# Fldigi SEAPAC Workshop

- **F**ast **L**ight **D**igital modem applications

- Corky Searls, AF4PM
  - Fldigi install instructions along with Basil N7NIX
    - https://nw-digital-radio.groups.io/g/udrc/wiki/UDRC™-and-fldigi-Setup-Page
  - Linux geek
    - mailto:af4pm@arrl.net

- Randy Hall, K7AGE
  - Lots of YouTube videos about using digital modes
    - http://www.youtube.com/user/K7AGE
  - Linux newb
    - mailto:k7age@k7age.com

Fldigi, what is it?

- Software for digital modes for your computer
  - FREE, open source
    - Mac, Windows, Linux – even runs on the Pi!
  - Uses a soundcard from computer to radio
    - UDRC II board has a sound card chip, plugs on top of the Pi
    - Tigertronics' SignalinkUSB is very popular, USB connection
    - Build your own, connects to audio in and out on computer
    - Many modem radios have built in USB sound card & control

SEA PAC

File   Op Mode   Configure   View   Logbook   Help

Spot   RxID   TxID   TUNE
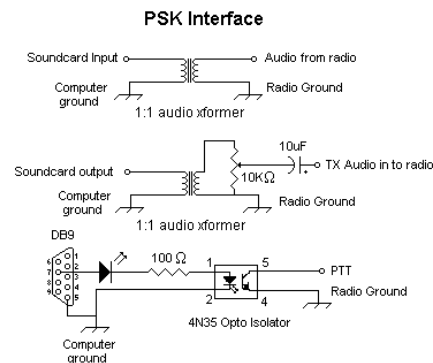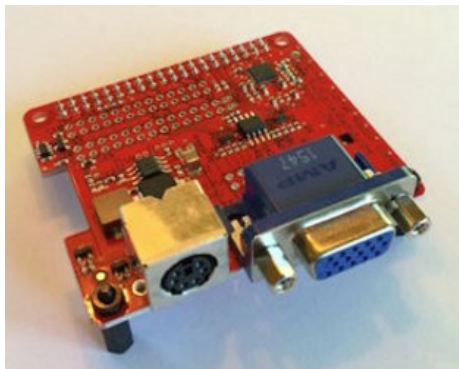
14070.000

Frq 14071.009 On   Off 2311 In   Out

Call   Op   Az

USB   Qth   St   Pr   L   C

company-Rio Tinto so I traveled a lot. You have a real nice set up there on the coast, and your beam is getting a terrific siganl out. BTU W1NDY Alan de N6CIC KK   N6CIC de W1NDY FB on operating from UK, I have operated from 4 countries, before I got smart and went remote via laptop. OK on being a chemist, I worked at marine business for 26 years, and travelled extensively for them. Spouse and I made ten overseas trips after retirement, but I am now her caregiver, so glad we went while she could. Still 100%. I should let you wind thio up if band is still good out there?? K

OK Alan-terrific. I am also my wife's caregiver at the moment as she had a knee replacement. Hopefully she will be back toat least 90% in a few months. Great to have this conversation with you. and I hope to have another in t{ future. Soo many 73s alan as I see the band is now opening up a bit. 73 73 and all the bes e v DE N6CIC SK SK

W1NDY Still 100% print. The ONFY good thing abopt being a caregiver, is you can operate all hours of day and night XYL is terminal so a battle every day. I am on most days, love digimodes, and this has been a real pleasure. Stay cool, enjoy the openingYes thanks Alan, sorry about your wife. Best 73s73 73 and all the best Alan W1NDY DE N6CIC SK SK
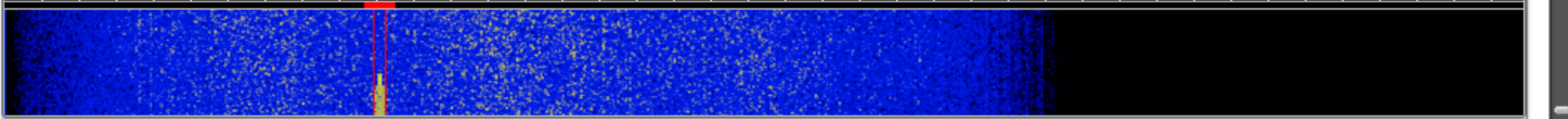
N6CI"de W1NDY Best 73's OM, God bless. SK SK stop>

