Wizkers:Radio

A new kind of HAM Radio controller and toolbox

http://www.wizkers.io/wizkersradio


9.000


Wizkers.io
Configure
Listen
Monitor
Visualize
Store data
Share

What makes Wizkers different

Universal: all OS, all hardware

Open: shares data with 3rd parties. Open Source, MIT license

What is Wizkers:Radio ?

User experience : realistic radio controls and panels + quick controls

Monitoring: Monitor operating parameters on the radios and instrumentation

Open: supports multiple rig control protocols - simultaneously!

Configuration: in-depth configuration of your equipment

Toolbox: Supports HAM-related equipment beyond rigs

Wizkers:Radio at a glance

Your rig

Wifi
Ethernet
USB
Serial
Bluetooth
...

Input plugins

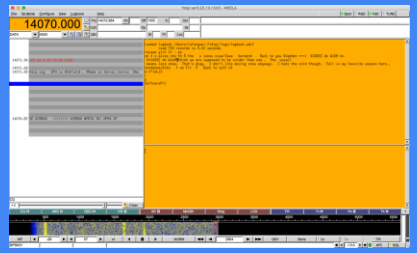
Wizkers Radio

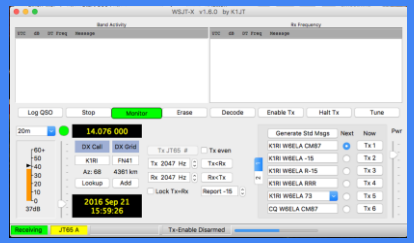
Output plugins

Monitoring, control and configuration

http
XML-RPC
Rigctld
WebRTC
TCP/IP

Management & Visualisation

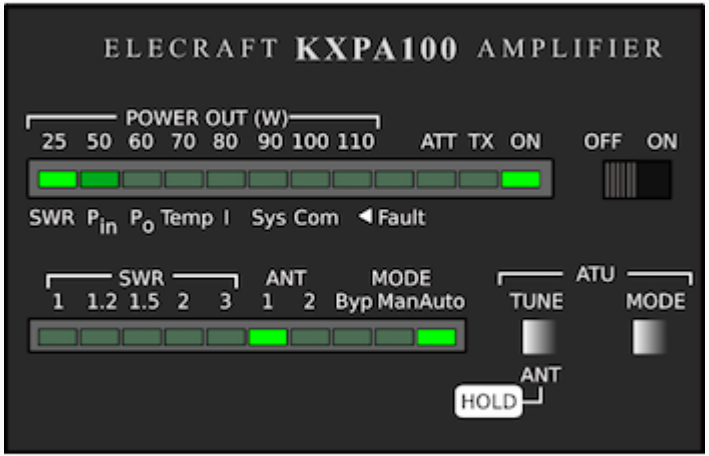




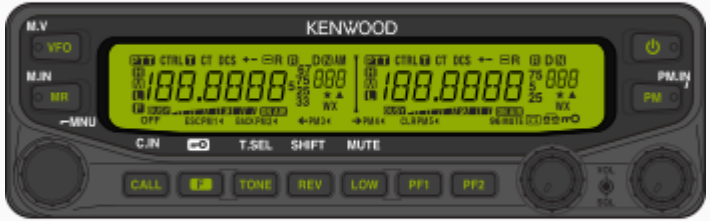
Ham Radio Software

#0 Supported equipment

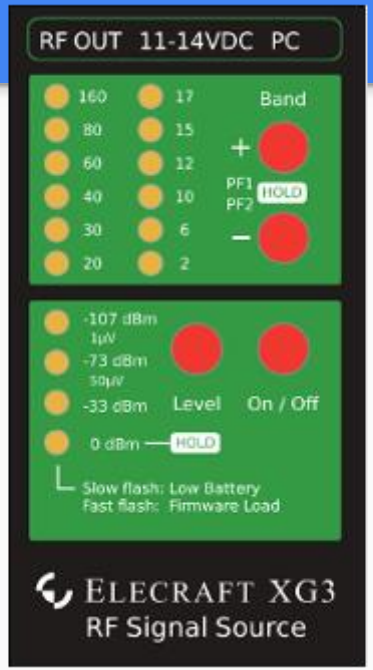
Elecraft rig support

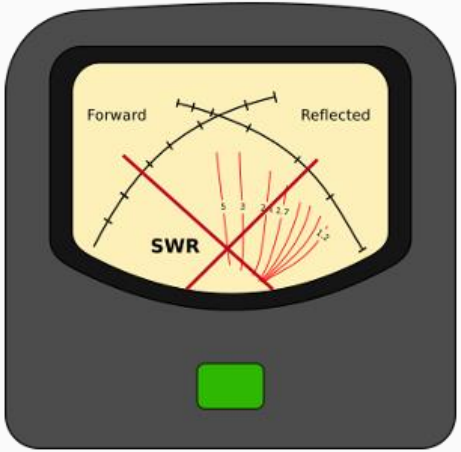


… and a couple of others too



Non-radio


