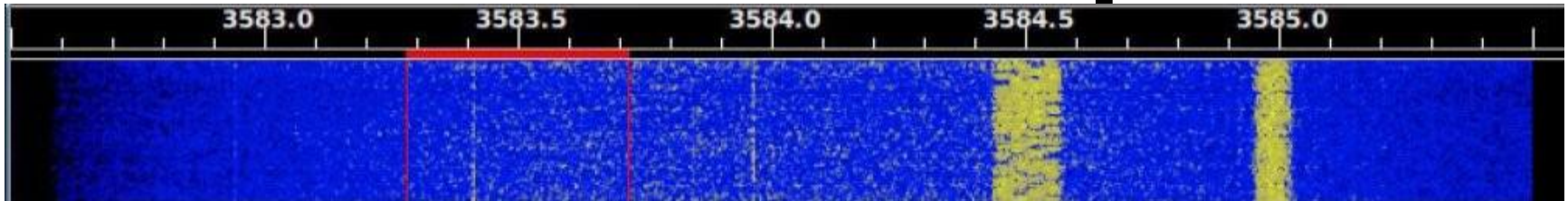




Fldigi

Fast Light Digital

Workshop



January 28, 2011
Toledo, Ohio

What we will cover

Session 1 (Today)

1. Hardware needed
2. Software needed
3. Hardware installation
4. Software installation
5. Software configuration
6. Transmitting and receiving digitally

Session 2 - Date TBD

1. NBEMS (Narrow Band Emergency Messaging Software)
2. Flwrap
3. Flmsg
4. Modes – when to use

What do you need?

- Transceiver for the band desired
- Laptop/Desktop with sound card
Sound card may be part of the interface hardware
- Hardware interface between computer and radio
Not required if acoustically coupled
- Software – Readily available & most are free

What do you need?

