

Fun With Flags!!



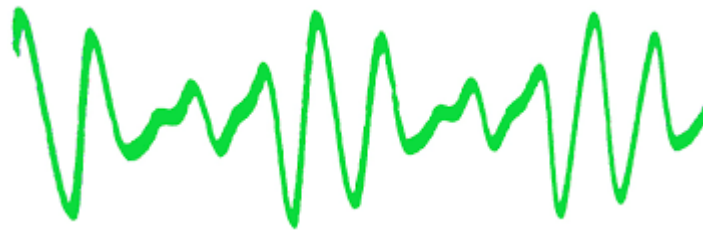
Fun With HT's !!

And Digital Modes

WinLink

Flmsg, Andflmsg

Fldigi



OBJECTIVE OF PRESENTATION

- To provide a brief introduction and overview of some of the digital programs used in digital commutations.
- WinLink, Fldigi, Flmsg, Andflmsg
- Demonstrate some of the ways that are used to provide radio interface
- Have fun with HT's..... Demo digital modes.
- Talk for 25 minutes. Play Radio and answer questions for 25 minutes.

Scenario

Barry (KD0RQU) and Dan (N0OLD) and their families are going camping!!

Location: In the Boonies National Park.

Barry is on site, Dan
Will be up tomorrow
as he had stuff to do.



It's Lunch Time!!



However

I Really Need To Talk With Dan!!

- No Phone.
- No Internet.
- No repeaters.
- I did bring my HF radio. (What a good HAM)
- Dan will not be lugging a HF rig around on his errands. But, he will have his cell phone.
- And I have WinLink!!

- With Winlink I'm able to contact a Winlink RMS station in Texas.
- The RMS station posts my e-mail to the WinLink server.
- Dan is at Walmart and Winlink delivers my e-mail.

BRING CAN OPENER!!

Disaster Averted

Meanwhile Back At Camp



HOUSTON WE HAVE A PROBLEM!!



What is Winlink?

In it's simplest terms:

“A World-Wide System for
Transferring Email
via Radio.”



I Got A Can Opener!!



Some of the Many Users:

Amateur Radio (Hams)



