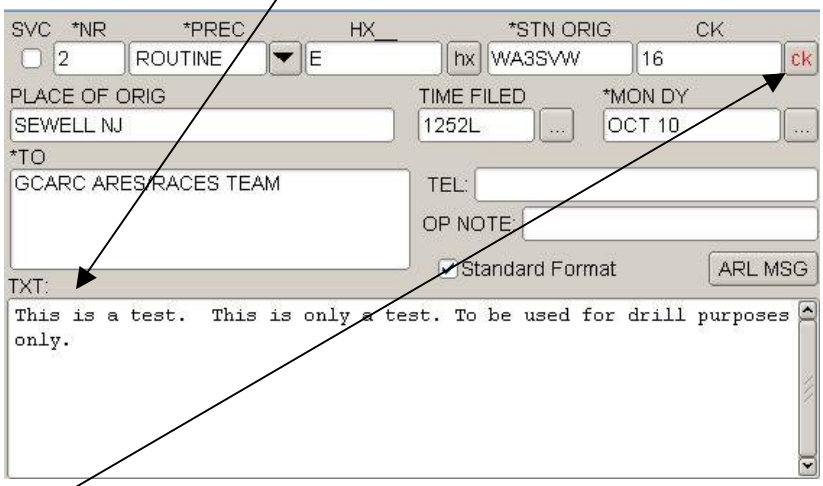
13. Enter Station QTH In The **PLACE OF ORIG** Field.

14. Click On The ... Buttons, For Both The **Time Filed** & **Mon DY** (Month Day) Fields, To Auto Fill Them (Provided The PC Clock And Calendar Are Accurate). They Also Can Be Entered, Manually.

15. Enter The Addressee In The **TO** Field.

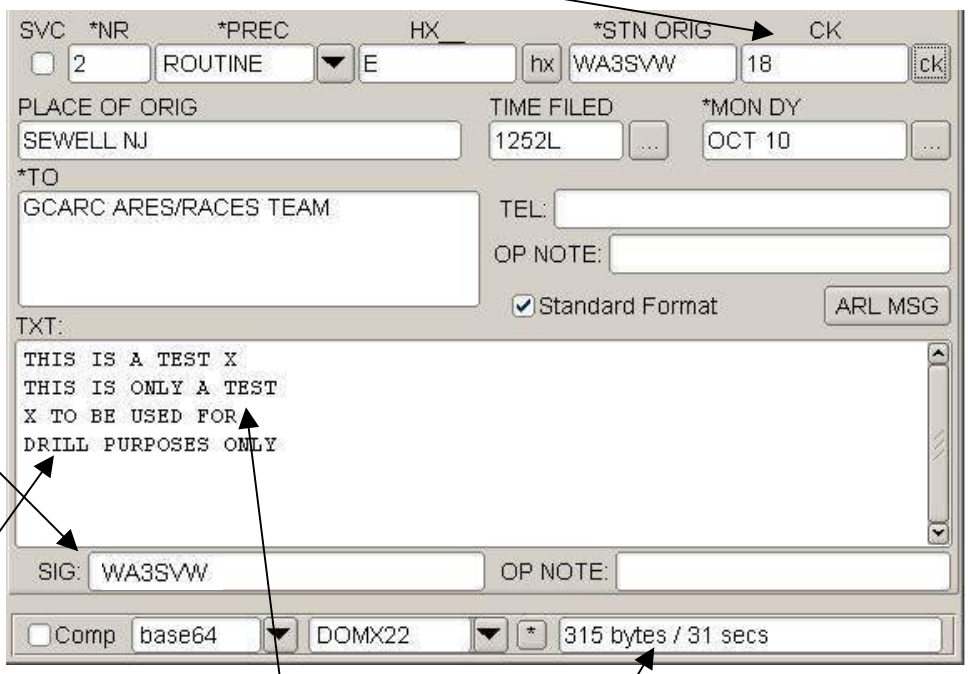
16. Enter The Body Of The Message Into The **TXT:** Field. It Can Be Typed, In A Normal Manner.

Note: Protocol Suggests Keeping The Message Body Limited To 25 Words, If Possible.

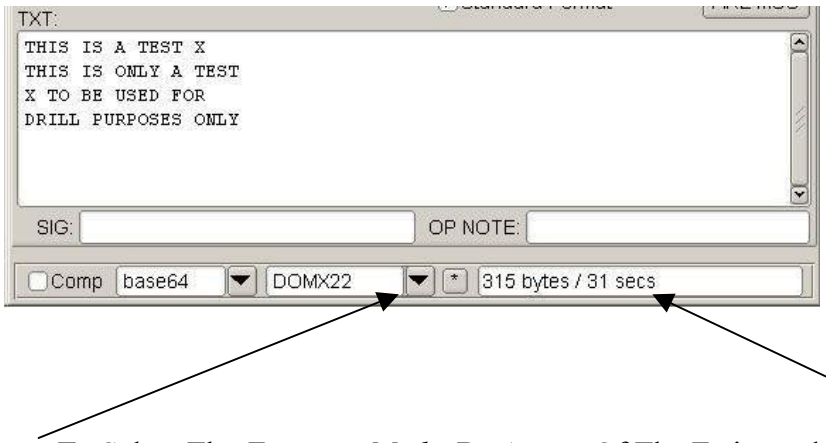


17. Click On The Red **ck** Button To Have FLMSG Re-Format* The Text & Auto Count The Number Of Words, Which It Places In The **CK** Field.

18. Enter The Station Call, Or Other Appropriate Signature In The **SIG:** Field.



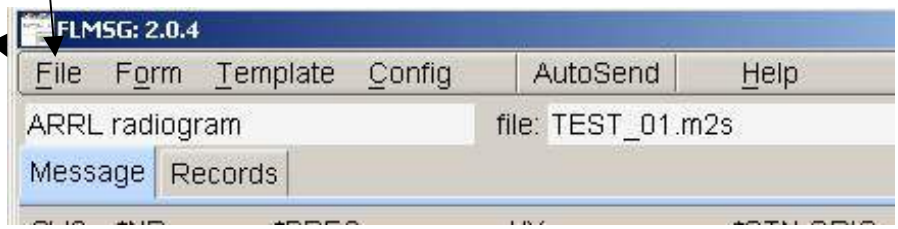
*Changes The Text To All Caps, Puts Five Words On A Line, Re-Calculates The Number Of Bytes In The Message, & How long It Will Take To Transmit.