Receiving

You do *not* need the interface

Typically 1/8" stereo audio cable **or** computer mic

RadioShackModel: 42-2387 \$14.99

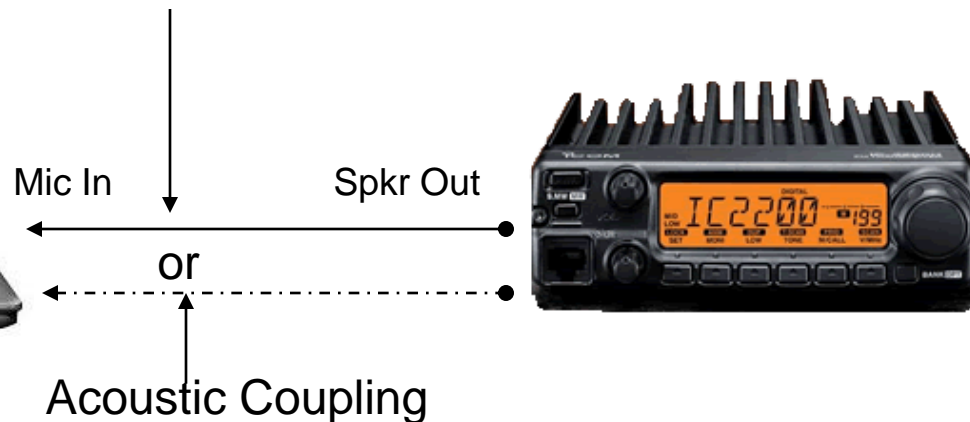
Software - fldigi

Computer & Receiver/Transceiver/Scanner

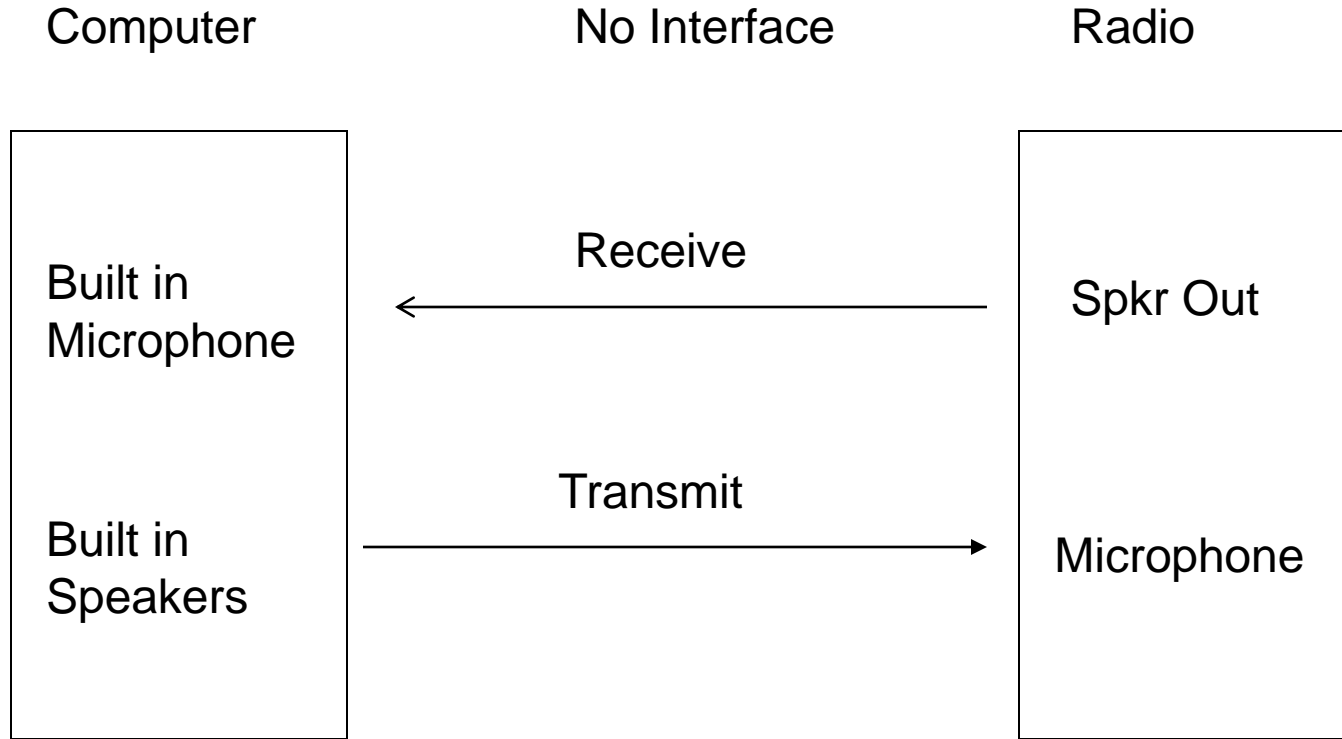


KC8TVW 2012

1/8" stereo phone plug audio cable

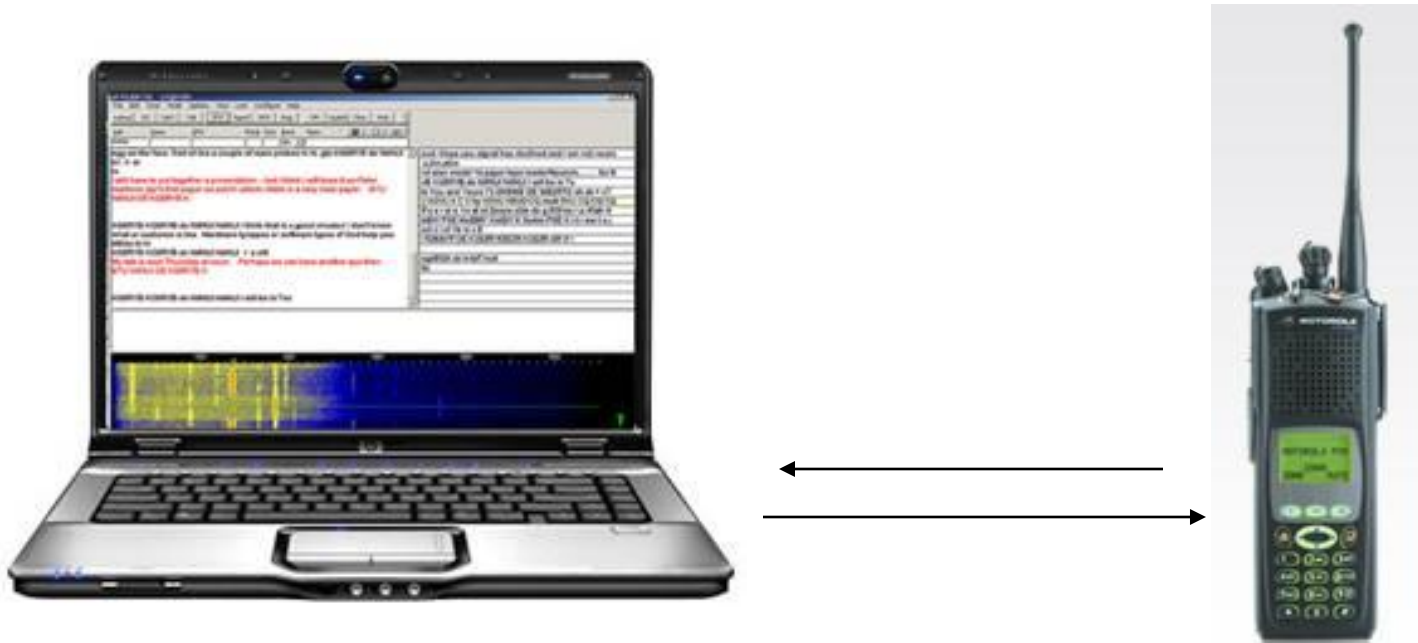


Simple – Acoustic Coupling – Transmit and Receive



Simplest, but least reliable

Simple – Acoustic Coupling – Transmit *and* Receive

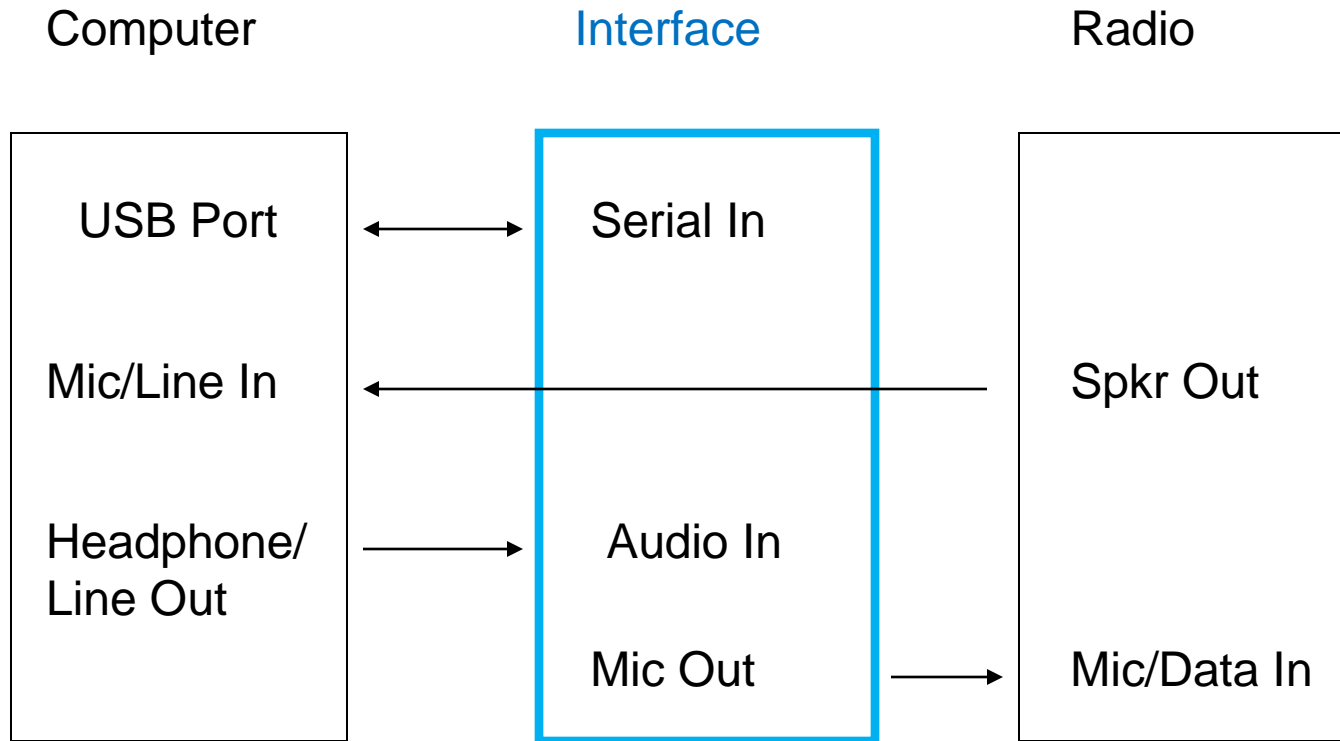


Manual Control

Using the computer soundcard

1. Four or Five cables
2. Soundcard is not designed around communications
3. Other programs can change sound card settings
4. May need to change to run other programs

Interface without a built-in soundcard



Most Computers: Desktop=Line in/Line Out
Laptops=Mic in/Headphone

Interface without a built-in soundcard

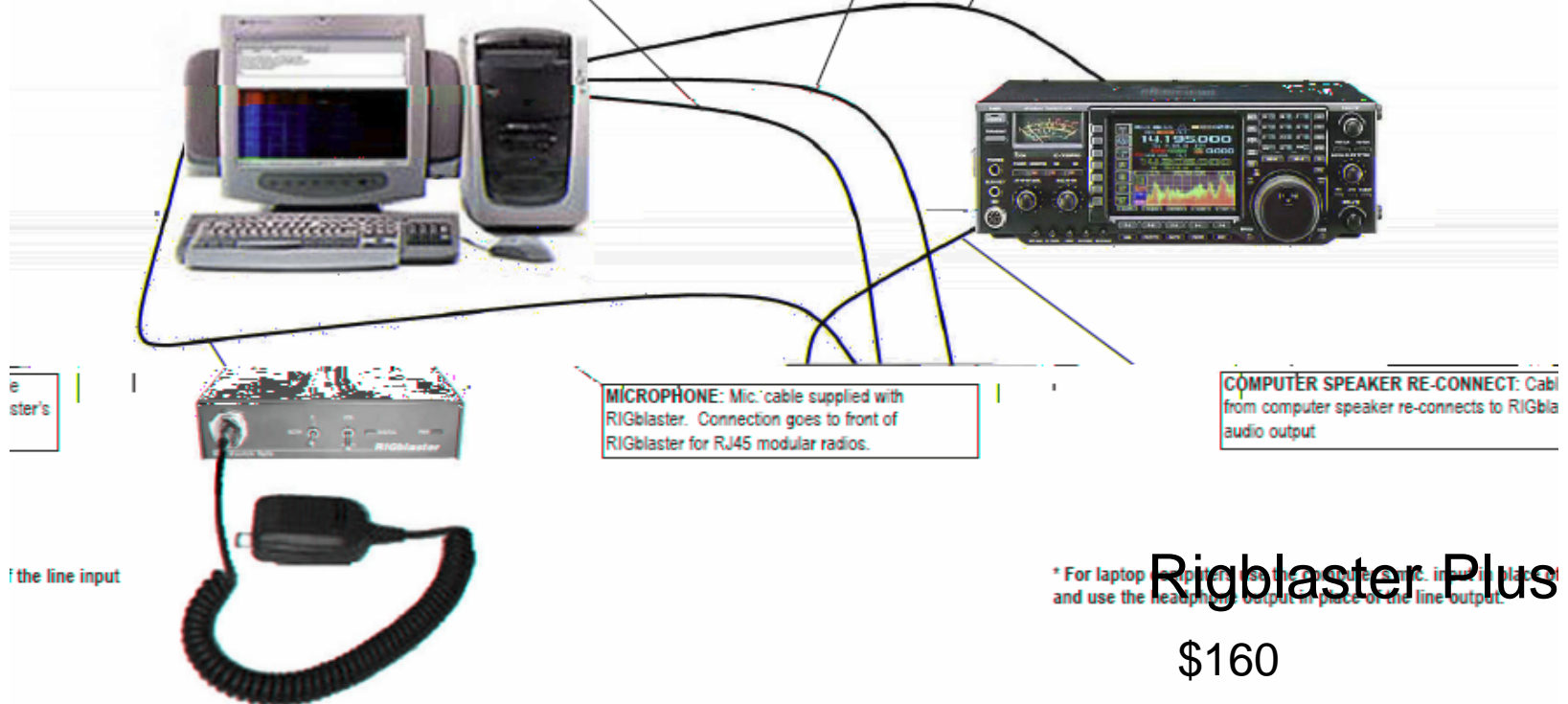
Basic station hookup diagram.