Emergency Communications

Local, State, National, International



Governments & Auxiliary Agencies

Regional, National, International

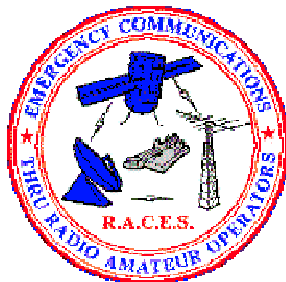


Maritime / Search & Rescue

Sea Going World Wide



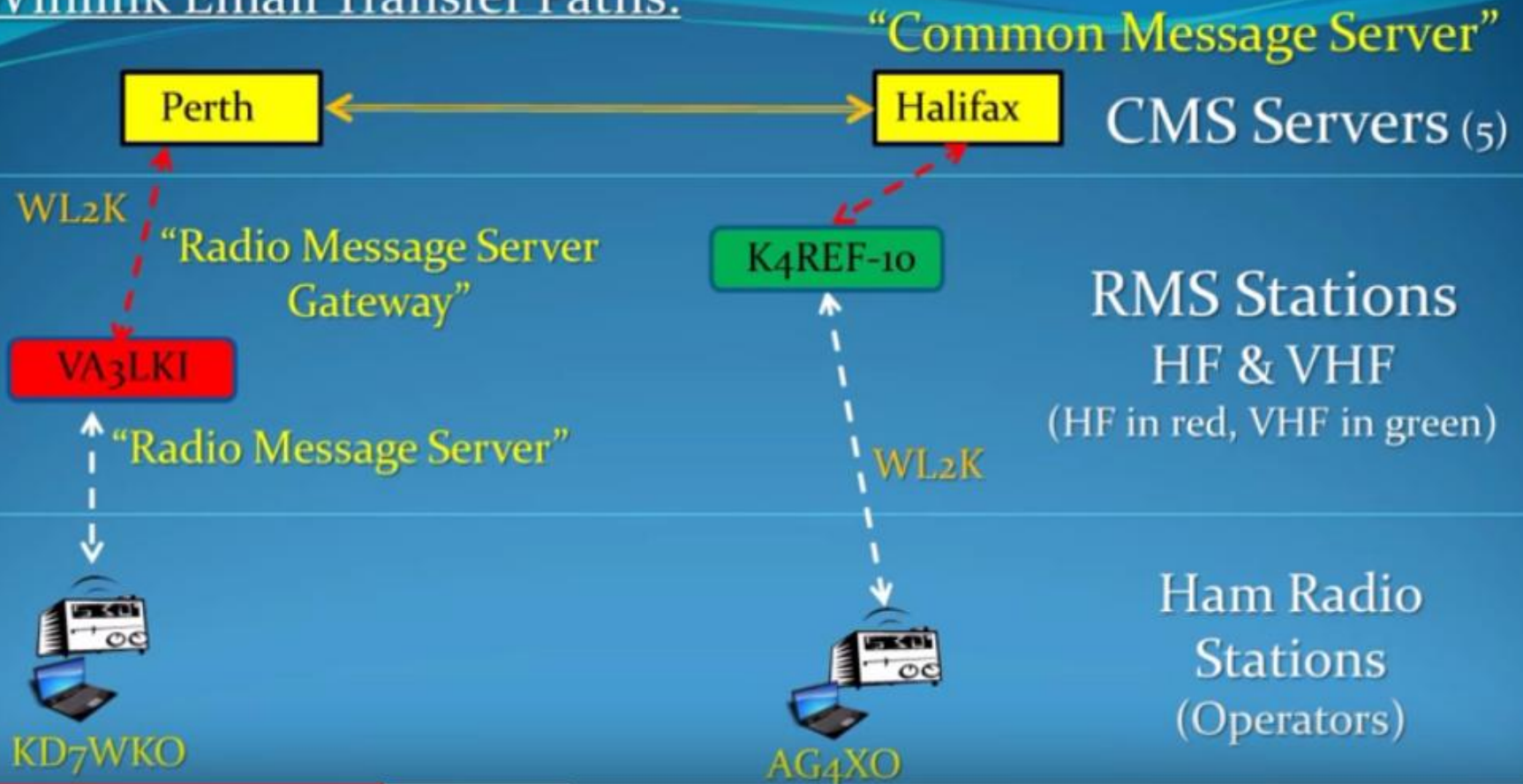
FEMA

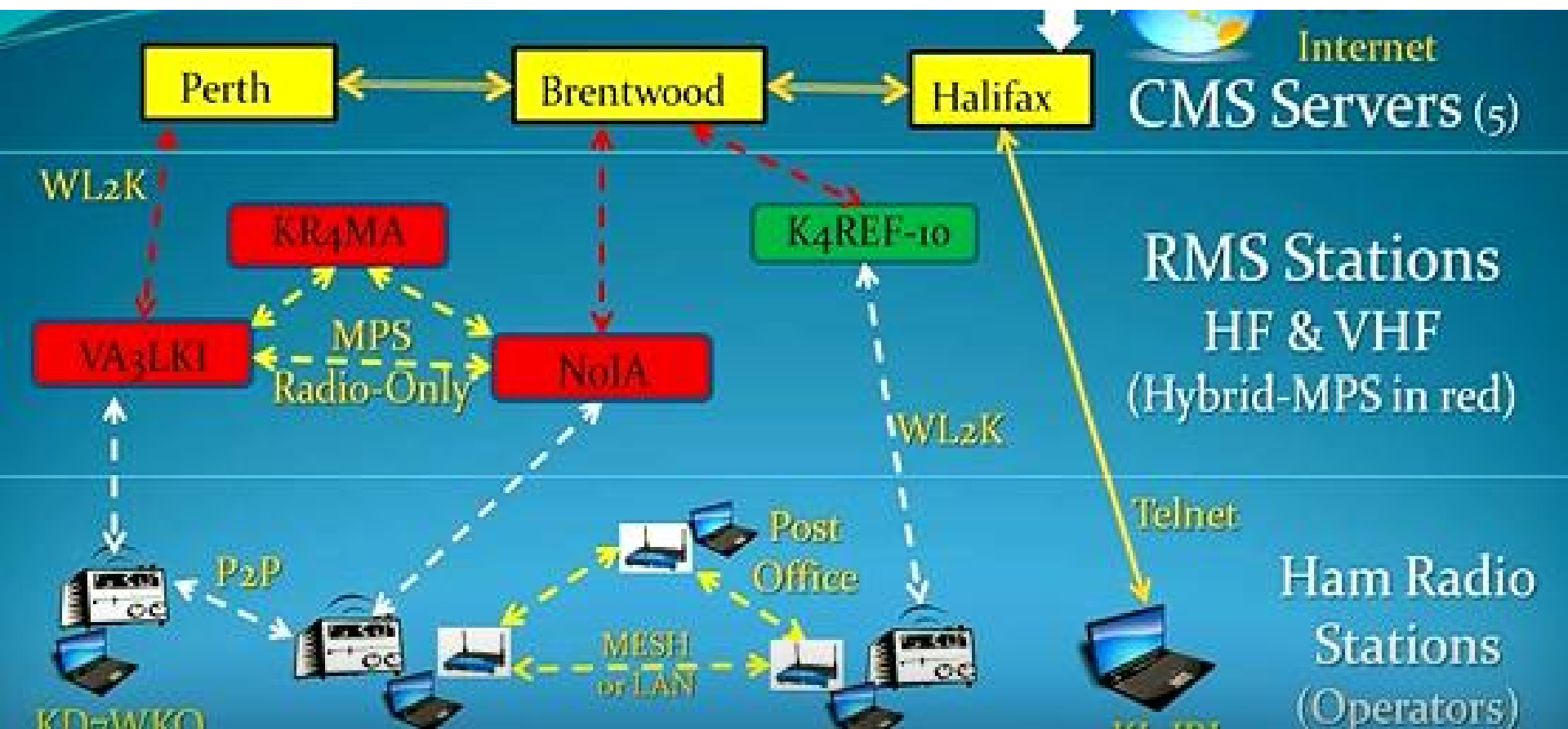


American Red Cross



Winlink Email Transfer Paths:





KD0RQU Settings Message Attachments Move To: Saved Items Delete Open Session: Winmor Winlink Logs Help



No active session.

System Folders	Date/Time	Message ID	Size	Source	Sender	Recipient	Subject
Inbox (0 unread)	2016/10/21 18:57	Z9K7J2BM8MB9	614	KD0RQU	KD0RQU	kd0rqu@comcas...	//WL2K For Winlink Letter
Read Items (0)							
Outbox (1)							
Sent Items (2)							
Saved Items (1)							
Deleted Items (1)							
Drafts (0)							
Personal Folders							

Message ID: Z9K7J2BM8MB9
 Date: 2016/10/21 18:57
 From: KD0RQU
 To: kd0rqu@comcast.net
 Source: KD0RQU
 Subject: //WL2K For Winlink Letter

Hi Barry,