14071.01 SK stop>

^r

CQ

3.0   Clear

CQ ▶| ANS ▶| QSO ▶▶   KN ▌▌   SK ▌▌   Me/Qth   Brag   T/R   Tx ▶▶   Rx ▌▌   TX ▶| 1

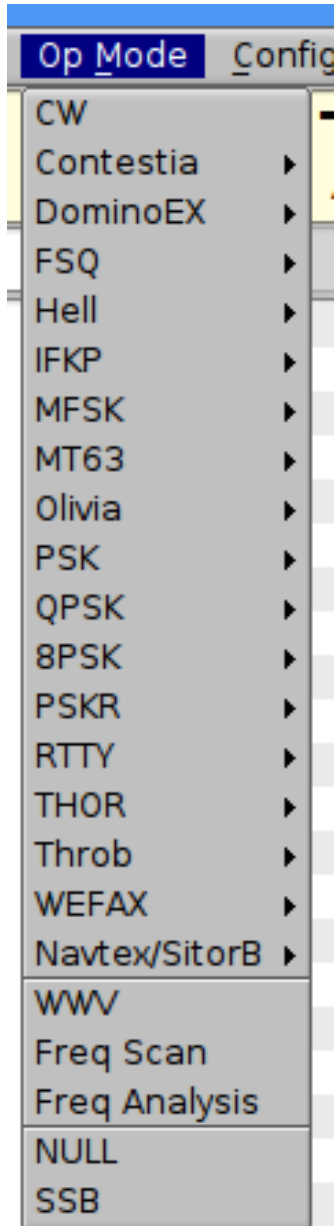500   1000   1500   2000   2500   3000   3500   4000

WF   ◀ -20 ▶ ◀ 57 ▶ x1 ◀ ■ ▶ NORM ◀◀ ◀ 1009 ▶ ▶▶ QSY   Store   Lk   Rv   T/R

BPSK31   s/n 4 dB   imd -30 dB   ◀◀ ◀ -3.0 ▶ ▶▶ ◆ AFC   SQL

Fldigi, lots of modes/modems

Op Mode menu options:
- CW
- Contestia ▸
- DominoEX ▸
- FSQ ▸
- Hell ▸
- IFKP ▸
- MFSK ▸
- MT63 ▸
- Olivia ▸
- PSK ▸
- QPSK ▸
- 8PSK ▸
- PSKR ▸
- RTTY ▸
- THOR ▸
- Throb ▸
- WEFAX ▸
- Navtex/SitorB ▸
- WWV
- Freq Scan
- Freq Analysis
- NULL
- SSB

- Lots to choose from –

- But there are some modes that it doesn't offer
  - SSTV, WSPR, JT65/9, Packet, Pactor
  - FreeDV and probably some others.

- Perfect for -
  - General digital mode operating
  - NBEMS – EMCOMM suite of applications
    - Narrow Band Emergency Messaging System

SEA▦PAC
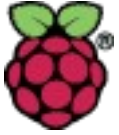
Fldigi, who and where

- Dave Freese W1HJK
  - And help from many others
  - Free – open source
- Available at
  - http://www.w1hkj.com/

Software By W1HKJ & Associates

All source, dmg, and Windows setup files are now available at Source Forge

- fldigi / flarq - current version fldigi 4.0.4, flarq 4.3.6
  - Fldigi On-line html Help
  - Sights & Sounds of Digital Modes
  - Disable "Check for updates when starting program" if you are using a version less than 3.23.04.
- flamp - Amateur Multicast Protocol - file transfer program
- flwrap - file encapsulation / compression
- flmsg - Forms manager
- flrig - rig control program, cooperates with fldigi
- flwkey - modem program for the K1EL Winkeyer series
- fllog - can use same data file as fldigi
- flnet - voice net controller database / check-in application
- kcat - Kachina 505DSP controller for Linux, Windows and OS X
- kcts - Kachina 505 test suite for Linux, Windows and OS X
- test suite - includes linsim, comptext and comptty

Build instructions for various distributions can be found on the fldigi Wiki

12 May 2017

Support fldigi

And whatsoever ye do, do it heartily, as to the Lord, and not unto men.
Colossians 3:23

