

# NBEMS



## Narrow Band Emergency Messaging Software

- ◆ What Is It?
  - ◆ Fldigi Family of Software
  - ◆ Modem Software for Digital Modes
  - ◆ Add-on Software Multiply Applications
  - ◆ Extremely Useful Functionality

# NBEMS



## Introduction

- ◆ Fldigi Family of Software (W1HKJ)
- ◆ Soundcard Modem to Radio Software
- ◆ Resembles “Digipan” in Some Ways
- ◆ Useful for More Than Emergencies
- ◆ May Be the Missing Software Tool
- ◆ Comprehensive but Intuitive



# NBEMS



## Some Definitions

- ◆ NBEMS =  
Narrow Band Emergency Messaging Software
- ◆ FLdigi =  
Fast Light Digital Modem Application

# NBEMS



## Tonight's Program

- ◆ An Introduction to NBEMS
- ◆ We Have a Time Limit (Fldigi Focus)
- ◆ Reserve Time for a Demo
- ◆ Another Program Possible (Part 2)
- ◆ We Can Have a Class
- ◆ You Can Even Build Some Hardware



# FLdigi



## FLdigi Parent Software (Engine)

- ◆ Multimode Sound Card Modem SW
- ◆ Allows Dozens of Digital Modes
- ◆ Ten Families - Many Bandwidth Options
- ◆ Supports Keyboard & File Exchanges
- ◆ Many Nice Features
- ◆ We Will Look at This Today