Note: This diagram is a basic sound card station hookup and does not show a keying connection for CW and/or FSK. That connection is user supplied and requires an 1/8" mini jack to connect the key out of the RIGblaster to the radio's straight key input and/or FSK keying terminals.

PTT, KEYING & SWITCHING: Supplied DB9M to DB9F serial cable connected between the RIGblaster's serial jack and computer's com port. (not needed for VOX)

TRANSMIT AUDIO: Supplied 3.5 mm, 1/8" stereo phone plug patch cord from computer's line* output to RIGblaster's audio in.

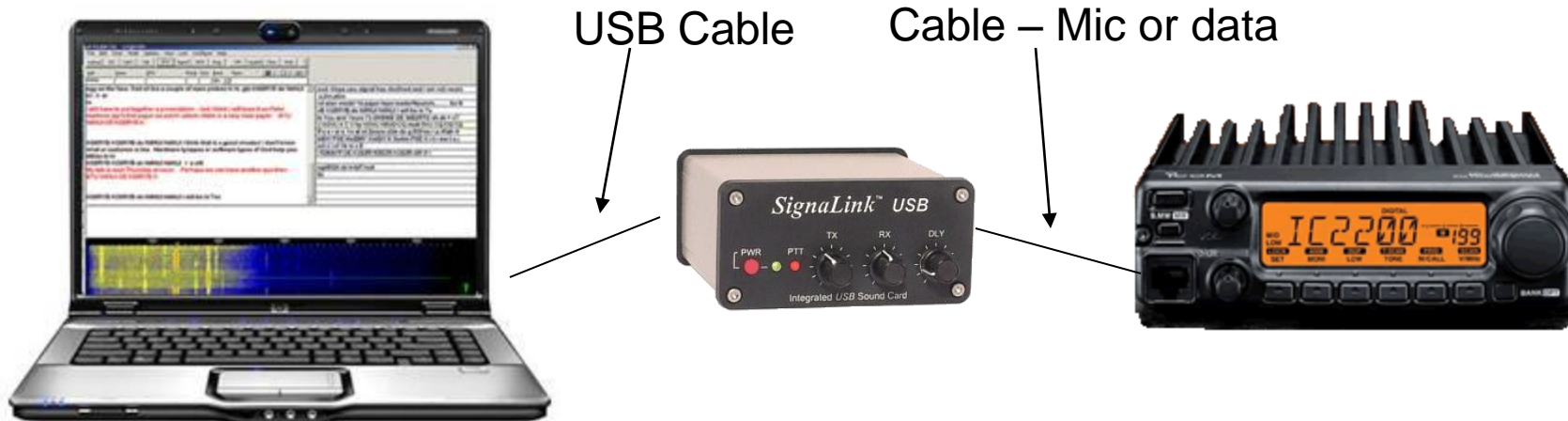
RECEIVE AUDIO: Supplied 3.5mm, 1/8" stereo phone plug patch cord from radio's speaker or line out to computer's line* input.



Rigblaster Plus

\$160

Interface with a built-in soundcard



Tigertronics SignalLinkUSB \$100-105

<http://www.tigertronics.com/>

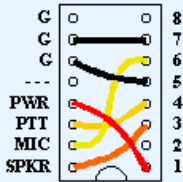
Additional Mono Cable –

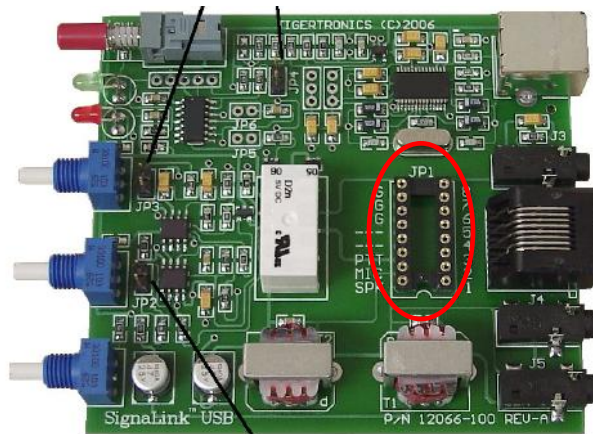
Used with radios that do not have Receive Audio on the Mic jack.
If you connect to your radio's Data or Accessory Port, not needed

How does one interface work with many radios?

1. Radio specific cable (specify radio when purchasing)
2. User installed jumpers (or jumper module)

RJ-45 Mic Connector (use SLUSB RJ4, SL1+RJ45, SL1-RJ45 or SLCABF)

JP-1	Pin-out	Radio Models
	Pin 1 - +8V**	IC-207H**/208H**
	Pin 2 - N/C	IC-281A/281E/281H
	Pin 3 - Speaker**	IC-703/706/706MKII
	Pin 4 - PTT	IC-2000
	Pin 5 - GND (mic)	IC-2100H**/2200H**
	Pin 6 - Mic Input	IC-2700**/2720H**
	Pin 7 - GND	IC-2800**/2820**
	Pin 8 - N/C	IC-7000**
		IC-V8000**
		ID-800H**



Signalink USB wired with an HT ?

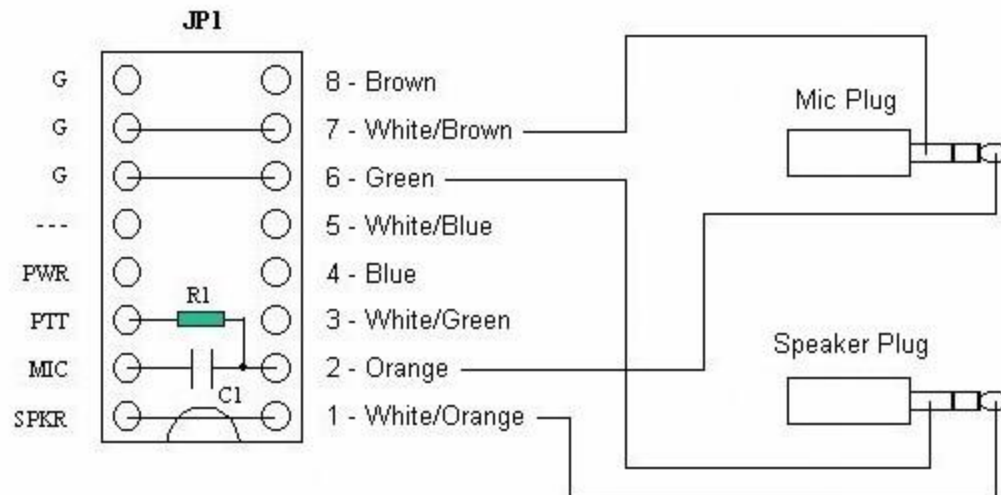
The diagram shown below is for a typical HT with a combination Mic/PTT line. Your radio may require different connections from those shown. Check your radio manual before installing the jumpers or building your radio cable.