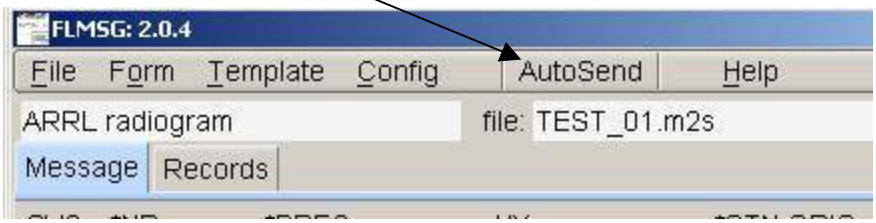
19. Use The **Drop Down Arrow** To Select The *Transmit Mode*. Be Aware Of The Estimated **Transmit Time** Displayed In The Window, To The Right. Balancing The Choice Of Transmit Mode & Robustness Vs. Speed Of Transmission Can Be Challenging. Keep In Mind That **Receiving Stations Need To Be In The *Same* Mode.**

19a. Go To The **Top Menu Bar** And Select **File** Scroll Down To Save, And ***Left*** Click.

Take Note Of The File Name, In Case You Want To Retrieve It, Later.



20. Click On The **AutoSend** Button On The Top Menu Bar To "Wrap" And Send The Message Via FLDIGI.



This Concludes The FLDIGI/FLMSG Course Portion Of This Document. There Is More Information About FLDIGI On The Following Pages, Covering Advanced Basic Understanding Of FLDIGI, Including A discussion Of The Macro Buttons, And how To "Program" Them.

H. <u>Using FLDIGI In The General Sense:</u> Macro Button Use & Programming, "Watering Holes"

1. **The Macro* Buttons:** FLDIGI Has A Set Of Twelve Buttons Located Above The Frequency Scale Of The Graphic Signal (WF, Etc.) Display Area.

The Macro Buttons Are Grouped & Color Coded To Correspond To The Function Keys (**F1 – F12**), On The Keyboard. Each Screen Button Is Linked To It's Own Keyboard Function Key. The First Screen Button (**CQ**), Is Linked To The **F1** Keyboard Key, The Second Screen Button (**ANS**) Is Linked To The F2 Keyboard Key, And So It Goes, All The Way Up To Screen Button Twelve, And Keyboard Function Key **F12**. Each Function Indicated On The Screen Key, CQ, For Example, Can Be Initiated By Clicking On The Screen Key, Or Pressing The Associated Keyboard Function Key (F1, In The Case Of The CQ Key). There Is Also A Macro Group Number Key Just To The Right Of The Last (Twelfth) Macro Screen Button (See Label On Upper Right) There Are A Total Of 4 Macro Button Groups That Can Be Accessed, For A Total Of 48 Screen Macro Buttons. The Same Function Keys (F1 – F12) Are Assigned To Each Set. To Change The Macro Button Group, Simply Click On The Button Group Key, And It Increments Through The 4 Sets Of Buttons (If It's One **1**, And You Click On It, It Increments To **2**, Next Click, **3**, Next Click, **4**, Next Click, Back To **1**).

2. <u>**Ok, So How Are The Macro Buttons Helpful?**</u>

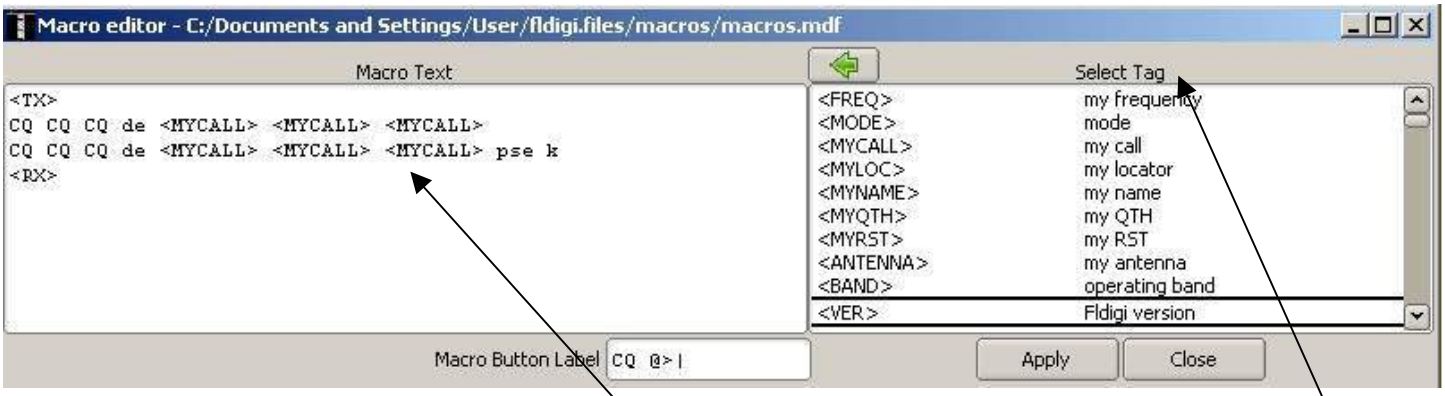
   The Macro Buttons Perform Routine Repetitive Functions, Like Calling CQ, For Example, Without The Operator Having To Constantly Type In The Letters To The Transmit Screen, Every time This Function Is Desired. It Is A Time Saver, And Eliminates The Possibility Of Error, Due To Fatigue.