# FLdigi

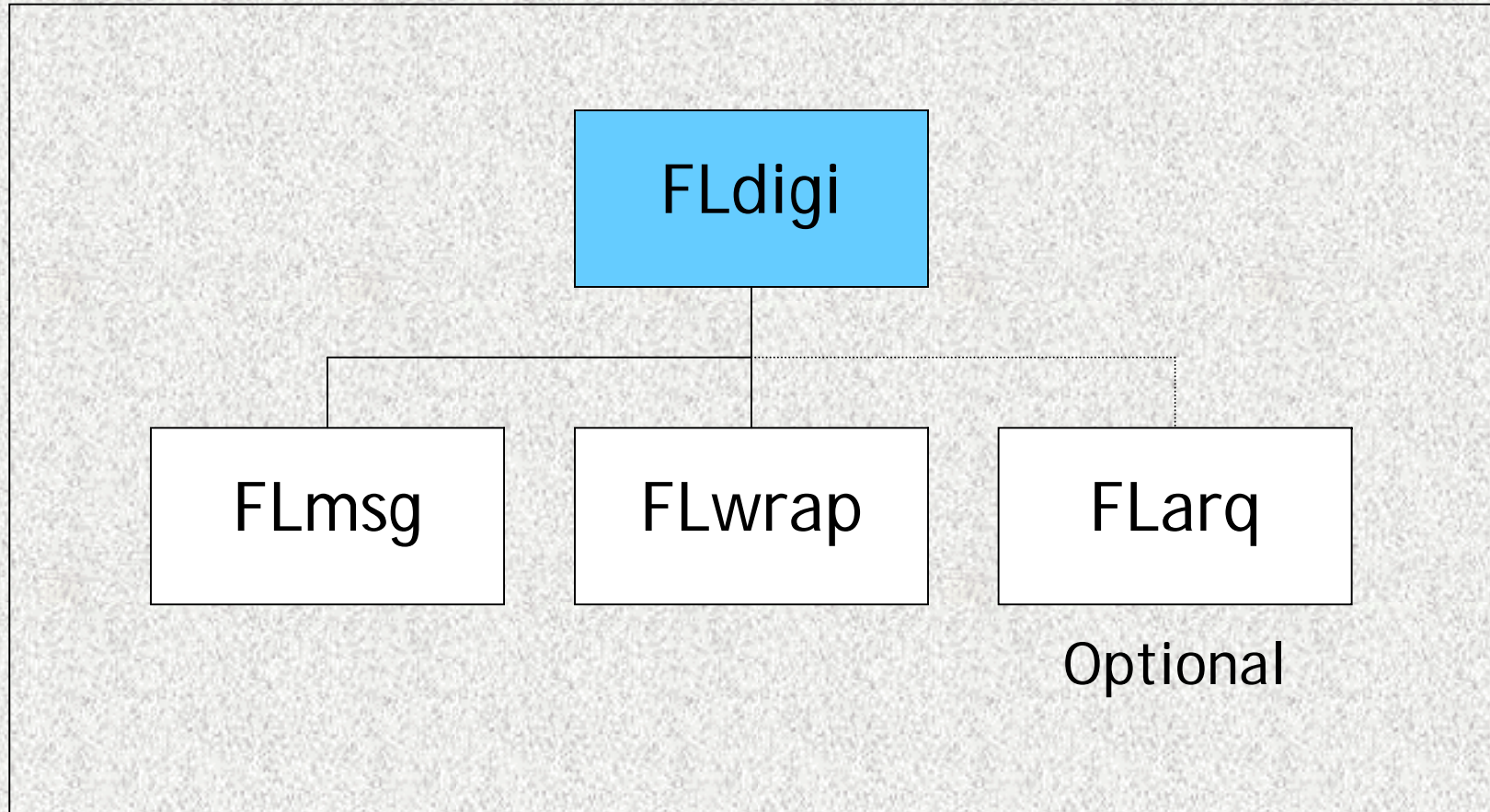


## FLdigi Parent Software Control

- ◆ Formal Message Capabilities
- ◆ Combined With Flmsg & Flwrap
- ◆ ARRL Radiogram & ICS Forms
- ◆ Saves Copies of All Messages
- ◆ Allows Printed Distribution or Email



# Software Interaction



# FLdigi



## FLdigi Parent Software Features

- ◆ Many Modes, Some Very Complex (OFDM)
- ◆ Automatic Detection of Modes
- ◆ Auto Call Sign Recognition
- ◆ Dozens of Macros Possible (Presets)
- ◆ AFC of Receive Signal (Optional)
- ◆ Automated Look-up QRZ Data



# FLdigi



## FLdigi parent software alone

- ◆ This Software Alone Is Exciting
- ◆ Very Useful for All Amateur Radio
- ◆ Chat, DX, Contesting, Nets
- ◆ Automatic Logging Features
- ◆ Callsign ID Feature
- ◆ Automated QSO Scripts (Macros)