Yaesu users: The diagram shown below works great with Yaesu's CT-91 adapter (fits VX-120, VX-170, VX-127, VX-177, VX-6R, VX-7R, etc.). However, you need to use ****mono**** plugs instead of stereo.

Signalink Jumper Settings & Cable Wiring Diagram For HTs with a Combination Mic / PTT Line

R1 should be a 2.7K
1/4 watt resistor

C1 should be a .1uf
non-polarized
capacitor



The Software

Why fldigi (fast light digital)?

1. Free
2. Works with all modes (PSK, MT63, Olivia, etc.)
3. Easily configured (macro, looks, etc)
4. Constantly upgraded to match emcomm requirements
5. Designed to handle most/all message forms
6. It is what the rest of us use

Where to find it

www.w1hjk.com/download.html

fldigi-3.21	fldigi-3.21.33	Fldigi-Help	Maint'	Fldigi / Flarq:	fldigi-3.21.33.bin	fldigi-3.21.33 setup	fldigi-3.21.33 dmg
flarq-4.3		Flarq-Help			README		
		Fldigi pdf file					
		Zipped help					
		Beginners Guide pdf file					
pet libs	required for all fl__ applications						
	Legacy Source 3.20.11 to present						
				RigCat Xmls	xml archives	updated on 21 July 2011	
flwrap	flwrap-1.3.1	Flwrap-Help	Maint'	Flwrap:	flwrap-1.3.1.bin	flwrap-1.3.1 setup	flwrap-1.3.1 dmg
flmsg	flmsg-1.1.10	Flmsg-Help	Maint'	Flmsg:	flmsg-1.1.10.bin	flmsg-1.1.10 setup	flmsg-1.1.10 dmg
flwkey	flwkey-1.0.0	Flwkey-Help	Initial	Flwkey:	flwkey-1.0.0.bin	flwkey-1.0.0 setup	flwkey-1.0.0 dmg
flrig-1.2.4	flrig-1.2.4	flrig-help	Maint'	Frig:	flrig-1.2.4.bin	flrig-1.2.4 setup	flrig-1.2.4 dmg
				Supported rigs			

Installing The Software

1. Right click on each of the 3 programs and save to the desktop
2. From the desktop, run each setup program

Takes 5 minutes total

Break for software installation

The fldigi screen

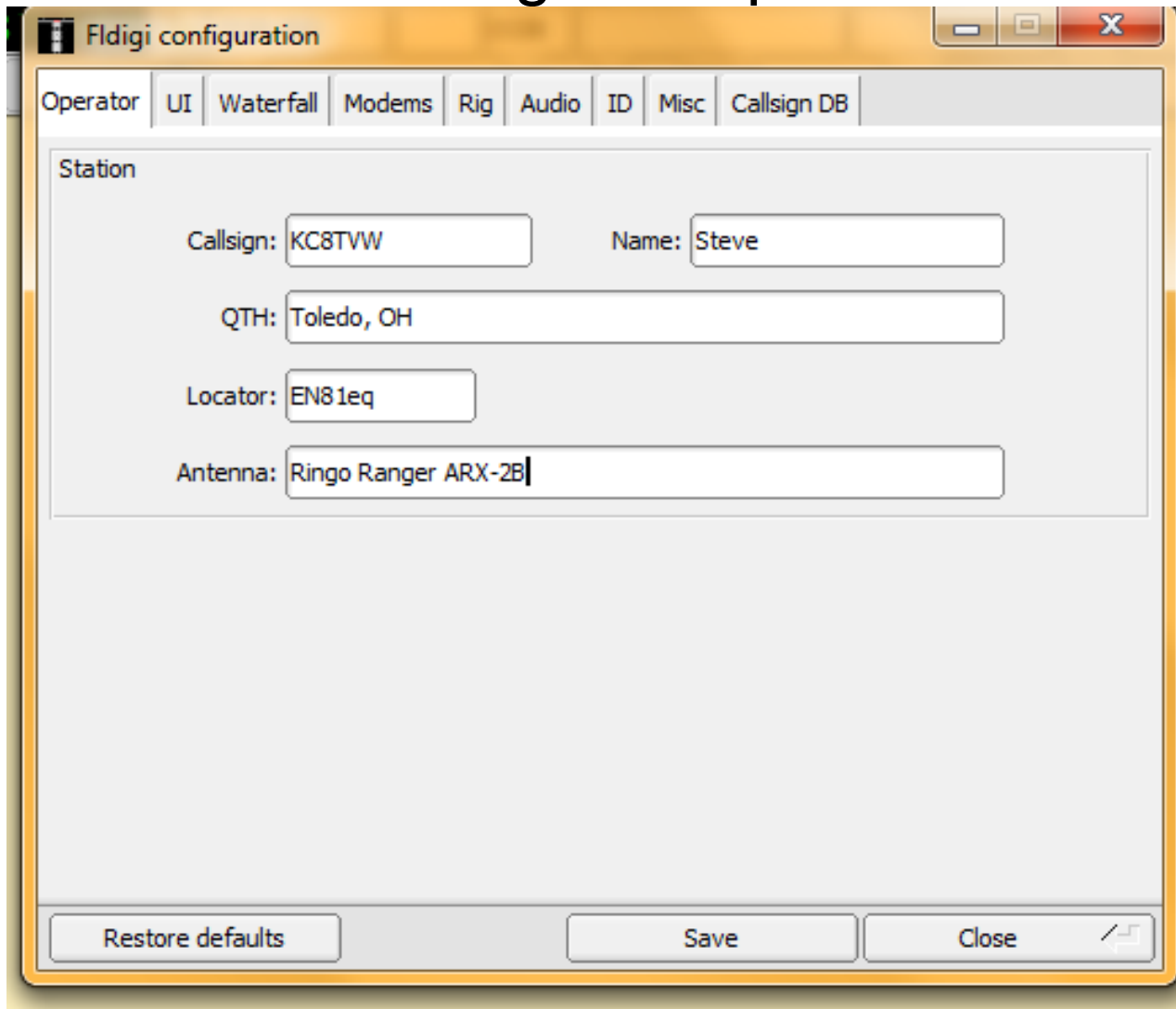
The screenshot shows the fldigi software interface. At the top is a menu bar with 'File', 'Op Mode', 'Configure', 'View', 'Logbook', and 'Help'. Below the menu bar is a control panel with fields for 'Enter Xcvr Freq' (7037.000), 'QSO Freq' (7038.900), 'On', 'Off' (0336), 'Call', 'Name', 'In', 'Out', and 'Notes'. There are also dropdown menus for 'USB' and 'QTH', and buttons for 'St', 'Pr', 'Cnty', 'Loc', and 'Az'. The main area is divided into three horizontal sections: a large purple 'Receive Text Area', a light green 'Transmit Text Area', and a 'Macros' section. The 'Macros' section contains buttons for 'C Ans', 'C rpt', 'C Rep', 'C Incr', 'C Decr', 'Log QSO', 'CW-CQ', 'Brag', 'CQ +', 'CQ-ID', 'CQ', 'ANS', 'QSO', 'KN', 'SK', 'Me', 'QTH', 'Tx', and 'Rx'. A red arrow points to the 'CQ +' button. Below the macros is a frequency scale from 500 to 6000 kHz, with a 'Waterfall' display area. At the bottom is a control panel with buttons for 'WF', '-20', '70', 'x1', 'NORM', '1900', 'QSY', 'Store', 'Lk', 'Rv', 'T/R', 'AFC', and 'SQL'. The Windows taskbar is visible at the very bottom, showing the time as 10:36 PM on 12/23/2011.