I'm back home now, trying to get caught up on a ton of stuff. Do you think you could provide us some specific recommendations, perhaps a step-by-step, on getting started with the email utilities you're exploring? Hardware & software? That would be extremely helpful if it is possible. Even just some internet pointers to go read up on things would be useful.

Thanks much, and I'll try to get spun up on this as soon as I can. I've suddenly got a bunch of irons in the fire again upon return, including two prospective employment opportunities I've got to decide whether or not to pursue. Interesting time.

Stu

Global Folders
Contacts
KOCHP
KOPOP
KD0RQU
KDOYBK
KDOYBI
KONR
NOAMP
NOCDA
NOOLD
NOSLO
WOMJH
WOSTU
WTLM

WinLink Modes

- **Telnet WinLink**
- **Packet WinLink**
- **Pactor WinLink**
- **Robust Packet WinLink**
- **Winmor WinLink**
- **Iridium GO WinLink**
-
- **Packet P2P**
- **Pactor P2P**
- **Robust Packet P2P**
- **Winmor P2P**
- **Telnet P2P**
-
- **Pactor Radio-Only**
- **Winmor Radio Only**
- **Telnet Radio-Only**
-
- **Telnet Post Office**

Exit Setup Switch to Peer-to-Peer Channel Selection Forecast Best chan. Next chan. Hide TNC **Start** Stop Abort