SEA PAC
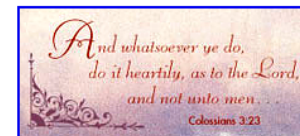
Fldigi @ sourceforge

fldigi
Ham Radio Digital Modem Application
Brought to you by: dave-w1hkj, sb42

Summary | Files | Reviews | Support | Mailing Lists | Git ▾

Looking for the latest version? Download flrig-1.3.31_setup.exe (1.0 MB)

Location of the latest Fldigi files

Home   🔊

Name ⬍	Modified ⬍	Size ⬍	Downloads / Week ⬍
📁 flrig	2017-05-16		685
📁 fldigi	2017-05-10		4,319
📁 alpha_tests	2017-05-05		185
📁 AndFlmsg	2017-05-05		183
📁 flmsg	2017-04-18		462
📁 fieldday	2017-02-14		17
📁 pets	2017-01-29		19
📁 flnet	2016-12-12		62
📁 fllog	2016-06-24		77
📁 flwkey	2016-03-24		37
📁 flxmlrpc	2016-02-25		14
📁 xmls	2015-10-09		477
📁 kcat	2015-10-08		16
📁 flwrap	2015-10-08		117

fldigi
Ham Radio Digital Modem Application
Brought to you by: dave-w1hkj, sb42

Summary | Files | Reviews | Support | Mailing Lists | Git ▾

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Home / fldigi   🔊

Name	Modified	Size	Downloads / Week	
⬆ **Parent folder**				
fldigi_4.0_help.pdf	2017-05-10	17.6 MB	338	ℹ
readme.txt	2017-05-10	649 Bytes	238	ℹ
fldigi-help.zip	2017-05-10	18.5 MB	95	ℹ
fldigi-4.0.4_ppc.dmg	2017-05-10	6.4 MB	56	ℹ
fldigi-4.0.4_setup.exe	2017-05-10	5.3 MB	1,688	ℹ
fldigi-4.0.4_i386.dmg	2017-05-10	6.0 MB	241	ℹ
fldigi-4.0.4.tar.gz	2017-05-10	3.4 MB	262	ℹ
Totals: 7 Items		57.1 MB	2,918	

Windows
Linux, Pi

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Fldigi Installation Instructions

- https://nw-digital-radio.groups.io/g/udrc/wiki/UDRC™-and-fldigi-Setup-Page

🏠 udrc@nw-digital-radio.groups.io / 📖 Wiki / UDRC™ and fldigi Setup Page

Search   🔍 Search

Last edited 12/13/16 · 13 revisions 🔗

Sidebar links:

Application Note: PTT Keying

Bridgecom Systems Repeaters

Cabling the UDRC II for 2 Radios

Configure ircDDBGateway

Creating Virtual Sound Cards for the UDRC™

Direwolf Packet Modem

Generate a Tone to Set Radio Deviation

Notes for Kenwood TKR-750/780 Repeaters

Powering the UDRC™ from 12 VDC

Raspberry Pi 3 Addendum

Setup Fldigi for UDRC™

Simplex Hotspots and Converted Analog Repeaters

UDRC II EEPROM Flashing

Yaesu DR-1X Repeater

Order a UDRC™

Left navigation:

🏠 Home
✏ Subscription
💬 Messages
\# Hashtags
📝 New Topic
📻 Chats
🌐 Subgroups
👥 Directory
📅 Calendar
🖼 Photos
📎 Files
🗄 Databases
📖 Wiki

Instructions

Based on notes provided by Basil - N7NIX and Corky - AF4PM

Contents
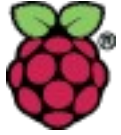
Fldigi, installation

- This may have been run before using Fldigi

- If not, then you will not have audio for Fldigi

- So, enter this -
    - This is included on the Fldigi installation instructions
        - The Pi needs to be connected to the internet

```
cd ~
curl -L -s https://goo.gl/7rXUFJ > set-udrc-din6.sh
chmod +x set-udrc-din6.sh
sudo ~/set-udrc-din6.sh
```
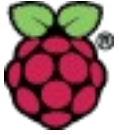
In case of fire, **CRASH**

-
- Backup you memory card
  - **Always** shut down and remove power before inserting or removing memory card.
- Get Win32 Disk Imager and learn how to use it
  - http://sourceforge.net/projects/win32diskimager/
  - Used to copy Pi's operating system image to card
  - Copy Pi's memory card to PC's hard disk
    - This is your **backup file**
    - When you make configuration changes, **make a backup**
    - Also handy to have multiple **memory cards**
- SD Card Copier on the Pi is *suspect*

Win32 Disk Imager - 1.0

Image File

Device

Hash

None   Generate   Copy

☐ Read Only Allocated Partitions

Progress

Cancel   Read   Write   Verify Only   Exit

Waiting for a task.