Setting up the software

The screenshot shows the main interface of a ham radio software application. At the top, there is a menu bar with 'File', 'Op Mode', 'Configure', 'View', 'Logbook', and 'Help'. Below the menu bar, there are several input fields: 'Enter Xcvr Freq' (displaying 7037.000), 'QSO Freq' (7038.900), 'On', 'Off', 'Call' (0317), 'Name', 'In', 'Out', and 'Notes'. Below these are fields for 'USB', 'QTH', 'St', 'Pr', 'Cnty', 'Loc', and 'Az'. A red arrow points from the 'Configure' menu item to a small icon in the 'Enter Xcvr Freq' field. Below the main interface area, there is a frequency scale from 500 to 6000 kHz, with various modes like CQ, ANS, QSO, KV, SK, Me, QTH, Brag, Tx, and Rx. At the bottom, there is a taskbar with various application icons and a system tray showing the time as 10:17 PM on 12/23/2011.

Configure>Operator

Configure>Operator

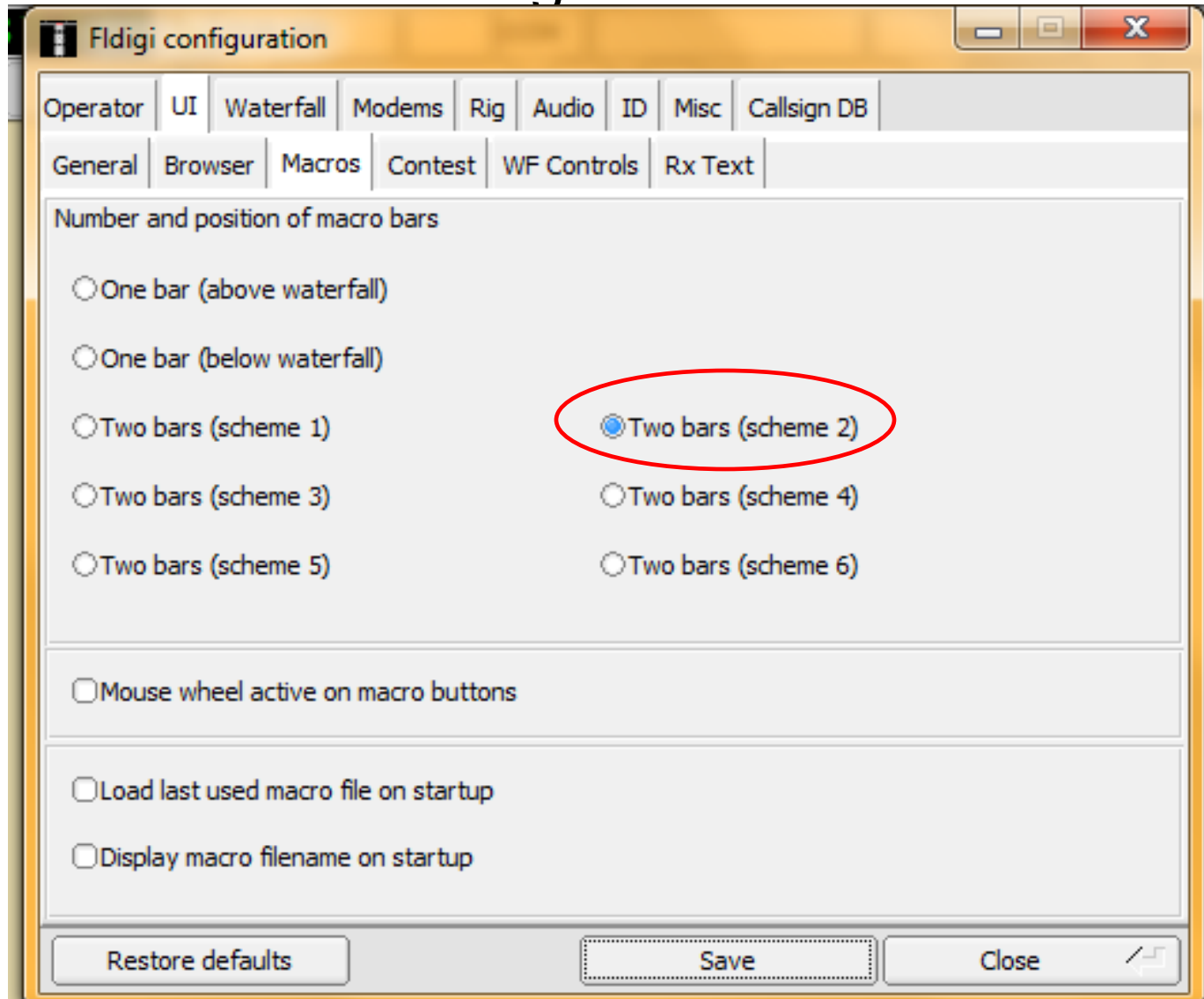


The image shows a screenshot of the Fldigi configuration window, specifically the 'Operator' tab. The window title is 'Fldigi configuration'. The 'Operator' tab is selected, and the 'Station' section is visible. The following fields are filled:

Field	Value
Callsign	KC8TVW
Name	Steve
QTH	Toledo, OH
Locator	EN81eq
Antenna	Ringo Ranger ARX-2B

At the bottom of the window, there are three buttons: 'Restore defaults', 'Save', and 'Close'.

Configure>UI>Macros



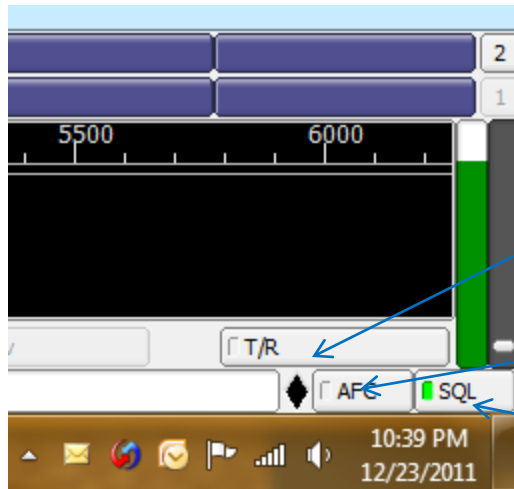
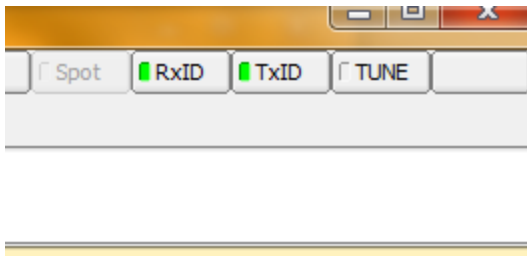
Save then Close