RF OUT 11-14VDC PC
160
80
60
40
30
20
17
15
12
10
6
2
Band
+
PF1
PF2
HOLD
−
-107 dBm
1µV
-73 dBm
50µV
-33 dBm
0 dBm
HOLD
Level
On / Off
Slow flash: Low Battery
Fast flash: Firmware Load
ELECRAFT XG3
RF Signal Source


Forward
Reflected
SWR


0.00W
SWR -.--
LP-100A
Digital Vector
RF Wattmeter
Mode
Alarm
Dn
Peak/Avg./Tune
Up
Alarm
Power

#1: Rig connection

Connect any way you want

- Direct serial/USB
  - Any serial to USB cable
  - Any serial cable if your computer has one!
  - Native USB (not serial over USB)

- Bluetooth dongle
  - “Classic” bluetooth 100% supported
  - Bluetooth LE support coming up

- Wifi dongle
  - Pignology Piglet works great!

#2: How to run Wizkers:Radio

Run it anywhere!

Run on a Single Board Computer

- Widely tested on Raspberry Pi and BeagleBone
- Built-in access control
- Provides a web interface that is 100% identical to the desktop app

Run on your laptop/desktop as a desktop app

- Linux, Windows and MacOS supported
- Both as “Chrome App” and native

GET IT ON Google Play

available in the chrome web store

Available at amazon

Download on the Mac App Store

#3 So what does it do?

#1 “Classic” rig control

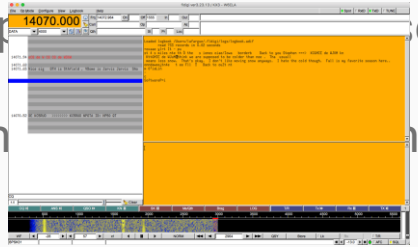
Frequency, mode, etc

Support for:

- XML-RPC (fldigi)
- Hamlib rigctld

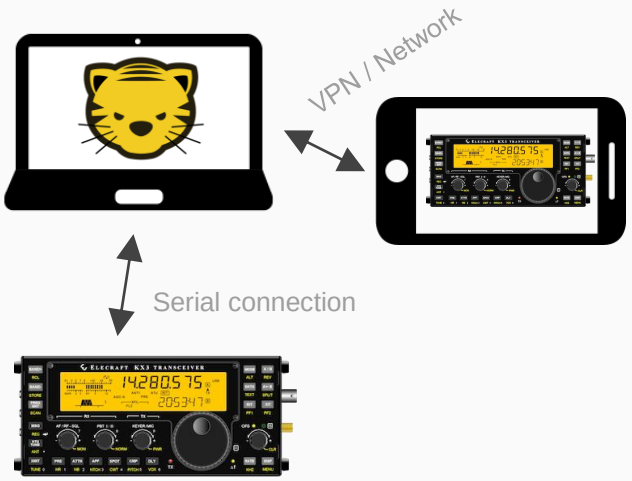
All p ed sim no rec

Sim ory m

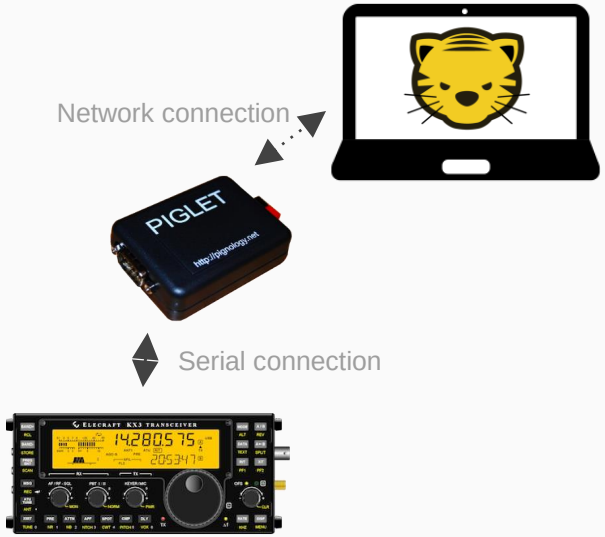


#2 Remote rig control

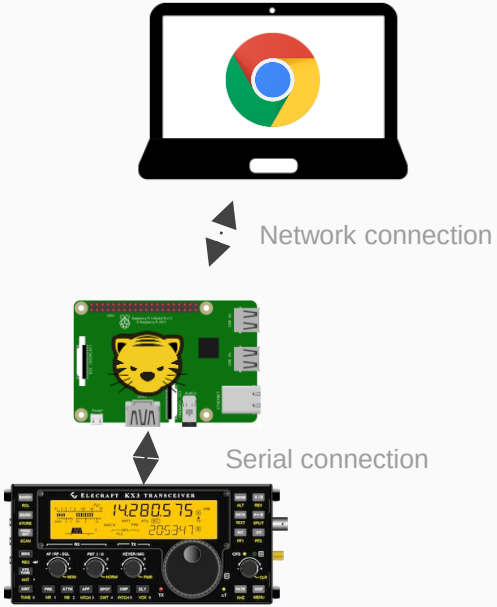
“Wizkers Netlink”
Wizkers to Wizkers



“Piglet” or similar
(Serial-over-WiFi)