KD6OAT Center Freq. (kHz): 7097.000 Dial Freq. (kHz): 7095.500 Bearing: 288 Quality: 47

Favorites: [dropdown] Select Add to favorites Remove from favorites

Channel Busy In: 0/0 Out: 0/0 BPM: 0/0 Disconnected

*** Using Yaesu FT-857, COM4, 38400 baud
*** Ready

WINMOR Sound Card TNC Ver:1.5.10.0 Port:8500

Help Hide Send ID


Connection State
DISCONNECTED
TCP Capture OK

Transmit
0 Avg ACK Percentage 100
Xmt Frame: [input]


Receive
Rcv Level: [progress bar]
Remote Station Offset: -194.1 Hz
Rcv Frame: [input]

Busy Detector
Busy (W)
Squelch: 5 [up/down]

Waterfall Spectrum Disable



500 Waterfall 2KHz 2500



Constellation

HF Channel Selector



Exit Select Update Table Via Internet Update Table Via Radio Forecast SFI All RMS

Callsign	Frequency (kHz)	Mode	Grid Square	Hours	Group	Distance (km)	Bearing (Degrees)	Path Reliability Estimate	Path Quality Estimate
W5PDO	7102.500	1600	DM65VT	12-23	PUBLIC	386	199	89	58
K7DAV	7104.500	1600	DN40BX	00-23	PUBLIC	638	291	93	56
KD6OAT	7097.000	500	DN40BO	00-23	PUBLIC	627	288	93	56
K7DAV	7065.900	500	DN40BX	00-23	PUBLIC	638	291	93	55
KC7AX	7104.000	1600	DN55RT	00-23	PUBLIC	806	339	91	53
KE7XO	10144.000	1600	DM26JG	00-23	PUBLIC	968	254	78	48
N0MTH-10	14093.000	500	EM48UM	00-23	PUBLIC	1256	088	61	46
N9ACQ	14110.500	1600	EM45QV	00-23	PUBLIC	1296	101	67	46
W5SEG	14098.000	500	EL19AN	00-23	PUBLIC	1230	147	64	46
KB5HCD	14103.200	1600	EL29FU	00-23	PUBLIC	1330	138	65	45
N9LOH-5	14106.500	1600	EN52RS	11-04	PUBLIC	1421	068	65	45
N7MO	10147.700	1600	DN06LJ	00-23	PUBLIC	1414	310	65	44
K6SDR	14105.500	1600	CM87RX	00-23	PUBLIC	1545	271	59	44
K2RDX	14107.500	1600	CM97AH	00-23	PUBLIC	1510	268	59	44
K6ETA	14106.000	1600	CM88QF	14-02	PUBLIC	1548	272	59	44
W5WSR	14084.500	500	EL29GA	00-23	PUBLIC	1409	140	65	44
KE7XO	7103.000	1600	DM26JG	00-23	PUBLIC	968	254	63	43

Exit Setup Switch to Peer-to-Peer Session Channel Selection 1200 Baud **Start** Stop

Connection type: Direct ▾ KE0GB-10 Via ,

Connection script: ▾ Edit script Add script Remove script

Received: 116 Sent: 737 Time to next Autoconnect = Disabled

```

*** Starting to call KE0GB-10
*** Opening serial port COM3; 1200 baud; TNC-X
*** Connecting to KE0GB-10
*** Connected to KE0GB-10 at 2016/10/21 19:17:28
    
```

```

Trying wien.winlink.org
*** KD0RQU Connected to CMS
[WL2K-3.2-B2FWIHJM$]
:PQ: 17696929
Wien CMS via KE0GB >
:FW: KD0RQU
[RMS Express-1.4.2.0-B2FHM$]
:PR: 60644422
; KE0GB-10 DE KD0RQU (DM79OC)
FC EM Z9K7J2BM8MB9 799 576 0
F> 9D
    
```

```

FS Y
*** Sending Z9K7J2BM8MB9.
FF
*** Completed send of message Z9K7J2BM8MB9
*** Sent 1 message. Bytes: 614, Time: 00:18, bytes/minute: 1979
FQ
*** -- End of session at 2016/10/21 19:18:11 --
*** Messages sent: 1. Total bytes sent: 614, Time: 00:43, bytes/minute: 857
*** Messages Received: 0. Total bytes received: 0, Total session time: 00:43, bytes/minute: 0
*** Disconnecting
*** Disconnected at 2016/10/21 19:18:15

*** Disconnect reported.
    
```

Moving On!!