The fldigi screen

RxID will change modes if sending station has TxID turned on

TxID will transmit mode being used

Tune will send a “homing” signal until turned off



Receive Audio Level



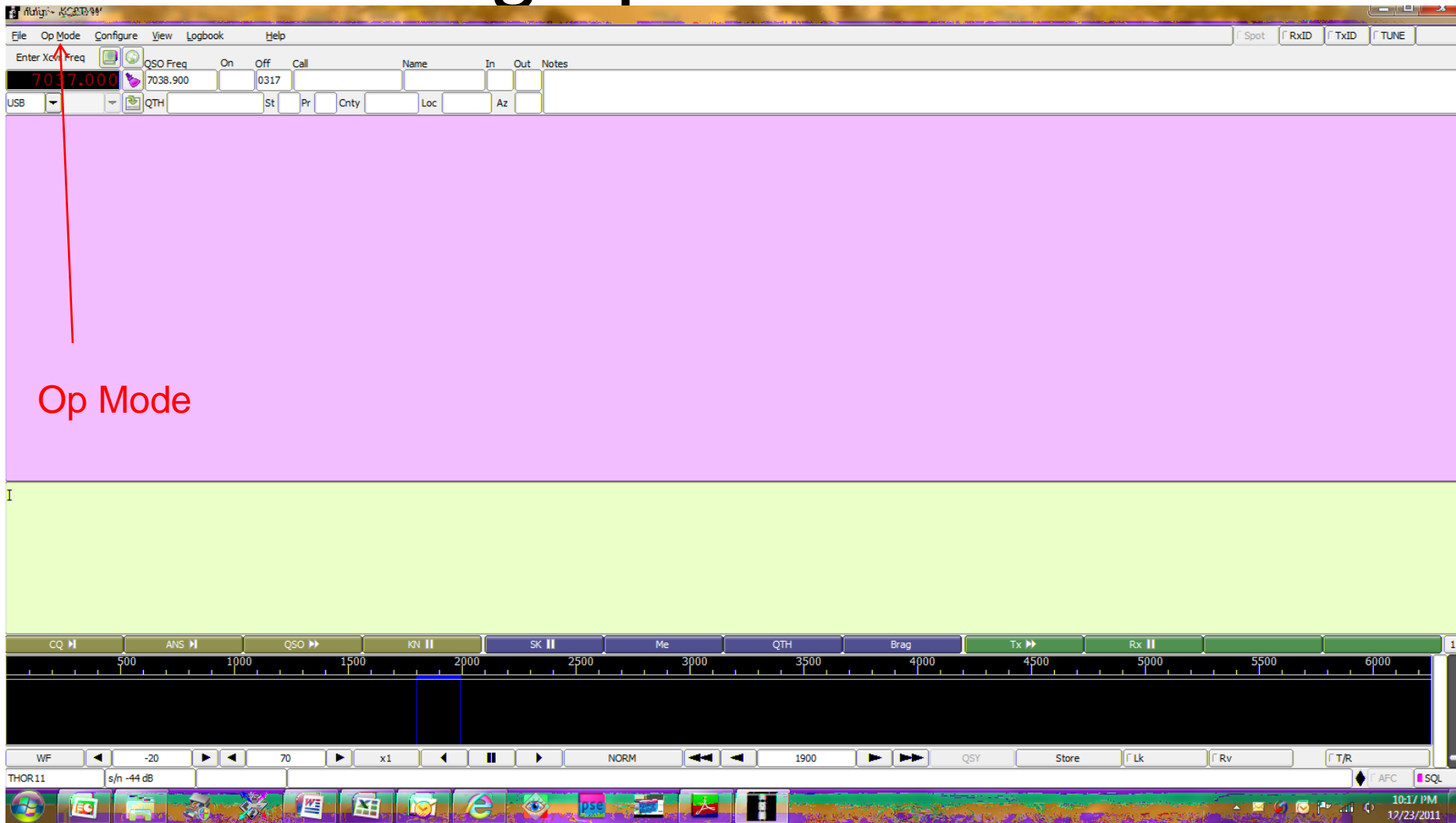
Black>Green>Yellow>Red

Good>----->Too High

AFC – Leave off

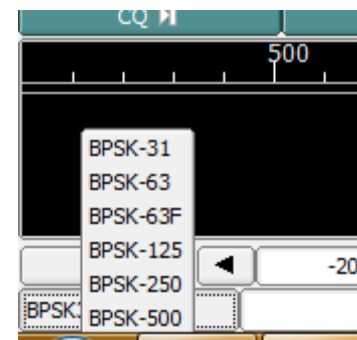
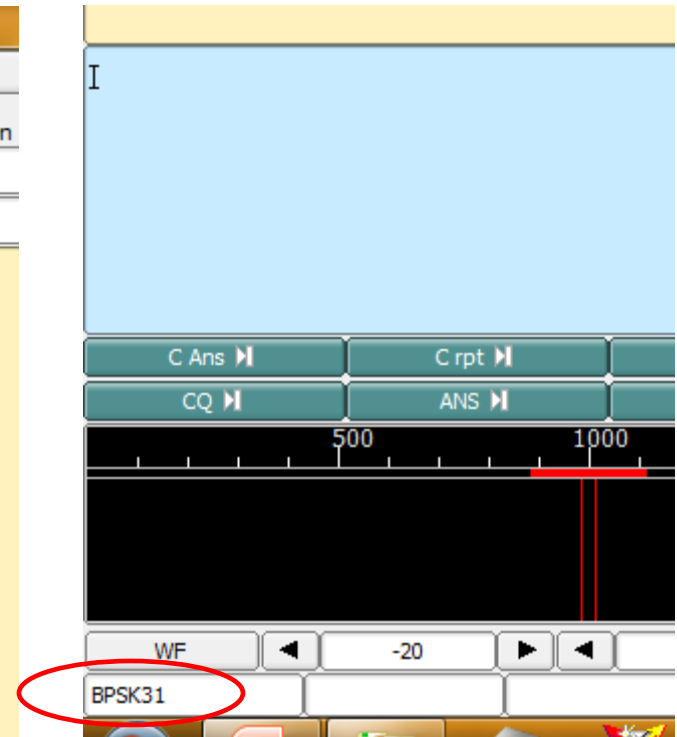
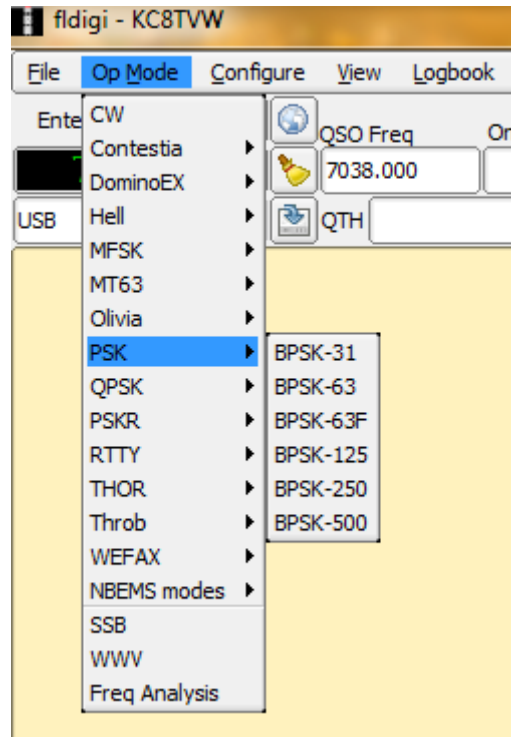
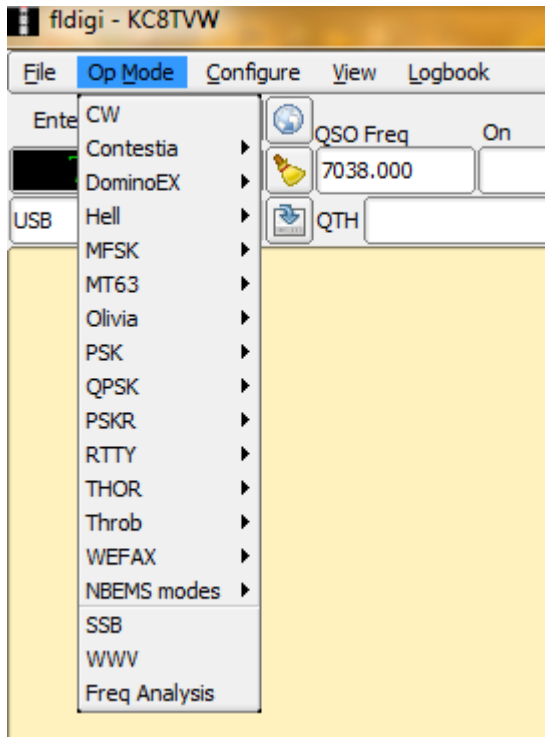
SQL – Squelch
If on, adjust vertical slider