SEA PAC
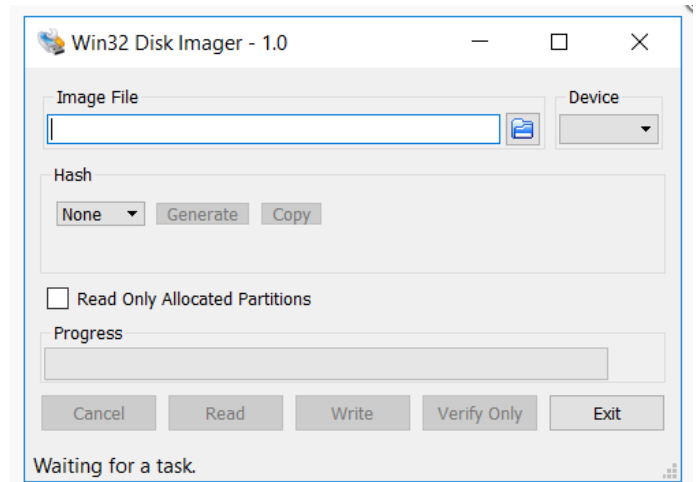
Fldigi, setup screens

- Operator

Don't forget to Save

It will Close without saving

Fldigi, setup screens

- Audio - Devices

Fldigi, setup screens

- Reverse Left/Right when using straight through 6 pin Din cable

- Un-check if using 15 pin D connector
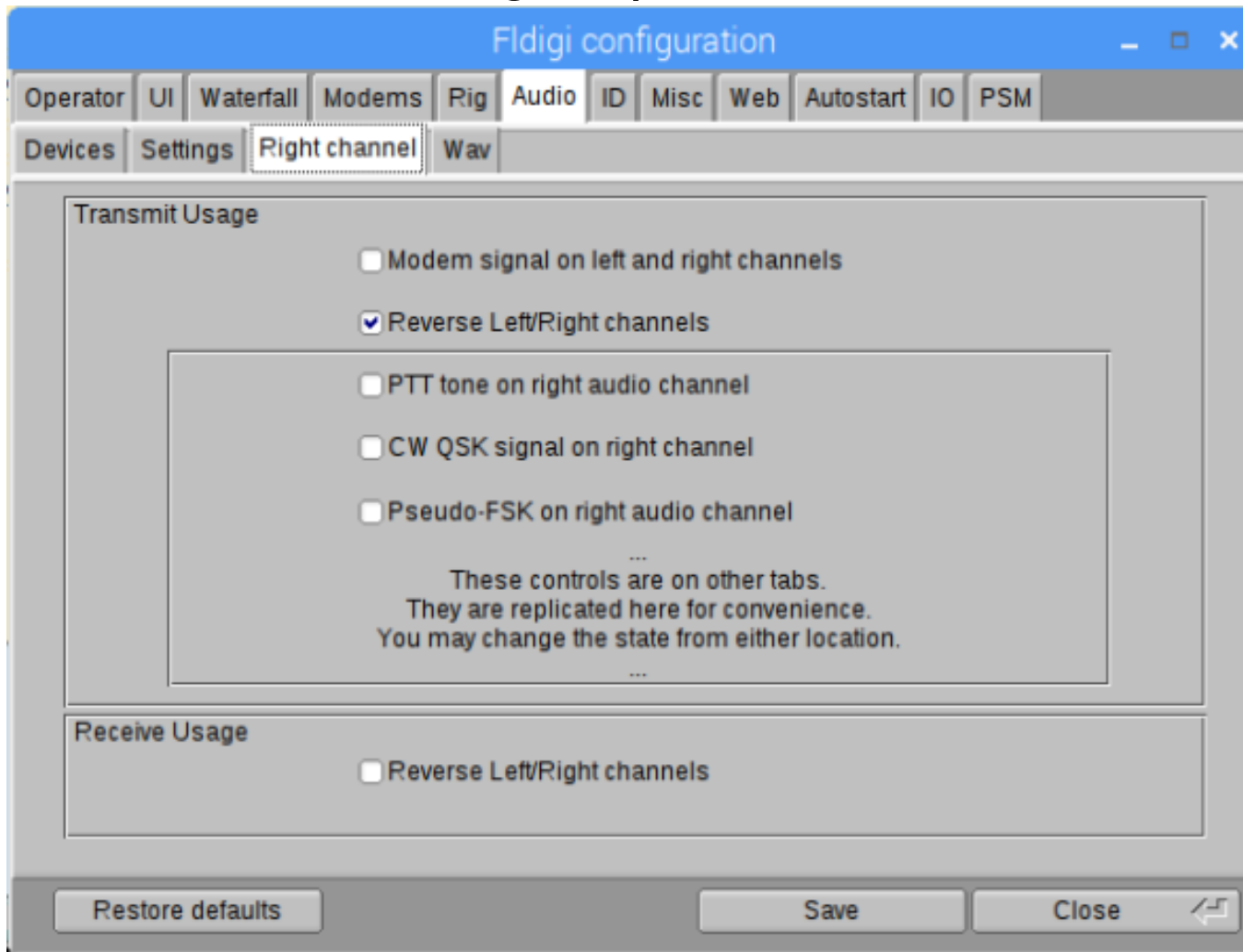
Fldigi, setup screens