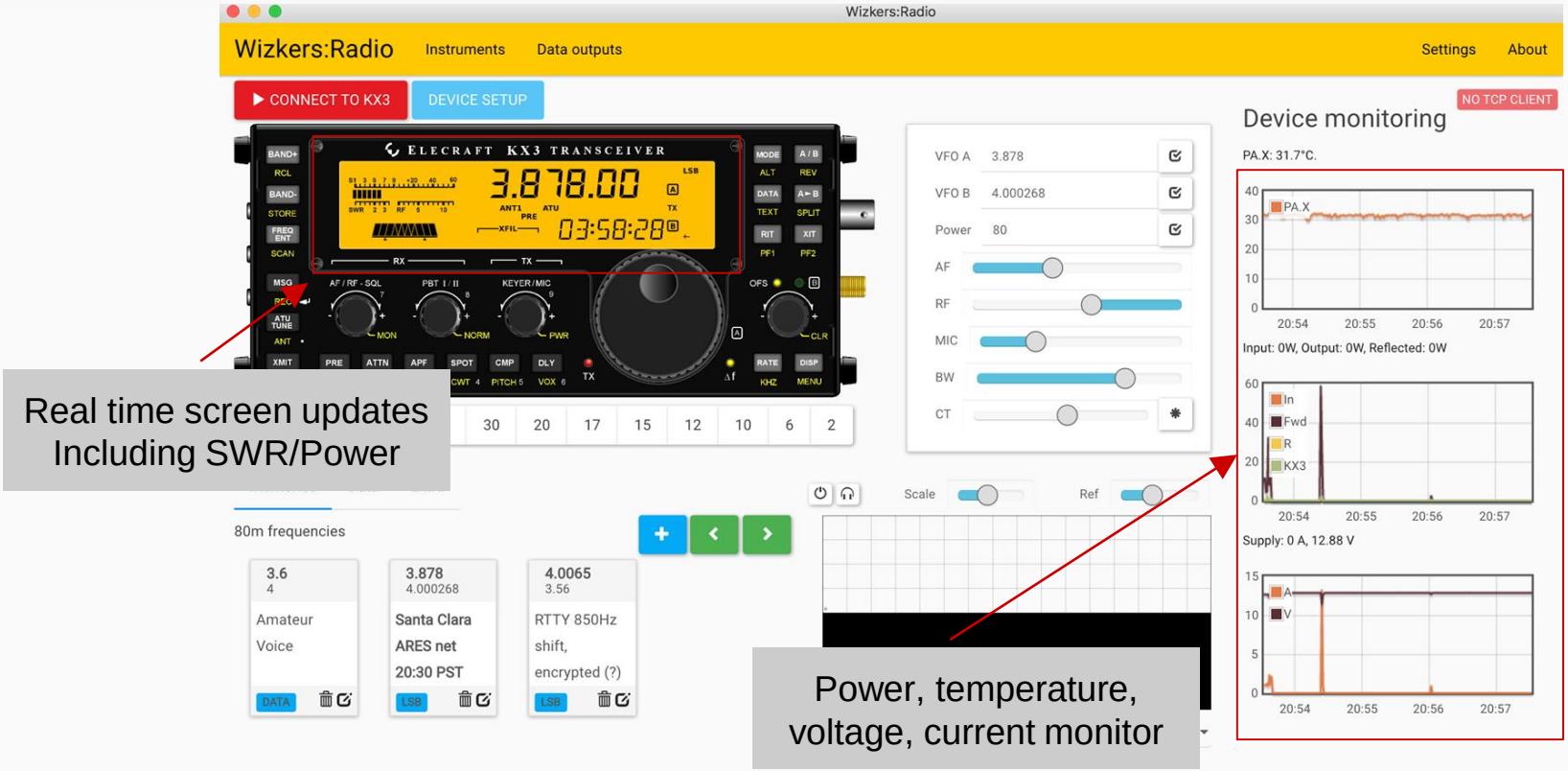


Remote through
Web browser



… no audio, not firewall/router traversal
Yet.

#3 Rig monitoring



#3 Rig monitoring: KXPA100 example

Wizkers:Radio Instruments Data outputs Settings About

DISCONNECT KXPA100

Amplifier

Fault: NO FAULT

PA Bypass

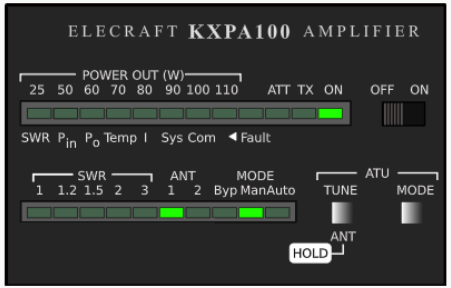
Attenuator

Dissipated Power: 0.0

Drain Current: 0

Supply Voltage: 13.14

Temperature: 22.1



Input Power: 0 Reflected Power: 0 Frequency: 00000

Forward Power: 0 Last SWR: 1 Band: 05

Antenna Tuner

Mode: Manual

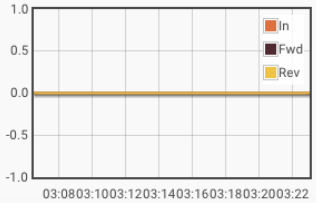
Antenna: 1

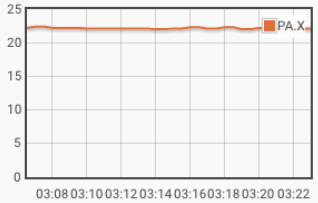
Tune

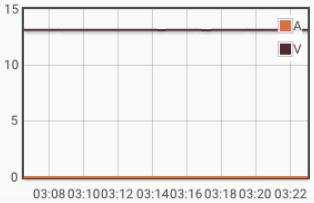
ATU Bypassed

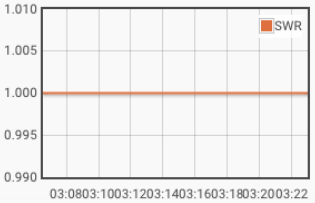
Caps on Tx side

Capacitance (pF)		Inductance (nH)	
Total: 72		Total: 480	
☐ 1360	☐ 82	☐ 9000	☑ 480
☐ 660	☑ 40	☐ 4400	☐ 230
☐ 300	☑ 22	☐ 2100	☐ 110
☐ 150	☑ 10	☐ 1000	☐ 50









#4 Configuration - Elecraft

Elecraft’s CAT protocol is extremely extensive and enables in-depth rig configuration