# FLdigi

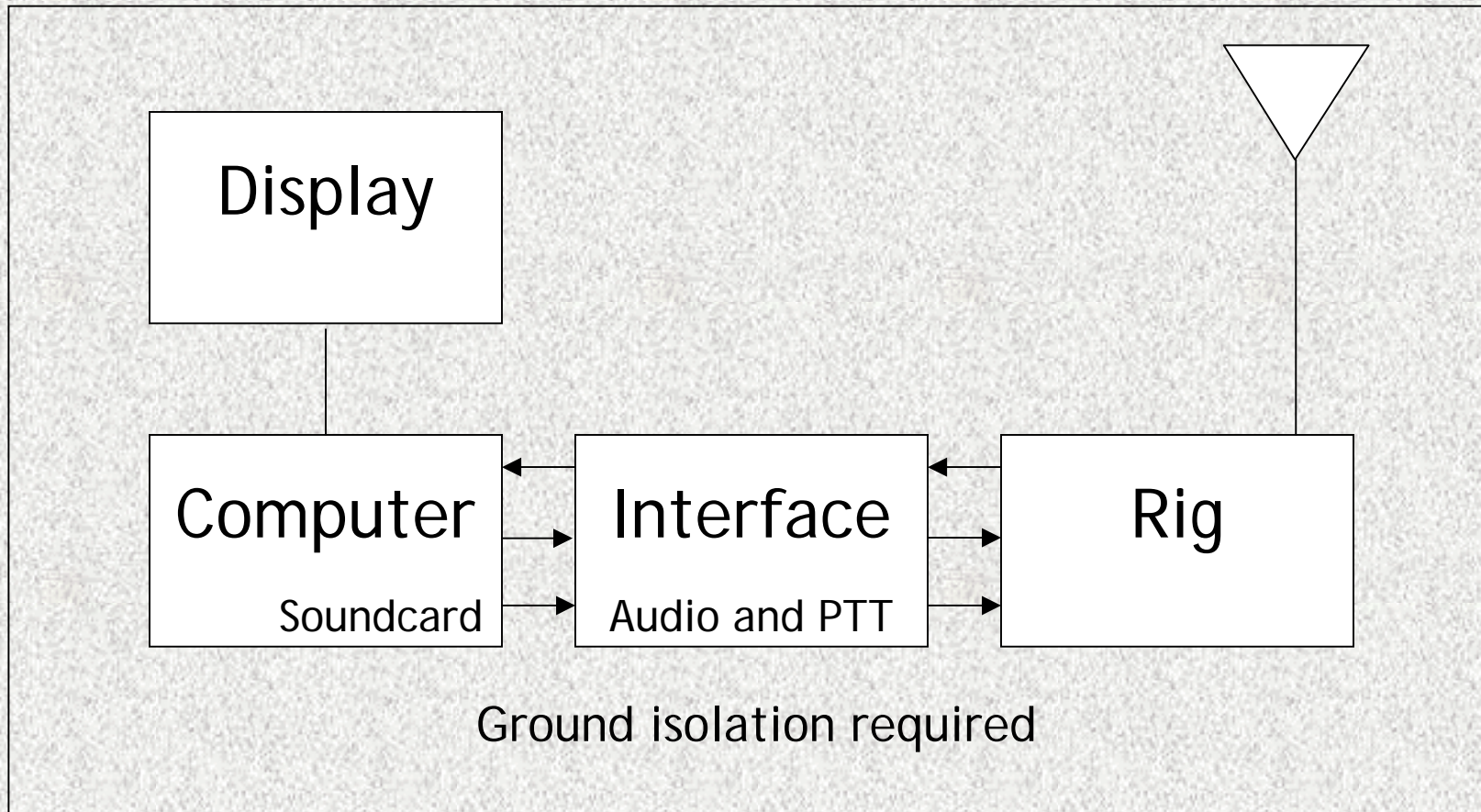


## FLdigi - What's Needed?

- ◆ A Transceiver HF, VHF, SSB, FM
- ◆ Computer With Sound Card
- ◆ Interface
- ◆ Cables
- ◆ Free Software (See References)
- ◆ External Soundcard Is Optional



# Basic Set-up



# FLdigi



## FLdigi Screen

- ◆ Waterfall Display
- ◆ Receive Window
- ◆ Transmit Window
- ◆ Menus and Buttons
- ◆ Other Status Indicators



# FLdigi Screen Tour

The screenshot shows the FLdigi software interface. At the top is a menu bar with options: File, Op Mode, Configure, View, Help. To the right of the menu bar are checkboxes for Spot, RxID, TxID, and TUNE. Below the menu bar is a section for RigCAT - IC-7000. The main display area is divided into several sections: a QSO Freq display showing 3582.500, a QSO table with columns for QSO Freq, On, Off, Call, Name, In, Out, and Notes; a QTH form with fields for QTH, St, Pr, Cnty, Loc, and Az; a call log table with columns for CQ, ANS, QSO, KN, SK, Me/Qth, Brag, PSK31, Tx, Rx, Olivia, and MT63; a frequency display showing 3583.0, 3583.5, 3584.0, 3584.5, and 3585.0; a waterfall plot showing a signal at 3584.5; and a control panel with buttons for WF, -20, 70, x1, NORM, 1000, QSY, Store, Lk, Rv, T/R, OLIVIA 8/500, AFC, and SQL.