Setting up the software

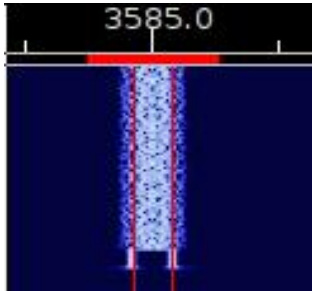


Op Mode

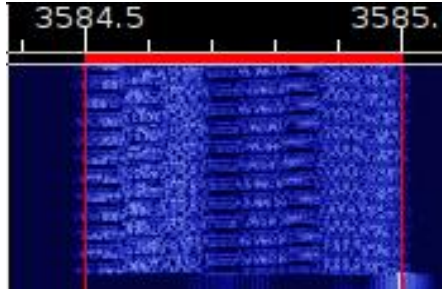
Modes



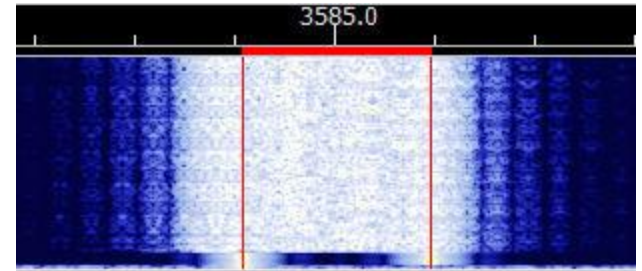
Digital Modes



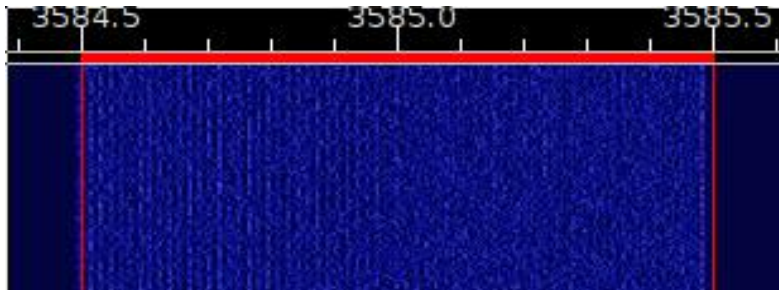
BPSK31



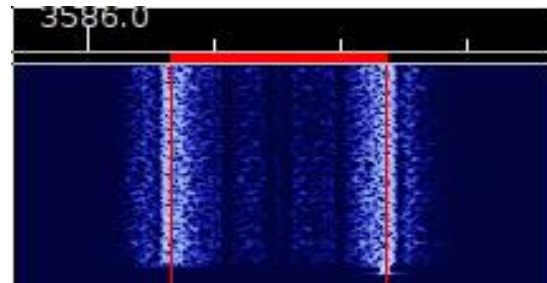
Olivia 8-500



Contesia 4-250



MT63-1000



RTTY

Where to find PSK31

2 Meter Band FM: 145.55

2 Meter Band SSB: 144.144

6 Meter Band: 50.125

10 Meter Band: 28.110 - 28.125 Mhz

12 Meter Band: 24.920 - 24.930 Mhz

15 Meter Band: 21.060 - 21.080 Mhz

17 Meter Band: 18.100 - 18.110 Mhz

20 Meter Band: 14.060 - 14.080 Mhz

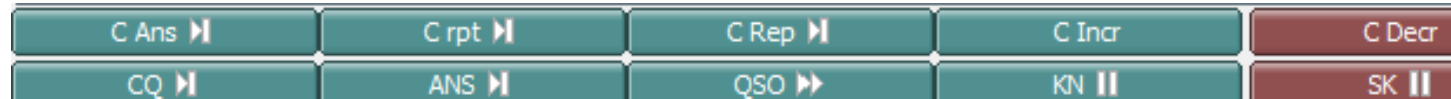
30 Meter Band: 10.130 - 10.145 Mhz

40 Meter Band: 7.060 - 7.080 Mhz

80 Meter Band: 3.620 - 3.640 Mhz

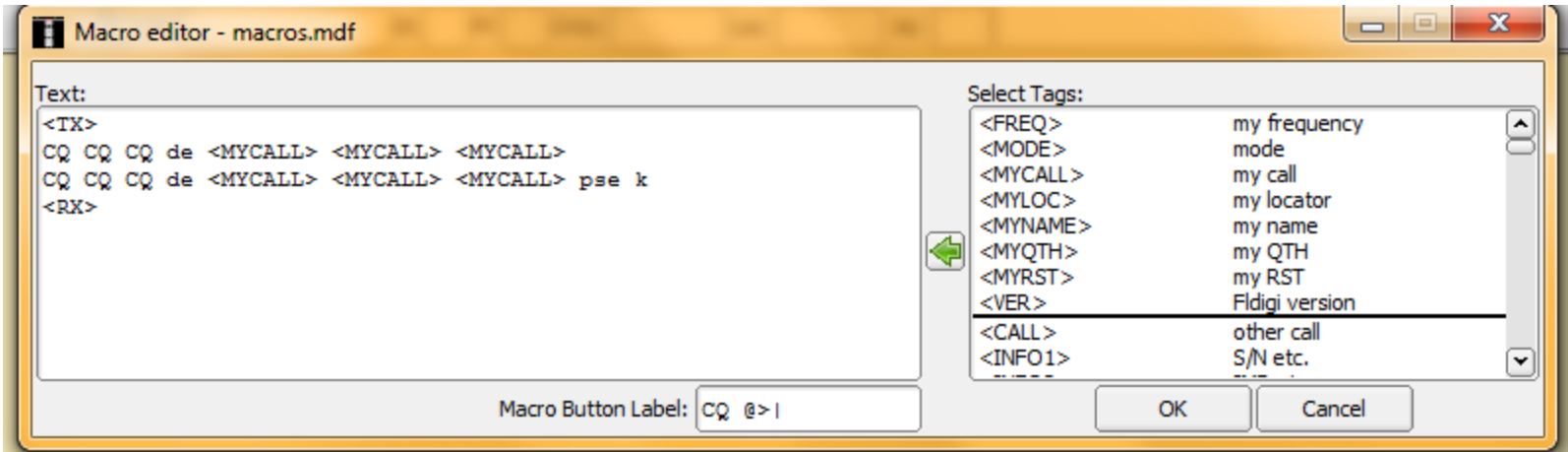
USB

Understanding Macro Keys



Left click will run the macro

Right click will allow editing of the macro



Anything between <> will run the function

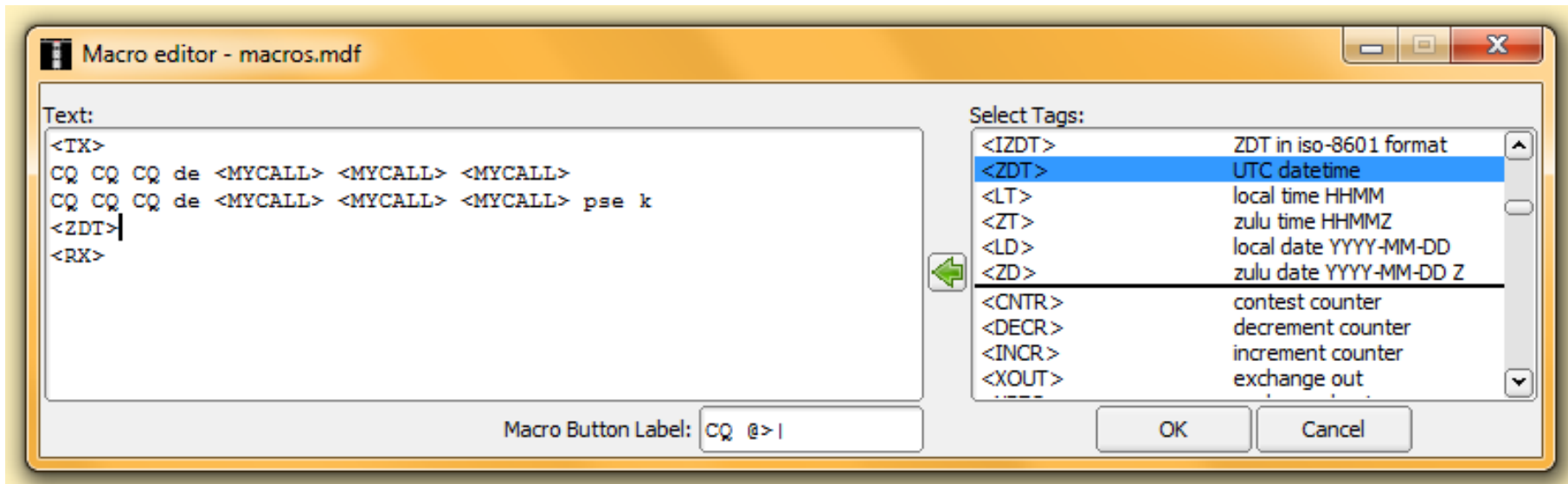
Anything not between <> will simply print/transmit

Understanding Macro Keys

To move a function from the right box to the macro

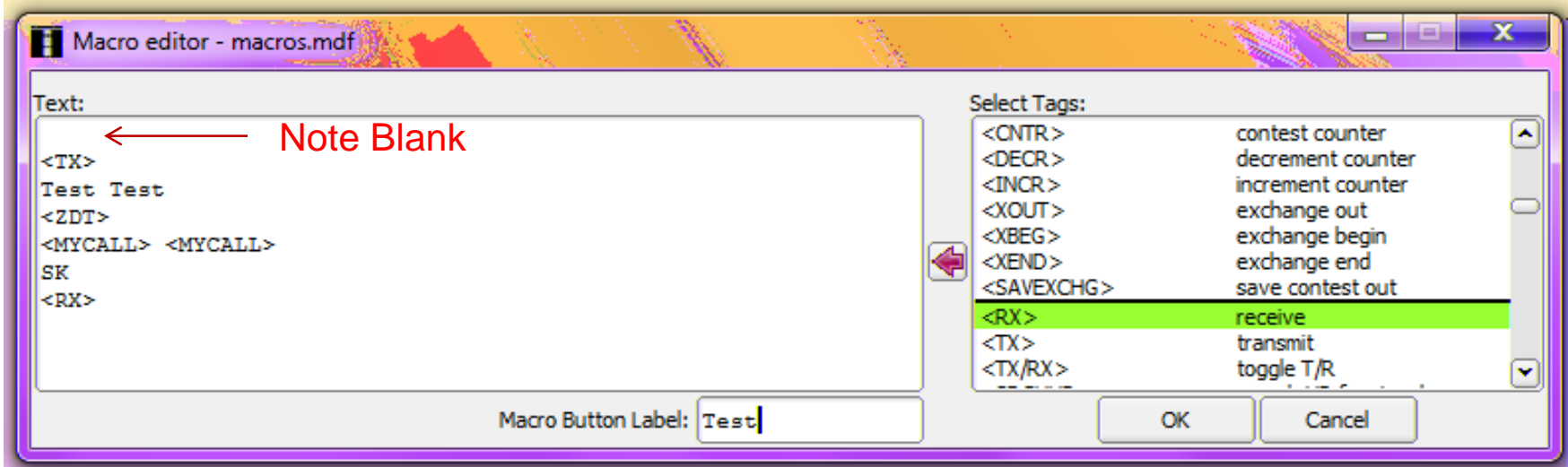
Click on the function

Click on the green arrow