   Left Clicking ***Performs*** The Indicated Function, **Right** Clicking Brings Up An Editor For Changing Or Creating A Function. **Caution: *Left* Clicking Some Macro Buttons, Or Pressing Their Corresponding Keyboard Function Keys Will Put FLDIGI In Transmit Mode, And Your Radio In Transmit, If It Is Connected, And Active.**

* A Macro Is A Small Program Within A Program, That Runs A Sub-Routine Function

3. A Closer look At A Macro Button And It's "Program":

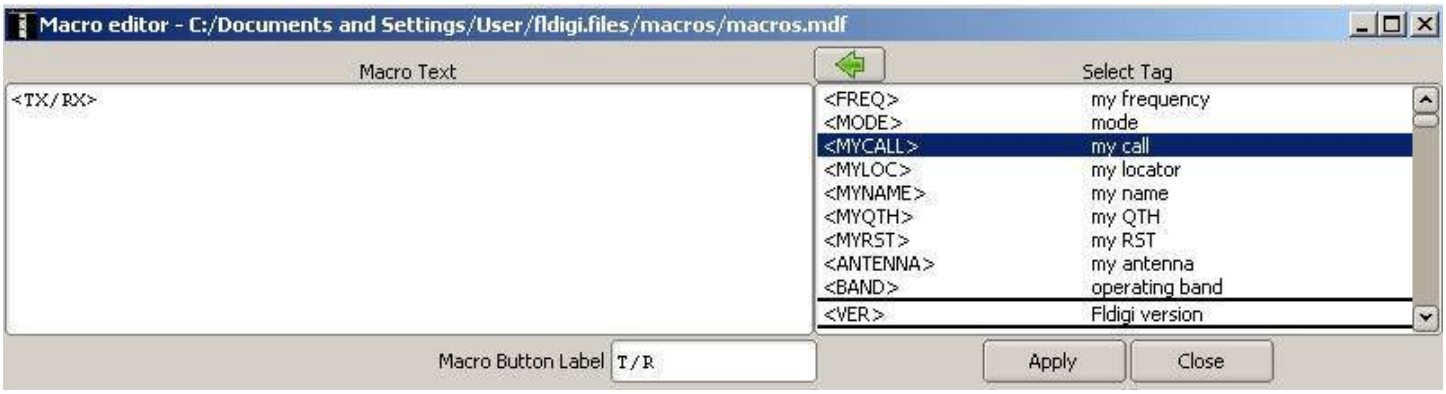
Right Click, On The First Macro Screen Button (**CQ**), We Should See This:



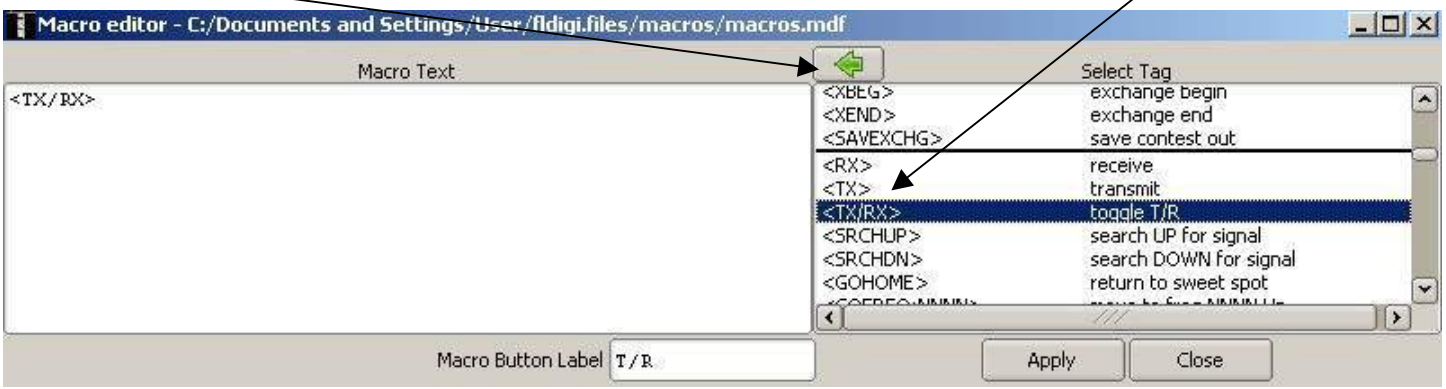
Let's Analyze The Content Of The **Macro Text** Screen. The First Line Contains A Command **(<TX>)** For Putting FLDIGI Into The **Transmit** Mode. All **Command** Entries, As Opposed To Text Entries, Are Preceded With A "Less Than" Symbol **<**, Then The Command Word, Then The "More Than" Symbol **>**. This Allows FLDIGI To Differentiate Between Text, Which Just Gets Printed, Or "Displayed", And Commands That Perform A Function, Like Switching To The **Transmit** Mode, Or Switching To The **Receive** Mode. The **< >** Symbols Also Can Contain Embedded Constants, Like A Station's Call Sign. Look At The First Line, After The <**TX**> Command. It Contains The Text "**CQ CQ CQ de**" Then Three **<MYCALL>** Commands. The <**MYCALL**> Constant Inserts The Station Call Sign That Was Entered Way Back In Step 3., On Page 3 Of This Document. There Are Dozens Of These "**Commands**" That Can Be Added To Perform Tasks, Or Add Previously Entered Station Information In The FLDIGI Setup Screens. Scrolling Down The **Select Tag** Screen On The Right Side Of The **Macro editor** Screen Reveals The Entire List. To "Move" A Command From The Right **Select Tag** Screen To The **Macro Text** Screen, Highlight The Command, By Clicking On It, Then Click On The **Green Arrow**  **Button** Located On The Top Left Of The **Select Tag** Screen. The Command Appears On The Macro Text Screen Where The Cursor Is (Like In A Word Processor).
The Third Line Is A repeat Of The Second Line Producing A "**CQ CQ CQ de <MYCALL>**" With A "**pse k**" At The End. Correct Protocol For A digital CQ Station Call, As In A PSK31 QSO.
The Fourth Line Contains A Command To Do What, Can You Guess? That's Correct, To Place FLDIGI Back Into The **Receive** Mode. Because This Particular Macro Contains Both A Transmit & Receive Command, No Further Action, By The Operator Is Necessary To Activate & Complete This Function. However, There Are Macros That Require Manual Transmit & Receive Commands.