Wizkers:Radio Instruments Data outputs Settings About

Diagnostics KX3 KXPA100 PX3

Audio Band config Memories Flash Explorer

Radio Memories

Memory to read: 6 READ ALL FROM RADIO

ID	Label	Description	VFO A	Mode A	Data Mode	VFO B	Split	Mode B	Offset	PL Tone
1	TEST2	23	14.123456	DATA-REV	FSK D	14.123456	☐	USB	0	
2	CW	C	4.5	CW	DATA A	4.5	☐	CW	0.5	
3	FM1	FM setting no tones	145.123456	FM	DATA A	144.39	☐	AM	0	
4	FM2	FM with PL/Tones	145.123456	FM	DATA A	144.39	☐	FM	-1.7	94.8
5	FM3	FM with offset no PL	145.123456	FM	DATA A	144.39	☐	FM	-1.7	
6	TEST4	test_test_test_test_te	14.123456	DATA	DATA A	14.123456	☐	USB	0	

#4 Configuration - Memory management

Wizkers:Radio Instruments Data outputs Settings Profile About

General Radio Settings Memories

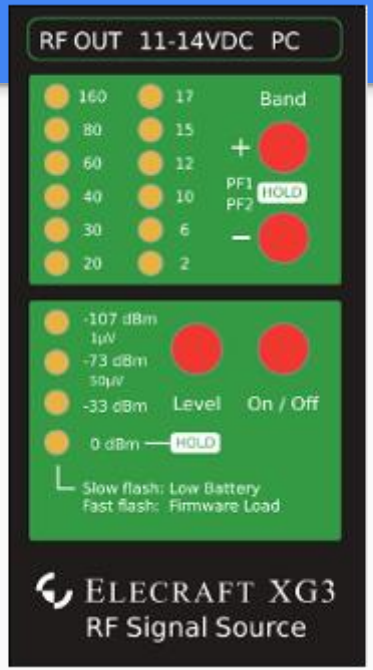
READ FROM RADIO

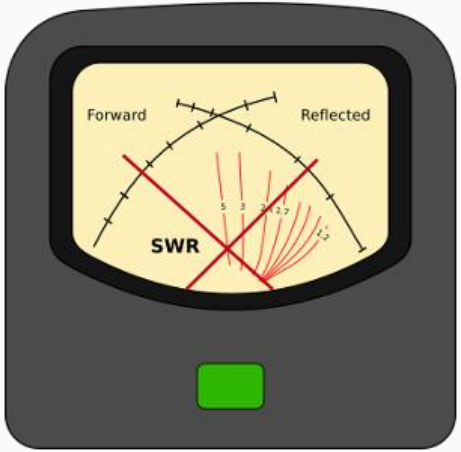
Memories

0 to 99 100 to 199 200 to 299 300 to 399 400 to 499 500 to 599 600 to 699 700 to 799 800 to 899 900 to 999