QSO Freq	On	Off	Call	Name	In	Out	Notes
3583.500		0158					

CQ	ANS	QSO	KN	SK	Me/Qth	Brag	PSK31	Tx	Rx	Olivia	MT63
											1

# FLdigi



## FLdigi Digital Operation

- ◆ Most Digital Modes Use USB (Optional)
- ◆ Works Well on SSB, FM
- ◆ Audio Spectrum Is Displayed
- ◆ Low Power Works Best
- ◆ The Sound Card Acts As the Modem
- ◆ Improved S/N Performance (Filter)



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## Emergency Traffic With NBEMS

- ◆ Voice Messages Can Be Slow & Unreliable
- ◆ Long Lists of Data Are Difficult & Slow
- ◆ The World Is Used to the Email Format
- ◆ NBEMS Solves Many Problems
- ◆ Voice & Paper Notes Reduced
- ◆ Fills a Major Need for Emcomm
- ◆ Useful for Broadcasting (One to Many)

# NBEMS



## FLmsg Operation (With FLwrap)

- ◆ Completely Automates Traffic Forms
- ◆ ARRL, ICS, Blank and Custom Forms
- ◆ Assistance in Creating Content
- ◆ Stores All Outgoing & Incoming Messages
- ◆ Reformats Received Messages
- ◆ Converts to HTML Forms and Prints
- ◆ Checksum Created and Errors Checked



# NBEMS



## FLarq Operation

- ◆ Automatic Repeat Request (ARQ)
- ◆ Highest Level of Error Correction
- ◆ Slow but Truly Error Free Messaging
- ◆ Breaks Messages Into Blocks
- ◆ Checks Each Block Before Proceeding
- ◆ Final Message Is Reconstructed
- ◆ Only Point to Point - No Broadcast

# NBEMS



## Demo and Wrap-up

- ◆ Q & A
- ◆ References (Take Away)
- ◆ What Do We Want to Do?
- ◆ More Show and Tell?
- ◆ Nice Kit Building Project (Interface)
- ◆ Start a Net?



# NBEMS



A personal Note to readers:

I believe that this software system is a real opportunity for the advancement in digital radio for the amateur radio community. It may very well be the missing link to making digital radio popular and easy to implement using our existing radio equipment. Contact me at [ks0j@arrl.org](mailto:ks0j@arrl.org) for comments or questions.

Skip Jackson - KSØJ

## Other Software Titles

- FLdigi / FLarq - digital modem / ARQ file transfer
- FLwrap - file encapsulation / compression
- FLmsg - ICS213, ARRL Radiogram manager, replaces fLics
- FLrig - rig control program, cooperates with fLdigi
- FLwkey - modem program for the K1EL Winkeyer series -
- FLlog - logbook server for use with fldigi-3.21.12
- FLnet - net control manager



## LINKS

- Original Information and Source: <http://www.w1hkj.com/>
- Home page for Western PA ARES: <http://www.wpanbems.org/>
- NBEMS Presentation: (Narrow Band Emergency Messaging Software)  
[http://ns81.webmasters.com/\\*w3hzu.org/addon/w3hzu.com/pdfdocs/nbems\\_webinar.pdf](http://ns81.webmasters.com/*w3hzu.org/addon/w3hzu.com/pdfdocs/nbems_webinar.pdf)
- WPA Elmer Site: <http://www.pa-sitrep.com/NBEMS/index.html>
- Beginner's Guide: <http://www.w1hkj.com/beginners.html>
- Digital Modes: <http://www.w1hkj.com/FldigiHelp-3.20/Modes/index.htm>
- Search on ARRL.org
- Search on e.ham.net
- Search on QRZ.com
- Search on youtube.com - many videos
- Unified Microsystems Interface: <http://www.unifiedmicro.com/sci6.htm>