For Example, If The **<TX>** And **<RX>** Command Are Removed From The **CQ** Macro, And The Macro Was Activated (Click On The Screen Button, Or Push Keyboard **F1**), FLDIGI Would Place The Text Lines On The **Transmit Screen**, And Perform No further Action. It's As If They Were Typed Directly To The Transmit Screen, By The Station Operator. To Send The CQ, The T/R Button, Or Keyboard F9 Would Have To Be Clicked, Or Pressed To Activate The Transmit Mode. The T/R Macro Key Is Setup To "Toggle" Between Transmit And Receive.

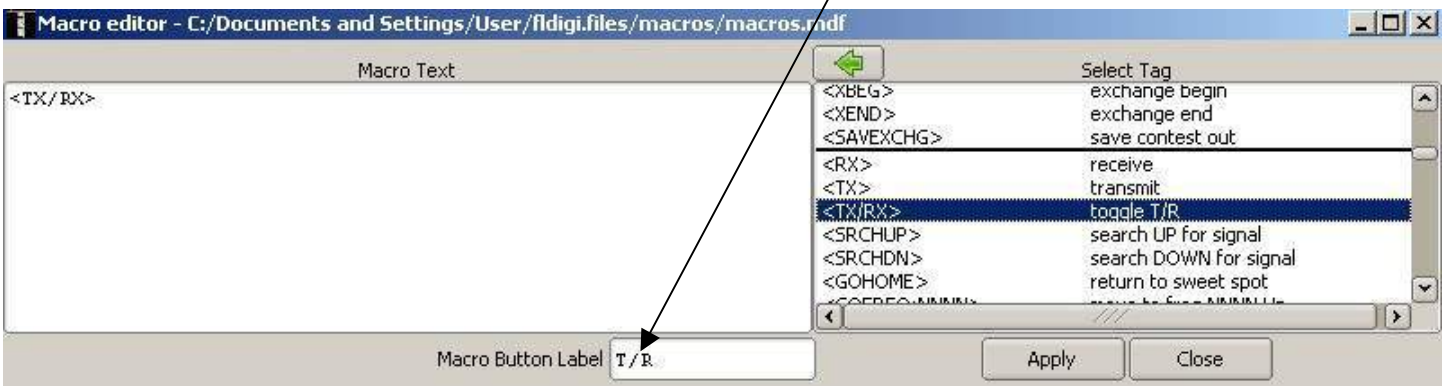
Let's Take A look At The **T/R** Button's Macro Program:
Right Click On The T/R (9th) Button. Again, A Macro Editing Screen Appears For The Chosen Button.



This Is One Of The Simplest Macro Routines Assigned To A Button. It Contains Only One Embedded Command. The Transmit/Receive Toggle. It Is Available By Scrolling Down The **Select tag** Screen, Then Choosing It By Clicking On It, To Highlight It (Just As Previously Described In The CQ Button Discussion) Below, Shows The **Select Tag** Screen Positioned Where The Toggle Command Would Be Selected And Chosen.

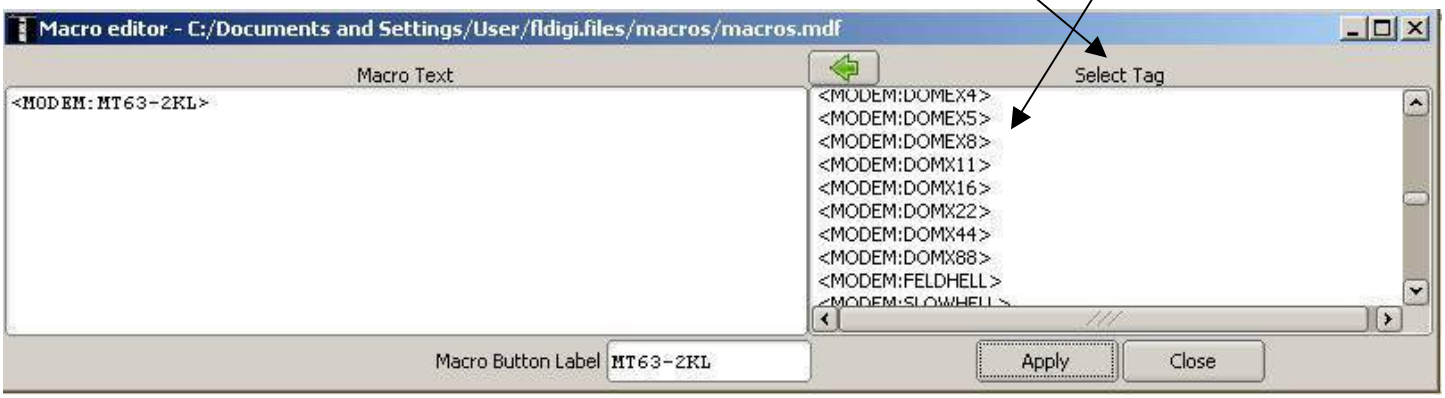


Most Of The Screen Macro Buttons Have Been Pre-Programmed, In Set 1, As Well As, Some In Set 2. The Buttons In Set 3 & 4 Have Not Had Any Programs Placed Into Them, By Default. You Can Program Any Of The 48 Buttons To Your Own Needs & Preferred Position. If You Want To Have The CQ Button In A Different Position, Just "Program" Another Button With A Macro "Program" That Performs The Needed Task. One More Thing, There Is A Field In The Macro Test Editor That "Labels" The Button You Are Creating, Or Modifying. It Is Appropriately Called The **Macro Button Label**.



The Window Accepts Text & Some Keyboard Symbols, And Displays Them On The Button Face, Automatically Centered. Just Keep In Mind, There Is Only So much Room On Each Button Face For Label Text (About 23 Characters).