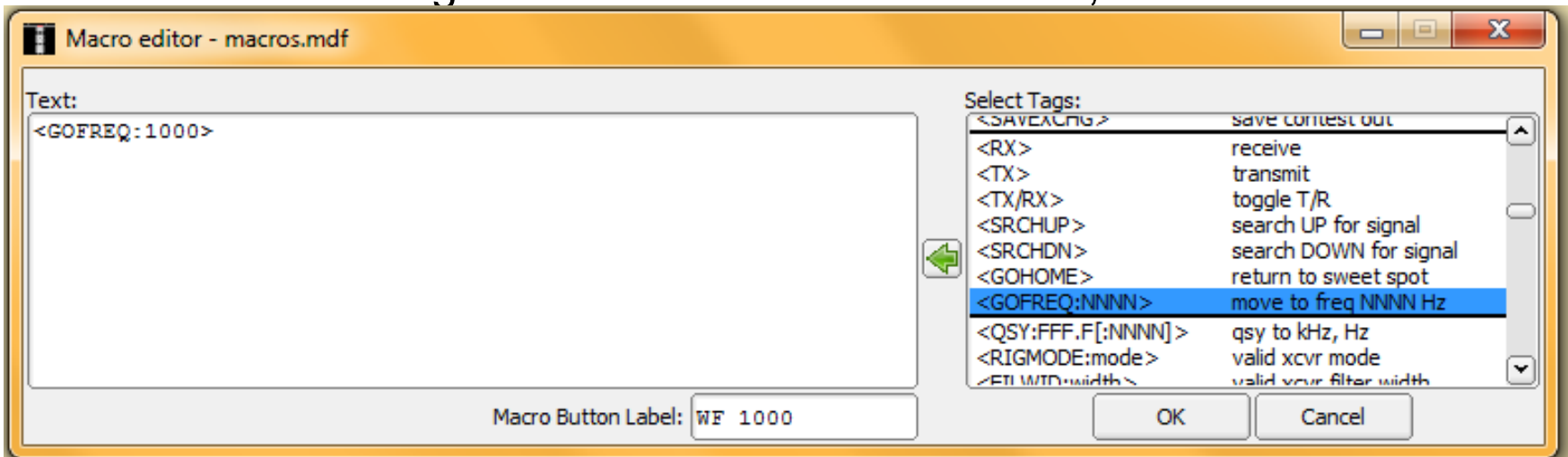


Understanding Macro Keys

Create the following macro in the row 1 of macros, number 12 (last one)



Create the following macro in the row 1 of macros, number 11



QSO Screen Capture

fldigi - KC8TVW

File Op Mode Configure View Logbook Help Spot RxID TxID TUNE

Enter Xcvr Freq QSO Freq On Off Call Name In Out Notes

147270.000 147271.007 0014

FM QTH St Pr Cnty Loc Az

o U FT2000D running 40 watts
ANT is a W5GI Mystery antenna at 30+ feet
Antenna Tuner : Palstar AT1500CV
Interface : RigExpert Plus USB
Software : MixW 2.19 [Registered] + 4WINLog 8.05
Operator: 1953 Vintage, Licensed 1999
BTU John, KF5FEI DE VA3MJR KN

C Ans C rpt C Rep C Incr C Decr Log QSO CQ CQ + CQ-ID Macro txt

CQ X|R ANS CQ X|R QSO X| BTU |R My Turn T| Me/Qth | Brag | Clear Rx Hobbies BPSK31 MT631K SK |R

500 1000 1500 2000 2500

WF -19 70 x1 NORM 1007 QSY Store Lk Rv T/R

BPSK31 s/n 4 dB imd -14 dB AFC SQL

Screen From Actual QSO - BPSK31

Etcetera

- How much power do I need?
 - 10-20% of normal (25 watts is a lot)
- Are there nets available?
 - wpanbems
 - SATERN
 - Local
- 2 Meter Simplex
 - 146.40-146.58
 - 147.42-147.57

Let's Have Some Fun

Questions?