- Rig - RigCAT

Rig, directory of rig xml files

Device, menu of serial ports

Baud & Stopbits, set to match radio

PTT, no. Use GPIO?

Click Initialize button & Save

SEA PAC
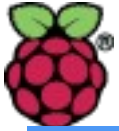
Use Archiver to unzip XML files

rigs

File Edit View Bookmarks Go Tools Help

/home/pi/.fldigi/rigs

Directory Tree

- pi
  - .cache
  - .config
  - .cups
  - .dbus
  - .fldigi
    - avatars
    - data
    - help
    - images
    - kml
    - logs
    - LOTW
    - macros
    - palettes
    - **rigs**
    - scripts

FT-817.xml

192.168.1.6 (compass) - VNC Viewer

[fldigi ver4.0.4 / RigCAT...   [F

- Programming
- Office
- Internet
- Games
- Other
- **Accessories**
  - Archiver
  - Calculator
  - CuteSdr
- Education
- Sound & Video
- System Tools
- Help
- Preferences
- Run...
- Shutdown...

Xarchiver 0.5.4

Archive   Action   Help

Location:

Archive tree

Select "New" to create or "Open" to open an archive

SEA PAC

Fldigi, setup screens

- ## Rig – GPIO for PTT

  - BCM 23 & 1 On for 6 Pin connector

  - BCM 12 & 1 On for 15 pin connector
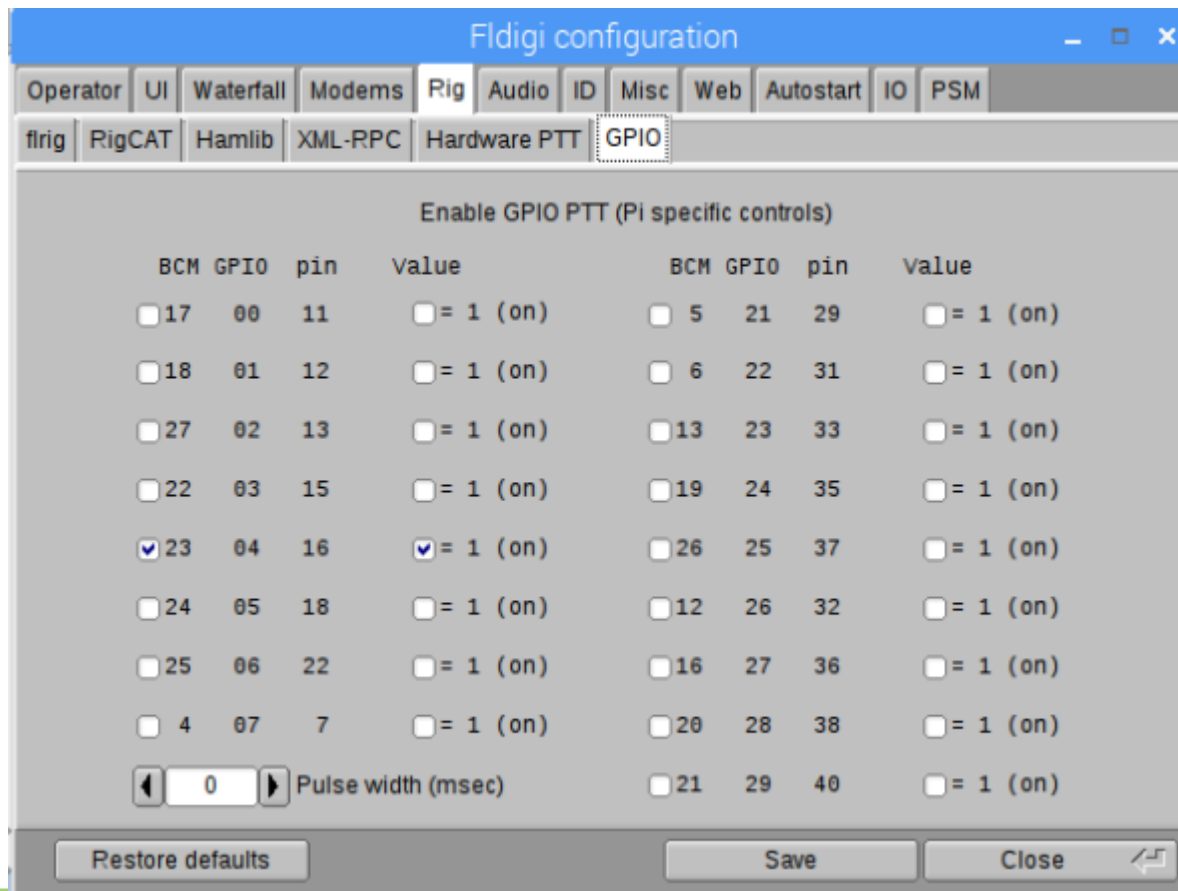
Fldigi, Save Config

- **Save** your hard work
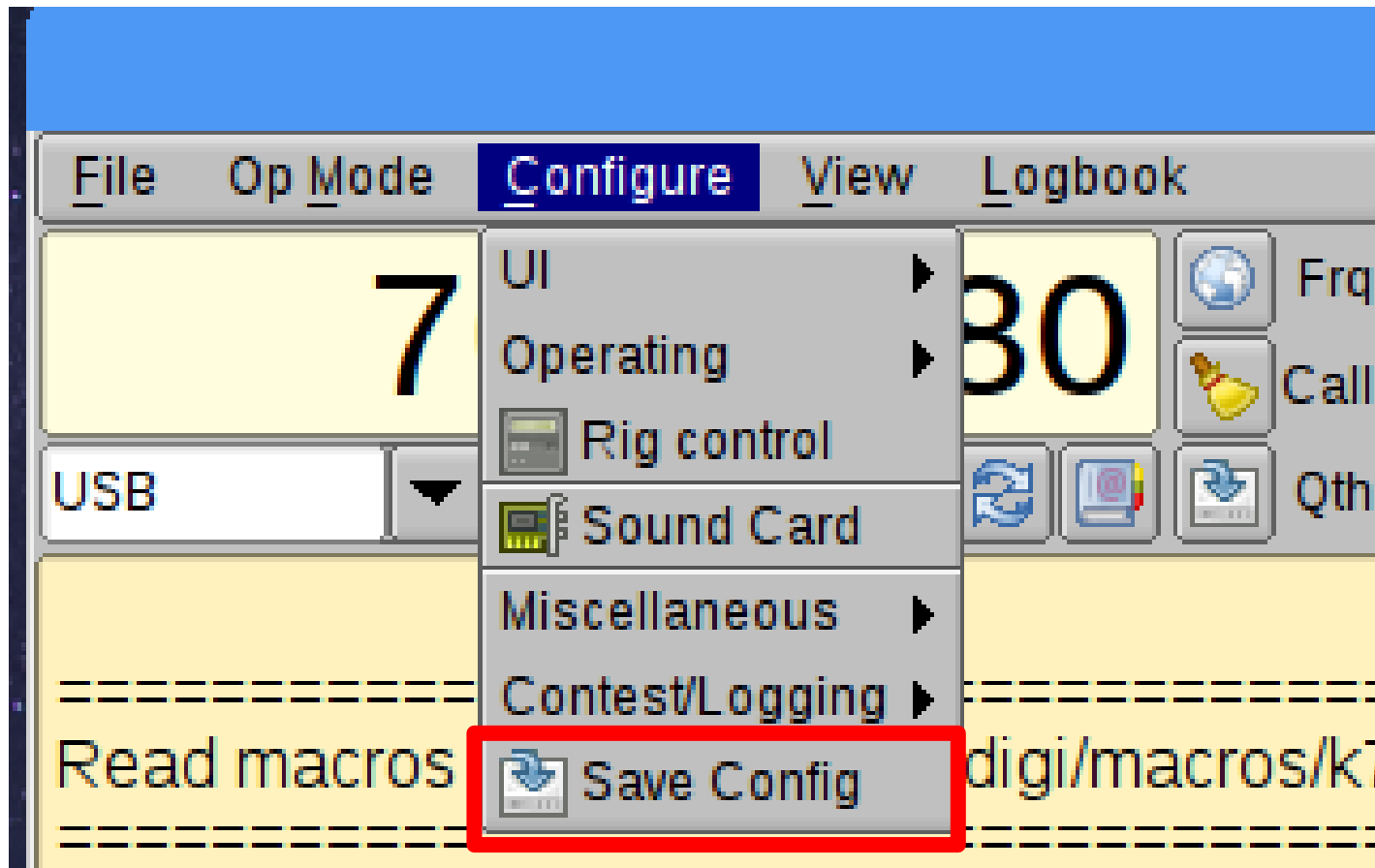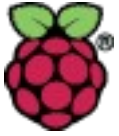
Alsamixer, receive audio level control


```
                          AlsaMixer v1.0.28
Card: udrc                                   F1:   Help
Chip:                                        F2:   System information
View: F3: Playback  F4: Capture  F5:[All]    F6:   Select sound card
Item: PCM [dB gain: -25.00, -25.00]          Esc:  Exit
```