Here's A Cool Tip: The Bottom Portion Of The **Select Tag** Screen, On The Macro editor, Contains All Of FLDI's *Modem Command Modes*. By Assigning A Button To A **Modem Command**, You Can Create A "One Push" Button (Or Buttons), To Quickly Change Operational Modes, Without Having To Click On The **Op Mode** Menu Item, Then Scrolling Down Lists, And Finding The Mode You Want. Just Click The Button For That Mode, And FLDIGI Is Instantly Switched To It. ***Very Convenient…***

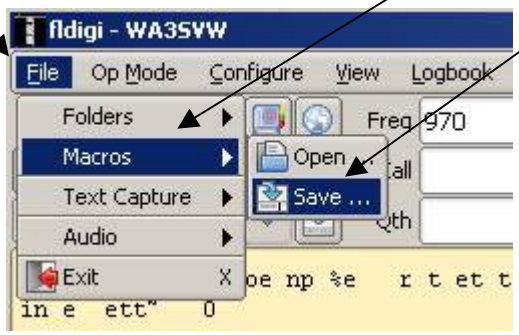


Use Your Imagination To Come Up With Your Own Macro Buttons. Remember You Have 48 Of Them With Which To Play. (Remember The Macro Groups Button On The Right Side?)

After Modifying Current Macro Buttons, Or Creating New Buttons, They *Must* Be Saved In The Macro Setup File. It Is *Imperative* That You Click On **File** In The Top FLDIGI Menu, Scroll Down To **Macros**, Then **Save**, And ***Left*** Click.

.

Note:
Failure To Perform The Macro ***Save*** Step, Shall Result In Loosing New Buttons You Have Created, Or Changes In Current Buttons, The Next Time FLDIGI Is Loaded.

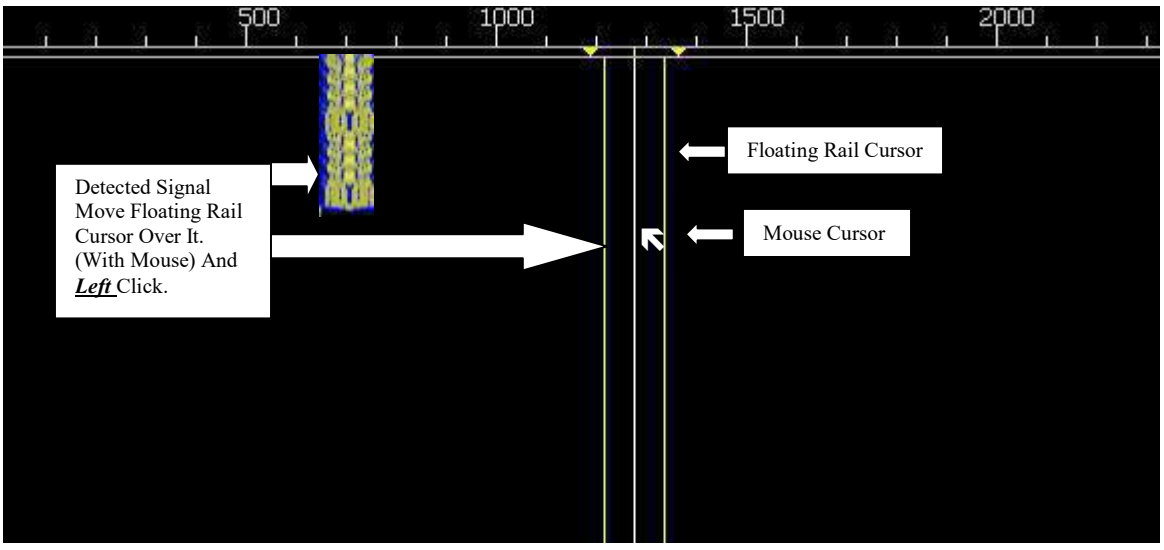


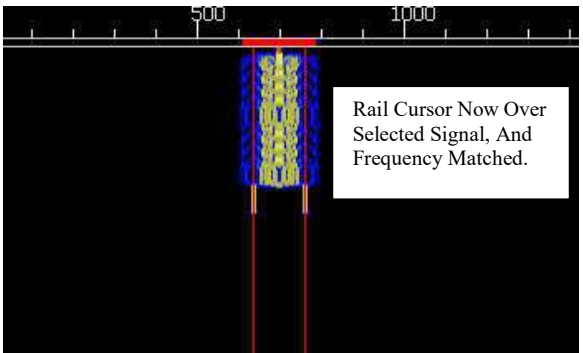
4. <u>Using The Transmit Screen For Text Entry:</u>

Using FLDIGI For General QSO Operation, Is, Of Course, One Of The Popular Activities Among Ham Radio Operators. The Previously Discussed Macro Buttons Can Be A Large Part Of These Activities, From Calling CQ, To Sending Information About Yourself (Name, QTH, Model Of Rig, Antenna Type, Etc.), As Well As, Closing A QSO (Sending 73's & QSL Information) The Buttons Can Make It More Efficient And Less Prone To Errors. However, There May Be Times you Just Want To Hold "Rag Chews", Simply By Typing In "On The Fly", Your Thoughts As The Situation Calls For. It's Easy To Do….
You Simply Place FLDIGI In Transmit, With The **T/R** Button (Or Key), And Type Your Text In The **Transmit Screen**. (See Locator On **FLDIGI Main Screen Handout**) This Places FLDIGI In A "Live" Text Transmit Mode. The Characters Are Transmitted, As You Type Them. If You Prefer, You Can Also Type Into The Transmit Screen While FLDIGI Is In The **Receive** Mode (During The Time You Are "Listening" To The Other Station, For Example), And Then Activate The **T/R** Button (Key). It's A Way For Slower "Typists" To Be Able To Utilize This Mode. Again, There Is No "Right" Way, Or "Wrong" Way…Whatever Way You Are Comfortable Is Correct.

5. <u>Responding To A Selected Signal (CQ's, Etc.):</u>

Frequently, One Needs To Respond To A Particular Signal Seen On The Waterfall. You Can Do This By Moving Your Mouse Cursor (Arrow) Onto The Active Portion. A "Floating" Rail Cursor Appears. Place The Rail Cursor Over The Signal That You Want To Choose, And Left Click It. If You Are In The Same Operating Mode Of That Transmitted Signal, The Cursor Should "Fit" Perfectly Over It.