I got TP!!



Fldigi, Flmsg, Andflmsg



FLIDIGI

fldigi - KD0RQU

File Op Mode Configure View Logbook Help

Spot RxID TxID TUNE

144950.000

Frq 144950.230 On Off 0107 In Out

Call Op Az

USB 3000 Qth St Pr Loc

Loaded logbook: C:/Users/Mooman/fldigi.files/logs/logbook.adi
6 records in 0.00 seconds
oeLjaConb\$ e tv twvCo/^eg s3ttXtntn\$ie mnrt d h3m=ss3i Ns+t>ntue e nÄ?)Kop\$tk oa-taëtne\$pw1 tg ' wsY wK
tt?tkcttórme® wn w1sRY wioi wK aëtie nru S u e Bst3Ts+N cd nc ft7Nst h3ti hK +t»Ma\$ rtie n
k4Tnosqñni tsK at+

CQ

-0.2 Clear

CQ	REPLY	Him/Me	BTU	SPRING	Me	Station 1	US AIR FORC	T/R	Tx	Rx	TX	1
Test	Learing	Blank	CLOSE	Area 51	Blank	Station 2	PCS	CQ +	CQ-ID			2

500 1000 1500 2000 2500

WF -25 46 x1 NORM 230 QSY Store Lk Rv T/R

PSK250R -3.0 AFC SQL KPSQL

- **Fldigi** is one of the programs used by many for digital commutation. It's a work horse.
- It provides a user interface (Keyboard) and (Display) to input and receive data.
- **It's main purpose is it acts as a modem.**
- A better description in **technical terms** is, it's a **"Bevy"** of modems.
- Each digital mode is considered a **"Modem"** and Fldigi has a ton of them.
- Fldigi has some add on programs called: **Narrow Band Emergency Messaging Software (NBEMS)**
- We will be using one of those programs tonight.
- **Fmsg** and the Android Version **AndFmsg**

Digital Modes Supported [\[edit\]](#)

Mode Name ▾	Speeds Supported	◆ Custom Modes ◆
WEFAX	IOC576, IOC288 ^[8]	No
Throb / ThrobX ↗	1, 2, 4 / X1, X2, X4	No
THOR ↗	4, 5, 8, 11, 16, 22, 25x4, 50x1, 50x2 100	No
SYNOP	SYNOP	No
SITORB	SitorB	No
RTTY ↗	45.45/170, 50/170, 75/170, 75/850	Yes
QPSK	31, 63, 125, 250, 500	No
PSKR	125R, 250R, 500R, 1000R	No
PSK ↗	31, 63, 63F, 125, 250, 500, 1000	No
Olivia ↗	4/250, 8/250, 4/500, 8/500, 16/500, 8/1000, 16/1000, 32/1000, 64/2000	Yes
Navtex	Navtex	No
MT63 ↗	500S, 1000S, 2000S, 500L, 1000L, 2000L	No
Morse Code / CW ↗	5 - 50 words-per-minute	Yes
MFSK ↗	4, 8, 11, 16, 22, 31, 32, 64, 64L, 128, 128L	No
IFKP	0.5, 1.0, 2.0	No
Hellschreiber ↗	Feld Hell, Slow Hell, Feld Hell X5, Feld Hell X9, FSK Hell, FSK Hell-105, Hell 80	No
FSQ ↗	2, 3, 4.5, 6	No
DominoEX ↗	4, 5, 8, 11, 16, 22, 44, 88	No
Contestia ↗	4/125, 4/250, 8/250, 4/500, 8/500, 16/500, 8/1000, 16/1000, 32/1000, 64/1000	Yes
8PSK	125, 250, 500, 1000, 125FL, 250FL, 125F, 250F, 500F, 1000F, 1200F	No

What's a Modem??