UDRC receive level control

Alsamixer, transmit audio level control

pi@compass
pi@compass: ~

File Edit Tabs Help

os Help

AlsaMixer v1.

AlsaMixer v1.0.28

Card: **udrc**
Chip:
View: F3: Playback   F4: Capture   F5:[All]
Item: **PCM [dB gain: -25.00, -25.00]**

udrc

F3: Playback   F4: Capture   F5:[All]
LO Driver Gain [dB gain: -6.00, -6.00]

Off

Off

MM

00

M

12<>12   9<>9   9<>9

0<>0   0<>0
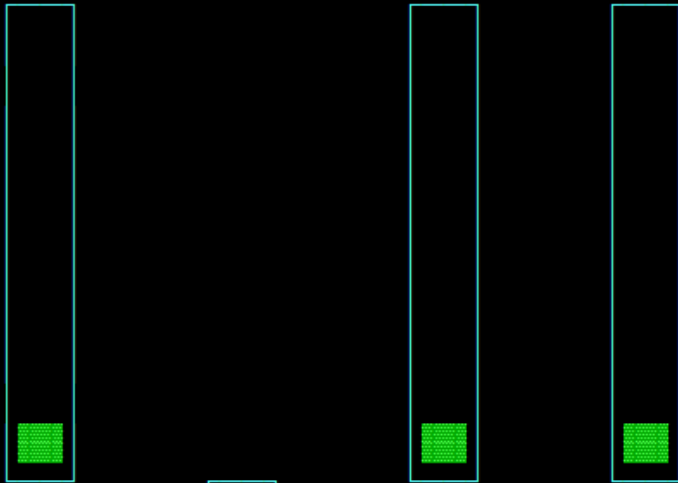
< **PCM** **Mic PGA** **ADC Leve** **ADC Leve** **ADCR**
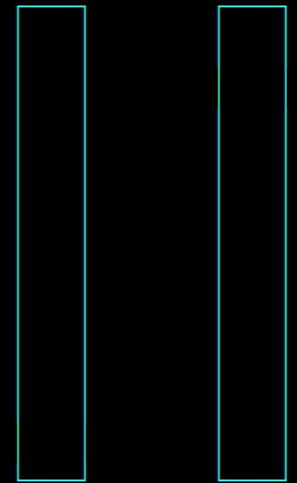
R to **IN3_R to** **LO DAC** <**LO Drive**>**LO Drive** L