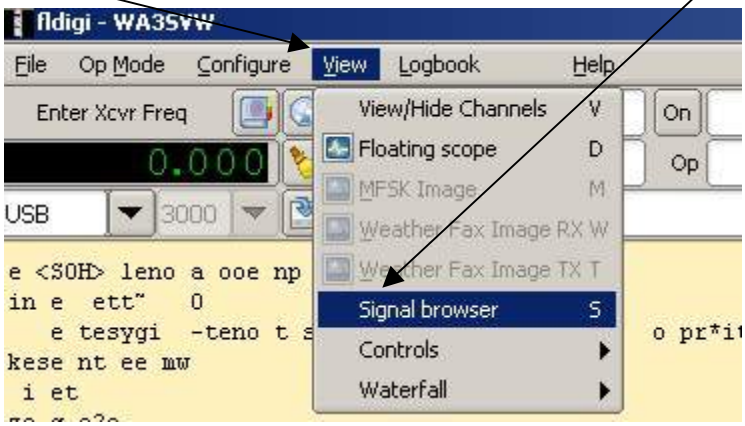




You Have Now Placed The Rail Cursor Over The Selected Signal, And Your Transmissions Should Appear, On, Or Very Near The Other Station's Rail Position, On Their Screen, When You Transmit Your Reply. There May Be Frequency Differences Caused By Transmitters Or Sound Cards Being slightly Out Of Calibration From Each Other. Slight Adjustments In Cursor Placement, May Be Necessary.

6. <u>Viewing Signals From Multiple Stations:</u>

There Are Times When You May Want To View Text From more Than One Station, At A Time. Perhaps To Determine What Stations Are "DX", Or What Stations Are Calling CQ, Or Are In The Middle Of A QSO. This Can Be Done By Selecting **View** From The **Top Menu Bar**, Then Scrolling Down To **Signal browser**…



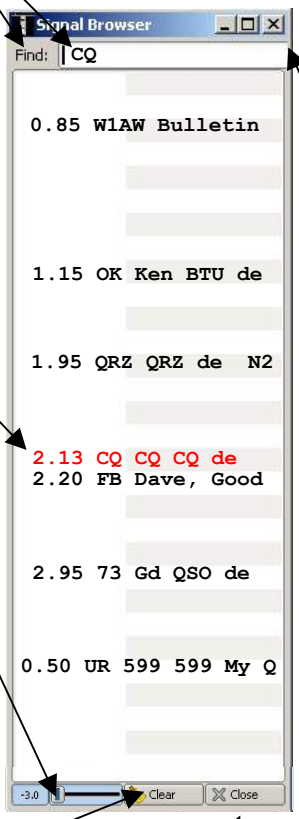
This Brings Up A Signal Browser Screen Which Displays Text From All Signals Seen In The Waterfall, Provided Their Strength Is Adequate To Be Properly Decoded. The Text Is Preceded By The Frequency (in KHz) Where The Signal Falls On The Waterfall. The Text Scrolls From Right To Left, With The Frequency Indications Remaining Fixed.

<u>Left</u> Clicking On Any Signal Text Line, Places The Rail Cursor On That Frequency On The Waterfall, Thus Allowing Instant Access To That Signal, As Soon As The Station Completes Its Transmission.

<u>Right</u> Clicking On A Line Deletes That Station's Entry (May Vary With Different Versions Of FLDIGI)

Note:
Station Signals Appear In Order Of When They Are Decoded, Not Necessarily Sorted By Their Frequency.

The Signal Browser Is Capable Of Finding Specific Text. For Example, Stations Calling CQ. You Can Enter The Desired Search Text Into The **Find** Field. If A Station Is Transmitting A Matching Text String, It Appears In Red On The Browser.



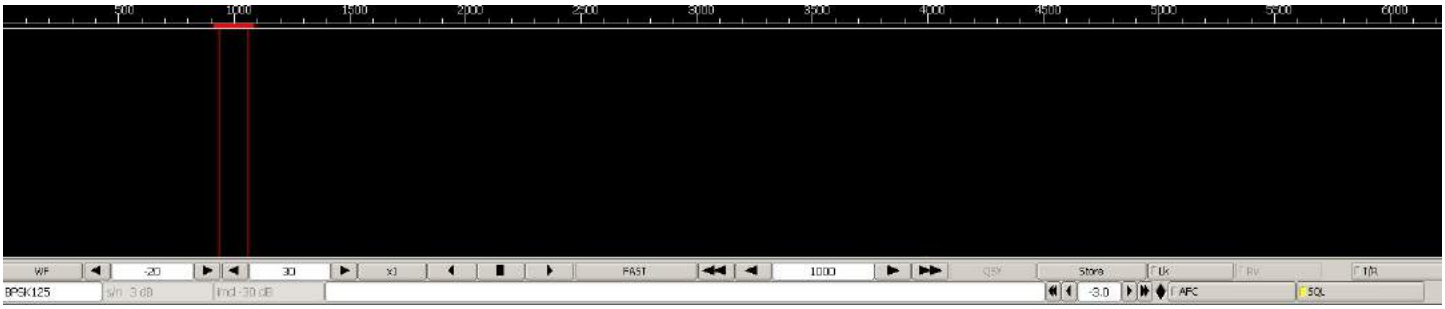
Just A Few More Things About The Browser:

There Is A Squelch Control Slider That Allows Adjustment Of The Browser's Sensitivity To Incoming Signals. It's Effectiveness Varies With Signal Strength, So Don't Over Think It's Use.

A **Clear** Button Is Also Available. This Erases The Text Display Screen, Then It Slowly "Refreshes", As "New" Signals Are Received.

The **Close** Button Functions Just Like The **X** On The Top Right Of The Browser, In Windows. They Both Remove The Browser Window From The Screen.

7. Some Other Buttons & Windows On The Bottom Of The Signal Display:

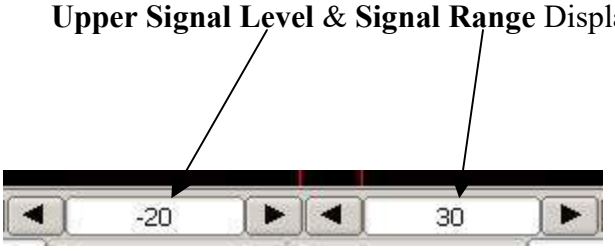


As Previously Discussed. The Display Function Button (Far Left) Determines What, Of Three, Modes The Display Screen Produces.
WF (Waterfall)
FFT (Standard Spectrum Analyzer Disp.)
Signal (Standard Oscilloscope Disp.)