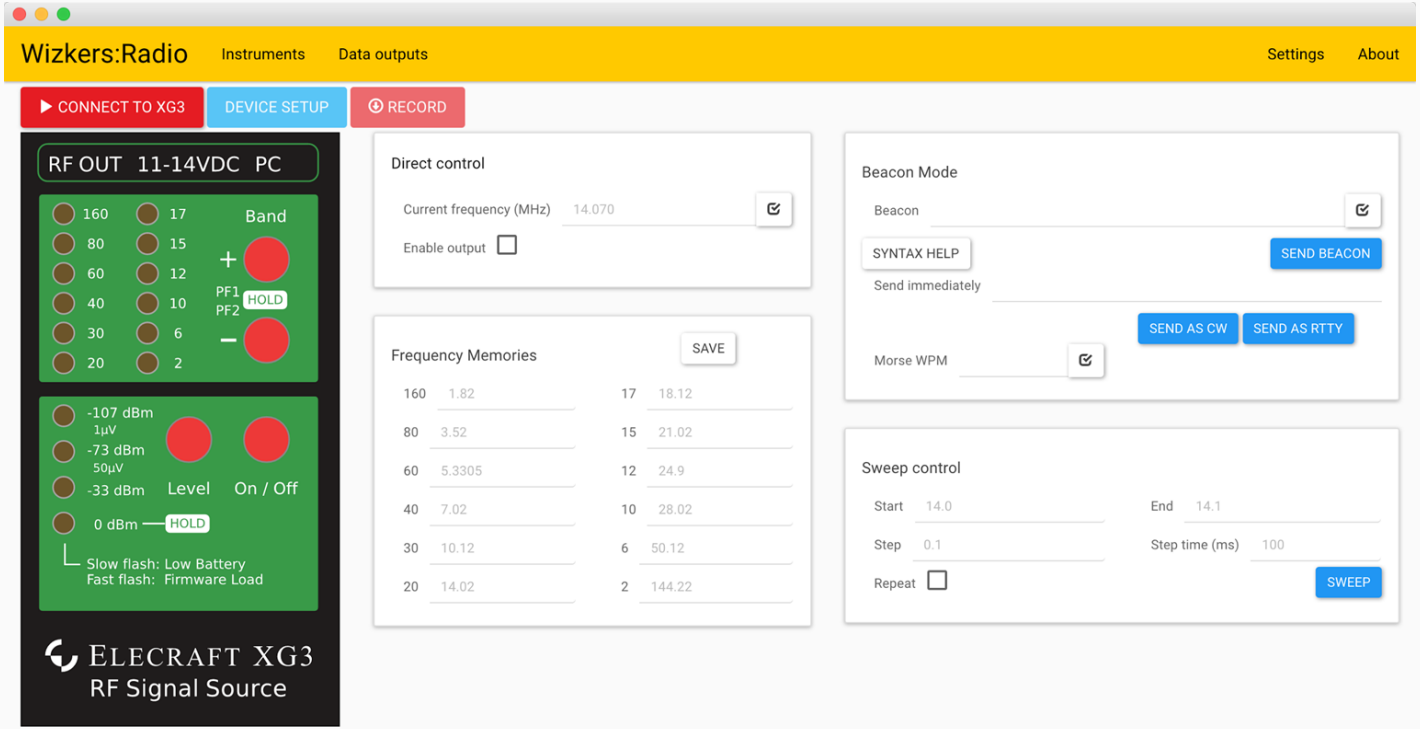
ID	Name	Freq	Mode	SQL Mode	Tone	CTCSS	DCS	Duplex	Offset	Tune Step	Skip
0	N6NFI	145.23	FM	Tone	100	88.5	23	-	0.6	5.0	☐
1	N0ARY	145.09	FM	None	100	88.5	23	Off	0	5.0	☐
2	APRS	144.39	FM	None	67	67	23	Off	0	5.0	☐
3	NORCAL	145.05	FM	None	67	67	23	Off	0	5.0	☐
4	WL2K-1	145.63	FM	None	67	67	23	Off	0	5.0	☐
5	N1NSA	444.1	FM	Tone	218.1	67	23	+	5	6.25	☐
6	W6ASH	145.27	FM	Tone	100	67	23	-	0.6	5.0	☐
7			FM	None	67	67	23	Off	0	5.0	☐
8			FM	None	67	67	23	Off	0	5.0	☐