UDRC transmitter level control
Adjust for proper ALC
Do not overdrive the transmitter, or spatter

LO Drive to 0

`sudo alsactl store`

EA☉PAC

Fldigi, setup screens

- Macros, right click on button to open editor
  - Save macro file, have several

NBEMS

- Narrow Band Emergency messaging system
  - Fldigi
    - Core modem program for data transmission
    - Links to other NBEMS programs
    - Includes FLarq
  - Flmsg, FL message
    - ICS forms, Radiogram, CSV messages
  - Flamp,
    - Multicast file protocol, sends in blocks with checksum
    - Provides for repeat request of missing blocks
  - Flwrap, FL file wrapper
    - Wraps file with checksum for error detection

NBEMS Configuration

- NBEMS, check all, locate Flmsg
- Autostart, Locate Flmsg and Flwrap

Flmsg

- Used to send and receive message forms

Flmsg - configuration

flmsg config — Personal

Field	Value
Call:	K7AGE
Tel:	530-615-6739
Name:	Randy
Addr:	PO Box 1874
City/St/Zip:	Gold Beach Or
Email addr:	k7age@k7age.com

Tabs: Personal | Date/Time | Files | Radiogram | ARQ | UI

flmsg config — Files

Tabs: Personal | Date/Time | Files | Radiogram | ARQ | UI

Wrap
- ☑ Open folder when exporting

Naming Files   Date-time
- ☑ Callsign   Local time, L ▼
- ☑ Serial #   [1]   Next #

MARS roster file
MARS_ROSTER.csv   [Find]

Html message text
- ☑ Word wrap at   ◄ 72 ► characters

flmsg config — ARQ

Tabs: Personal | Date/Time | Files | Radiogram | ARQ | UI

Field	Value
Fldigi xmlrpc Addr:	127.0.0.1
Fldigi xmlrpc Port:	7362
Retries:	5
Block Size:	32

- ☑ Enable ID/RxID
- ☑ Disable ID/RxID after connect
- ☑ Restore ID/RxID
- ☑ Open Browser
- ☐ Sync modem to fldigi
- ☑ Change modem with autosend   [Defaults]

flmsg config — UI

Tabs: Personal | Date/Time | Files | Radiogram | ARQ | UI

- ☑ User Interface = expert

Flmsg, sending

Flmsg, receiving

Flamp

- ## File transfer

  - Breaks up file into blocks with checksum

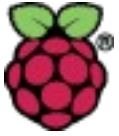 - Receiving station is able to ask for re-send of missing blocks

Would you like to send this by voice?

- I didn't think so. Use Flamp
  - Send as .csv file. Install LibreOffice, if not installed

medications.ods - LibreOffice Calc

	A	B	C	D	E
1	Last	First	Phone number	Medication	Dose
2	Bloggs	Fred	123-456-0789	Cyclobenzaprine	100 mg
3	Smith	John	456-789-1230	Hydrochlorothiazide	50 mg
4	Jones	Lorri	147-025-8369	Amitriptyline	75 mg
5	Meyer	Paul	369-984-1258	Pantoprazole	300 mg
6	Creek	Sam	512-753-9248	Zolpidem	100 mg
7	George	Tom	415-546-1397	Xopenex	10 mg
8	Hess	Pat	818-569-4826	Acetaminophen	50 mg
9	Johnson	Steve	213-587-8564	Spironolactone	1000 mg
10	Ross	Elmer	569-421-1136	Garcinia Cambogia	250 mg

Sending from Pi to pc

File / Folders / NBEMS files

52 seconds using MT63-2KL

??? minutes using voice

Fldigi Workshop Session

- So much to try and cover in a short time

- You will now need to go home and practice
  - Interface a radio to your Pi and
  - Test communicating with Fldigi/NBEMS on your PC

- Digital nets:
  - ORCA Tuesdays 19:30 3.581 MHz MFSK32
  - ODN Fridays 20:00 ???

- Thanks,

- And have fun with your Pi

- Backup your memory card!

- Time for a demo?

SEA PAC