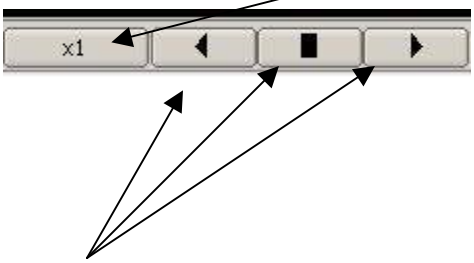
Simply ***Left Click*** On The Button To Change Modes.

Current **FLDIGI Op Mode** Display[1]

Upper Signal Level & **Signal Range** Display Windows: By Adjusting These Two Controls With The Left (Reduce Level), Or Right (Increase Level) Arrows, The Signal Sensitivity Of FLDIGI Can Be Set. This Makes The Program More, Or Less Responsive To Signals, As Well As Noise. *These Are Disabled In Signal Display Mode.*



Display Magnification Button: ***Left*** Clicking On This Button Changes The Magnification, Or "Zoom" View Of The Displayed Frequency Scale. The Steps Are: x1, x2, x3, & x4.



Display Slew Buttons: Single Clicking On The ***Left*** Arrow Slews The Displayed Scale To A Lower Frequency. Single Clicking On The ***Right*** Arrow Slews The Display To A Higher Frequency. Clicking On The ***Square***[2], Centers The Display On The Rail Cursor Frequency (May Vary With Op Modes).

[1]There Is More To This "Display" Than Meets The Eye, More Later. [2]Works Only On x2, x3, & x4 Modes

Display Speed Button (Most Effective In WF Display Mode): This Button Allows You To Cycle Through The Display Speed Modes. Effects The Waterfall Display More Than The Others. The Available Modes Are **Slow**, **Normal**, **Fast**, & **Pause**.

Fast Speed Reacts To Signals Rapidly, **Normal** Speed Is A little Slower To Display Signals, **Slow** Is Good For Keeping The Trace On The Screen Longer To Analyze It, And **Pause** "Freezes" The Display For Long Term Study, Or To Photograph It.

Center Frequency Display & Adjustments:

The Center Receive/Transmit Frequency Window, Displays, In Hz, Where The Center Of The Rail Cursor Is Pointing. This Determines The Receive & Transmit "Center" Frequency. Unless Overridden By The **Lk** (Lock) Button.

The Arrow Button Explanations Are Found On **Page 2.**

QSY Button: Active *Only* With Certain Rig Interfaces (Usually "Grayed" Out.

Lock Button: ***Left*** Clicking Locks The Transmit Frequency To The *Current* Rail Cursor Center. (Displays Green, When Locked)

Store Button: Stores Current Mode & Center Frequency (Left Click), Displays List Of Stored Info (Right Click), Scroll To Select From List, To Switch To That Mode & Frequency.

Transmit/Receive Indicator: Appears Red When FLDIGI Is In **Transmit**. Appears Gray When In **Receive**.

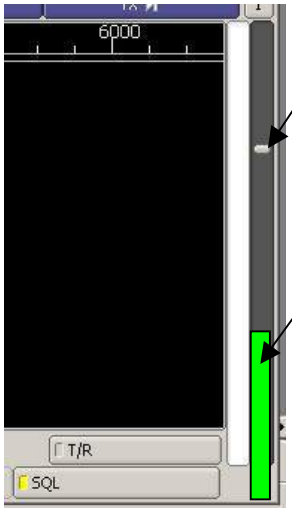
Squelch Button: Turns On *Digital* Squelch. Appears *Yellow*, When On, Gray, When Off. Most Of The Time You Want It **Off**.

Automatic Frequency Control Button: (Not Available In All Modes) When Activated (Green), Has FLDIGI Attempt To Lock Onto The Center Frequency Of The Incoming Signal. (Recommend Keeping It Off)

Transmit Level Attenuator: This Window Displays The Setting Of The Attenuation Of The Output Audio Signal, To The Transmitter (Interface), In Db's. Double Arrows Adjust Units, Single Arrows Adjust Tenths. ***Left*** Arrows *Reduce* The Level, ***Right*** Arrows *Increase* The Level. Start With –3.0 Db, Then Adjust Interface Levels, If Necessary.

Digital Squelch Control Slider: Adjusts Level Of Where Digital Squelch Suppresses The Displayed Text Of Incoming Signals. If Set Too High, May Prevent Text From Printing From Desired Signals. If Set Too Low, Random Characters Appear On Text Screen (From RF Or Ambient Room Noise)

Recommendation: ***Set Well Above Received Signal Level, Or Turn Off With Squelch Button.***

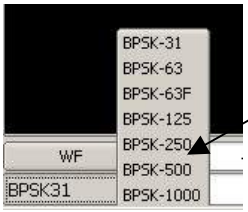


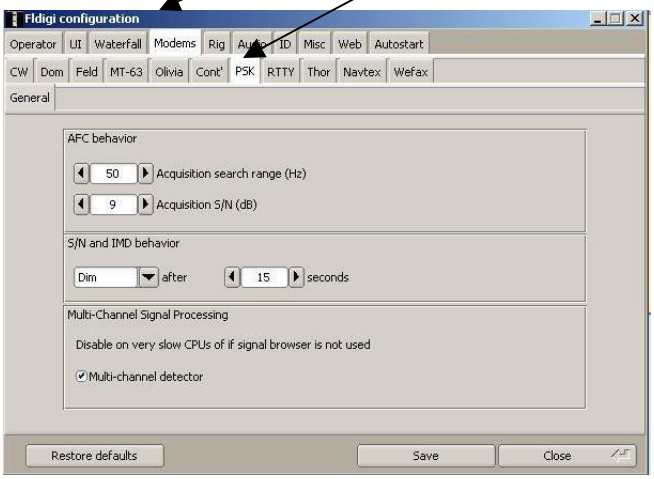
The Current Op Mode Display Window:

This "Window", Is Officially Named The Mode Status Indicator. It Is, In Fact, A Button Disguised As A Status Window.