#5 - Instrumentation

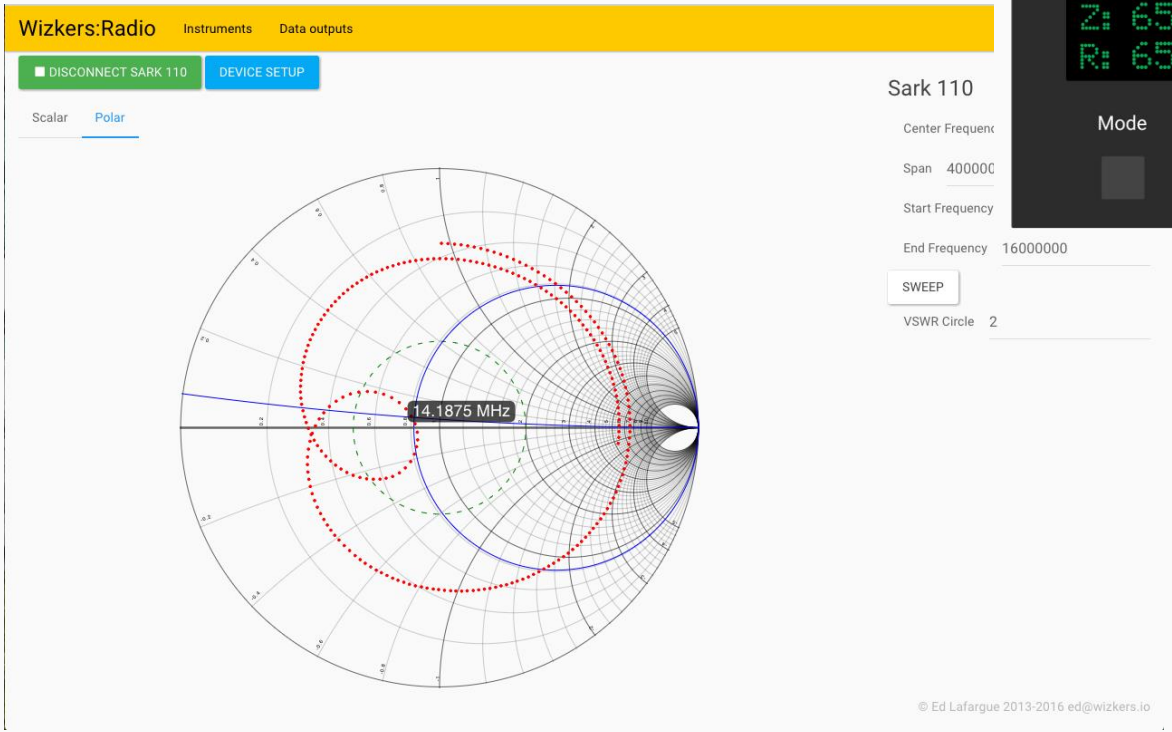


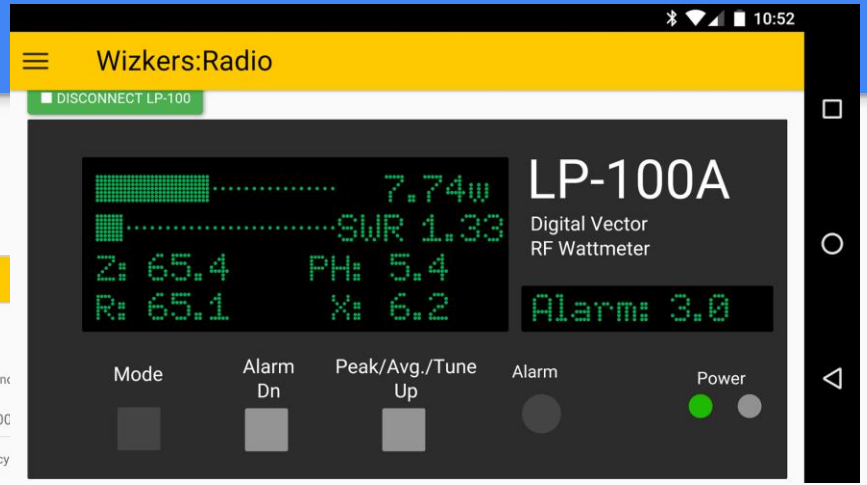


Extended XG3 Utility

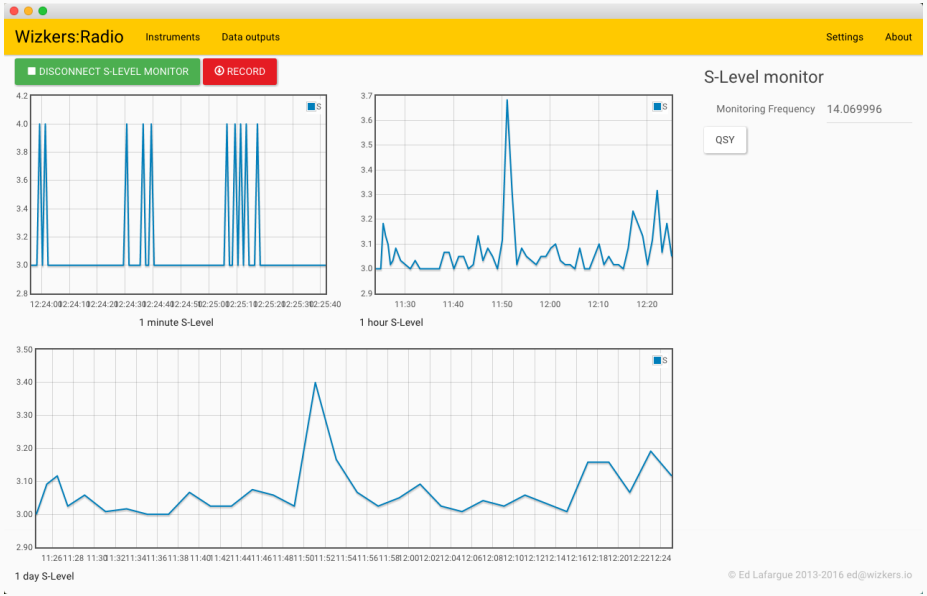


Graphing / SWR Reading / Monitoring





Using Radios for other tasks: S-Level monitoring, SWR Sweep



Demo - Elecraft KX3 / KXPA100 / PX3

Main panel
Memories
Direct input
Rig main panel simulation
Amp monitoring

Rig configuration
PX3 Screenshots
Memory editor

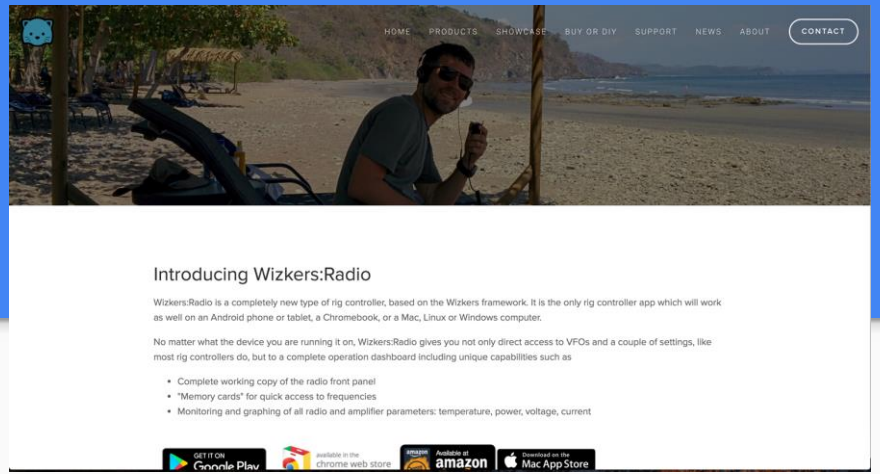
Where to?

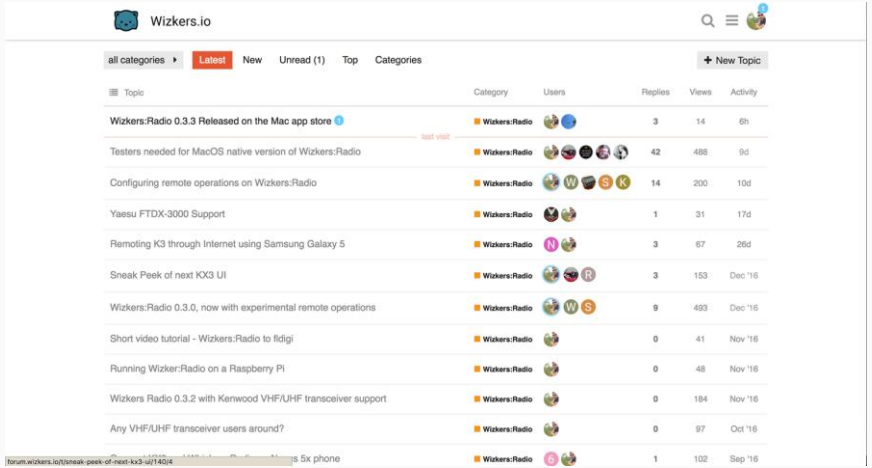
Next steps

Visit http://wizkers.io/wizkersradio

Join http://forum.wizkers.io/

Visit http://github.com/wizkers





Want to contribute ?

100% Javascript framework

Well documented code

Very modular architecture- adding a new radio/link/etc is just a couple of files

Large existing codebase - copy, adapt, improve

MIT License

2017 Roadmap

100% LCD emulation - nearly there!

IOS App

More radios and equipment - need access to hardware or volunteers! (hint hint)

Add audio for remote control using WebRTC

Simple logging

… open to suggestions from the crowd!

Thank you!

wizkers.io
ed@wizkers.io