- mo·dem
- 'mōdəm/
- *noun*
- noun: **modem**; plural noun: **modems**
- **1.**
- a combined device for modulation and demodulation, for example, between the digital data of a computer and the analog signal of a telephone line.
- **A modem can be software or hardware.**

TNC'S

When Packet Radio was getting underway in the late 1970s and early 1980s most people did not have very much computing power. Many hams wanted to operate packet with a Commodore 64, Vic 20, or CP/M computer that had a maximum of 64KB (yes, that KB, not MB or GB) of memory. There just wasn't much horsepower in those machines, but one thing that everyone had available was a terminal program. It was the lowest common denominator. So when designers developed TNC's in that era they designed them to work with anything that had a terminal emulator on it. As a result, they built nearly all of the intelligence in the TNC itself.

What is a TNC??

- A **terminal node controller (TNC)** is a device used by [amateur radio](#) operators to participate in [AX.25 packet radio networks](#). It is similar in function to the [Packet Assembler/Disassemblers](#) used on [X.25](#) networks, with the addition of a modem to convert baseband digital signals to audio tones.^[1]

- **Narrow Band Emergency Messaging Software (NBEMS)** is a collection of programs used with Fldigi.
- **Fmsg** is one of those programs.
- Fmsg is basically a collection of forms used by different agencies.



FEMA

FLMSG: 4.0.1

File Form Template Config AutoSend ARQ Help

Plaintext message file: TNCs.p2s

Title

To Date

Fm Time

Sub.

Message:

When Packet Radio was getting underway in the late 1970s and early 1980s most people did not have very much computing power. Many hams (including me) wanted to operate packet with a Commodore 64, Vic 20, or CP/M computer that had a maximum of 64KB (yes, that KB, not MB or GB) of memory. There just wasn't much horsepower in those machines, but one thing that everyone had available was a terminal program. It was the lowest common denominator. So when designers developed TNC's in that era they designed them to work with anything that had a terminal emulator on it. As a result, they built nearly all of the intelligence in the TNC itself.

Comp *

ARQ NOT CONNECTED

ARQ NOT CONNECTED

AndFmsg-MT63_2000_LG - Listening



12:39

Welcome to AndFmsg Version 1.2.0, 2015-09-10

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

Swipe across the screen to navigate to the other screens and use the device Menu button to get access to the preferences and additional functions.

Visit www.w1hkj.com for more details

73, The Fldigi Team

Receiving New Message
Receiving File TNCs.p2s
File integrity check: Checksum OK
Saved File: TNCs.p2s

SEND
TEXT

AndFlmsg-MT63_2000_LG - Listening

CPU



Rx RslID

Tx RslID

:tt:15 General Message

:to:6 KD0YBI

:fm:6 KD0RQU

:dt:8 23/01/17

:tm:6 14:24Z

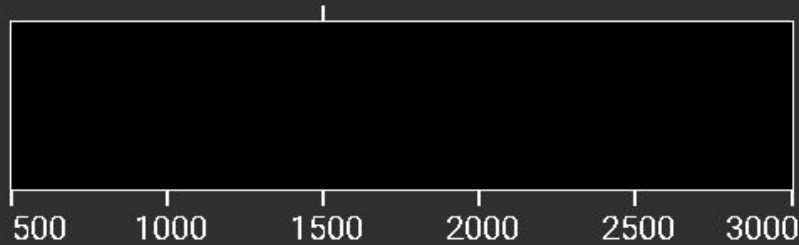
:sb:5 TNC's

:mg:642 When Packet Radio was getting underway in the late 1970s and early 1980s most people did not have very much computing power. Many hams (including me) wanted to operate packet with a Commodore 64, Vic 20, or CP/M computer that had a maximum of 64KB (yes, that KB, not MB or GB) of memory. There just wasn't much horsepower in those machines, but one thing that everyone had available was a terminal program. It was the lowest common denominator. So when designers developed TNC's in that era they designed them to work with anything that had a terminal emulator on it. As a result, they built nearly all of the intelligence in the TNC itself.