Left Clicking Opens A Quick Pick List Of Associated Mode Types. You Can Switch To Another Mode, In The Group, From The Popup Menu.

Right Clicking Opens The Configuration Dialog Window At The **Tab** Associated With The Current Mode (Modem) Type.





Using The Mouse Scroll Wheel, While The Mouse Cursor Is ***Inside*** The Window, Rotates Forward And Backward Through The Various Mode Types, Following The Modem Menu Hierarchy. Stop At The One You Want, And You Have Placed FLDIGI In That Mode.

The Windows Just To The Right Of The **Mode Status Indicator** Are The Received Signal Strength (In Db), And IMD (In Db), Respectively. (Operate During Received Signals, Only)

Operating Frequencies, Net Frequencies & "Watering Holes": If You Want To Listen, Or Participate, In QSO's Involving The Different Modes Of Digital Communications, You Can Use The Following Complied Information To Get Started With Where To "Hang Out".

PSK31 Communication Can Be Found AT The Following Locations:

Band:	**Frequency: (in KHz)**
40 Meters	**7035**
40 Meters	**7070**
20 Meters	**14070**
15 Meters	**21070**
10 Meters	**28120**

NBEMS (Narrow Band Emergency Messaging Service) **Nets:**

Net:	Band:	Frequency:	Day/Time:	Mode:	WF Cent. Freq.
Chester County (PA) NBEMS Net	80M	3.583Mhz	Sun./10:00ET	Olivia 8-500	1500Hz
Chester County (PA) NBEMS Net	40M	7.0725Mhz	Sun/11:00ET	Olivia 8-500	1500Hz
KY Digital Net	80M	3.585Mhz	Sun./19:00ET	PSK31	1000Hz
CaNBENS NET	80M	3.585Mhz	Sun./20:00PT	THOR11	????Hz
VA Digital Net	80M	3.5780Mhz	Mon./19:15ET	Olivia 4-500	1800Hz
Vienna Wireless Society	80M	3.5780Mhz	Mon./20:00ET	Olivia 16-500	1000Hz
PhilMont Digital Net	2M	147.030 (PL 91.5)	Tue./19:00ET	Various	Various
VA Digital Net	80M	3.5780Mhz	Tue./19:15ET	Olivia 4-500	1800Hz
IN Digital Traffic Net	80M	3.5830Mhz	Tue./19:30CT	Olivia 8-500	1000Hz
MI Digital TN	80M	3.5830Mhz	Tue./20:00ET	Olivia 8-500	1000Hz
ME NBEMS	80M	3.590Mhz	Wed./18:30ET	Olivia 8-500	1000Hz
USEast NBEMS Net	40M	7.0360Mhz	Wed./19:00ET	Olivia 8-500	1500Hz
VA Digital Net	80M	3.5780Mhz	Wed./19:15ET	Olivia 4-500	1800Hz
VA Digital Net	80M	3.5780Mhz	Thu./19:15ET	Olivia 4-500	1800Hz
MI Digital TN	80M	3.5830Mhz	Thu./20:00ET	Olivia 8-500	1000Hz
MN ARES DN	80M	3.5835Mhz	Thu./20:00CT	Olivia 16-500	1000Hz
Tri State NBEMS	80M	3.5930Mhz	Sat./09:30ET	Olivia 8-500	1500Hz
NY NBEMS	40M	7.0360Mhz	Sat./10:00ET	Olivia 8-500	1500Hz
Satern Net So. Ter	20M	14.065Mhz	Sat./12:00CT	Olivia 8-500	1000Hz
NY NBEMS	40M	7.0360Mhz	Sat./10:00ET	Olivia 8-500	1500Hz
MI Digital TN	80M	3.5830Mhz	Sat./20:00ET	Olivia 8-500	1000Hz

JT 9* Weak Signal/DX Limited Dialog Mode (USB):

Band:	Frequency:
40M	7078Mhz
20M	14.078Mhz

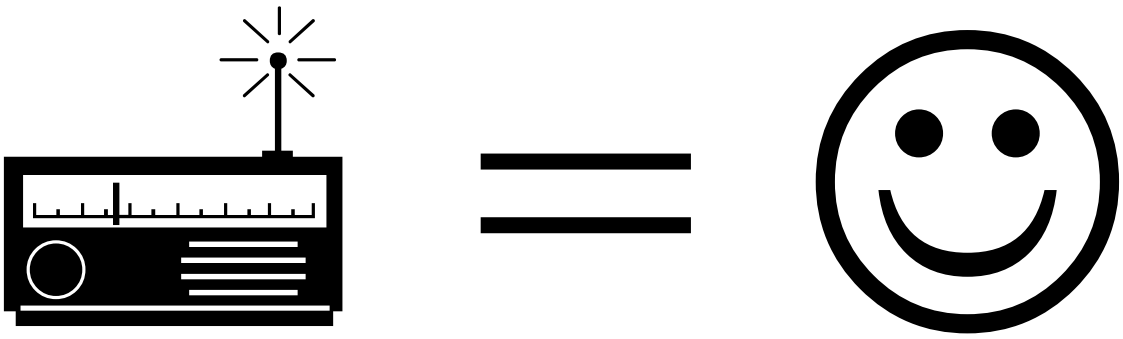
JT65* Weak Signal/DX Limited Dialog Mode (USB):

Band	Frequency:
20M	14.036Mhz
20M	14.076Mhz
15M	21.076Mhz
10M	28.076Mhz
10M	28.120Mhz
10M	28.126Mhz

*Not An Operating Mode Of FLDIGI, Use WSJT-X (Free), By Joe Taylor (K1JT) “Google” For Download Info.

This Concludes The FLDIGI/FLMSG Training Document & Course. The FLDIGI User Manual Is 262 Pages, In Length. There Is A Lot More To Be Learned & Experienced About FLDIGI & FLMSG, And Other Digital Modes. Station Operators Are Encouraged To Download The User Manual PDF Files For Both Applications, And Go Through Them, As Time Permits. They Make Excellent Reference Material.

Practice Often, Get Familiar, Have Fun…



73

Gary
WA3SVW