[WRAP:chksum C8DB][WRAP:end]

... end

^r



S2N



NEXT MODE	SQLCH UP	MODEM ON/OFF	STOP TX
PREV MODE	SQLCH DOWN	TUNE	W.FALL ON/OFF

AndFmsg-MT63_2000_LG - Listening



blankform.html

csvform.html

hics203.html

hics206.html

hics213.html

hics214.html

iaru.html

ics203.html

ics205.html

ics205a.html

ics206.html

ics213.html

INBOX

COMPOSE

TEMPLATES

DRAFTS

OUTBOX

SENT

LOGS

SEND ALL MESSAGES

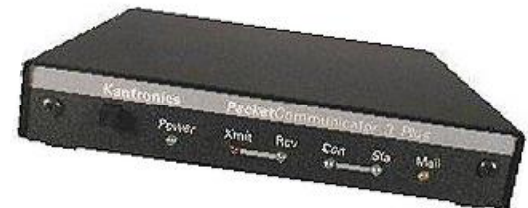
Let's Play Radio!!

- Send a VHF E-mail by Winlink
- Send Data between Fldigi and AndFlmsg using forms.
- To play digital we will need some type of computer, a radio and a radio interface.

Example



Other Radio Interfaces



WinLink

- Let's send a e-mail.
- Be sure to check out Website:
- <http://www.winlink.org/>
- Tons of Info

Fldigi, Flmsg, Andflmsg

- Will be using
- Acoustical Coupling
- Interface Cable.
- Flmsg.
- Andflmsg

<http://www.w1hkj.com/vk2eta/AndFlmsg-1.2.0.apk>

- **Before we start we need to consider:**



Choose Your 2m Frequency Wisely

Written for amateur radio operation in Colorado
 Bob Witte, KØNR

2m Band Plan

As approved by the ARRL VHF-UHF Advisory Committee,
 simplified by KØNR to reflect usage in Colorado.

The Colorado Council of Amateur Radio Clubs (CCARC) publishes the official *2 Meter Frequency Use Plan* for the 2 Meter band in Colorado.

144,000-144,100	CW
144,100-144,275	Single-sideband (SSB Calling Frequency = 144,200)
144,275-144,300	Propagation Beacons
144,300-144,500	OSCAR (satellite) APRS Frequency = 144,390 MHz
144,500-144,900	FM Repeater Inputs
144,900-145,100	Packet Radio
145,100-145,500	FM Repeater Outputs
145,500-145,800	Misc. and experimental modes
145,800-146,000	OSCAR (satellite)
146,010-146,385	FM Repeater Inputs
146,400-146,595	FM Simplex (National Simplex Calling Frequency = 146.52 MHz)
146,610-147,390	FM Repeater Outputs
147,405-147,585	FM Simplex
147,600-147,990	FM Repeater Inputs

Note: The FM channel spacing in Colorado is 15 kHz (repeaters and simplex).

In Closing

- Tonight we used just a couple of digital programs.
- There are tons of digital programs that can be used.
- There is a lot of information on the internet along with Youtube how to videos.

Some say a Rubber Duck Antenna makes a good dummy load!!

- Slap an antenna on that HT!!



- **SMART PHONE:**
- **Your abandoned Android gadgets are actually virtual gold mines. You just have to find the right way to tap into their potential and give them new life. Just some of the things you can do:**
-
- **No Sim Card. No contract.**
- **Can be used to make a emergency call without a Sim Card or contract.**
- **Camera/Camcorder.**
- **Flashlight**
- **MP3 player.**
- **Calculator.**
- **GPS.**
- **Can run applications: HAM radio aps such as AndFlmsg. Yeah!!!**
- **Can be used for APRS.**
- **Good Item for emergency/survival kit.**
- **Good item for Go Box.**
- **It's inexpensive (You may have a used one sitting in a drawer).**
- **Security system. Free app called [Manything](#)**
- **Picture frame/ Portfolio or photo album.**
- **Back-up phone**
- **Alarm clock**
- **Text, PDF's, Example, First Aid Manual (PDF)**
- **Remote Control**
- **Sound Recorder**
- **Has Wi-Fi and Bluetooth Capabilities.**
- **It's a computer!!**

Links

- [Radio Interface.docx](#)
- [USES SMART PHONE.docx](#)

- Side note: You don't need a radio to play digital. Laptops and android devices with the use of programs and acoustical coupling will let you use and learn digital programs.
- Example you can decode audio off of YouTube how to videos with AndFlmsg

