

# Station Automation

.....*Another Look!*

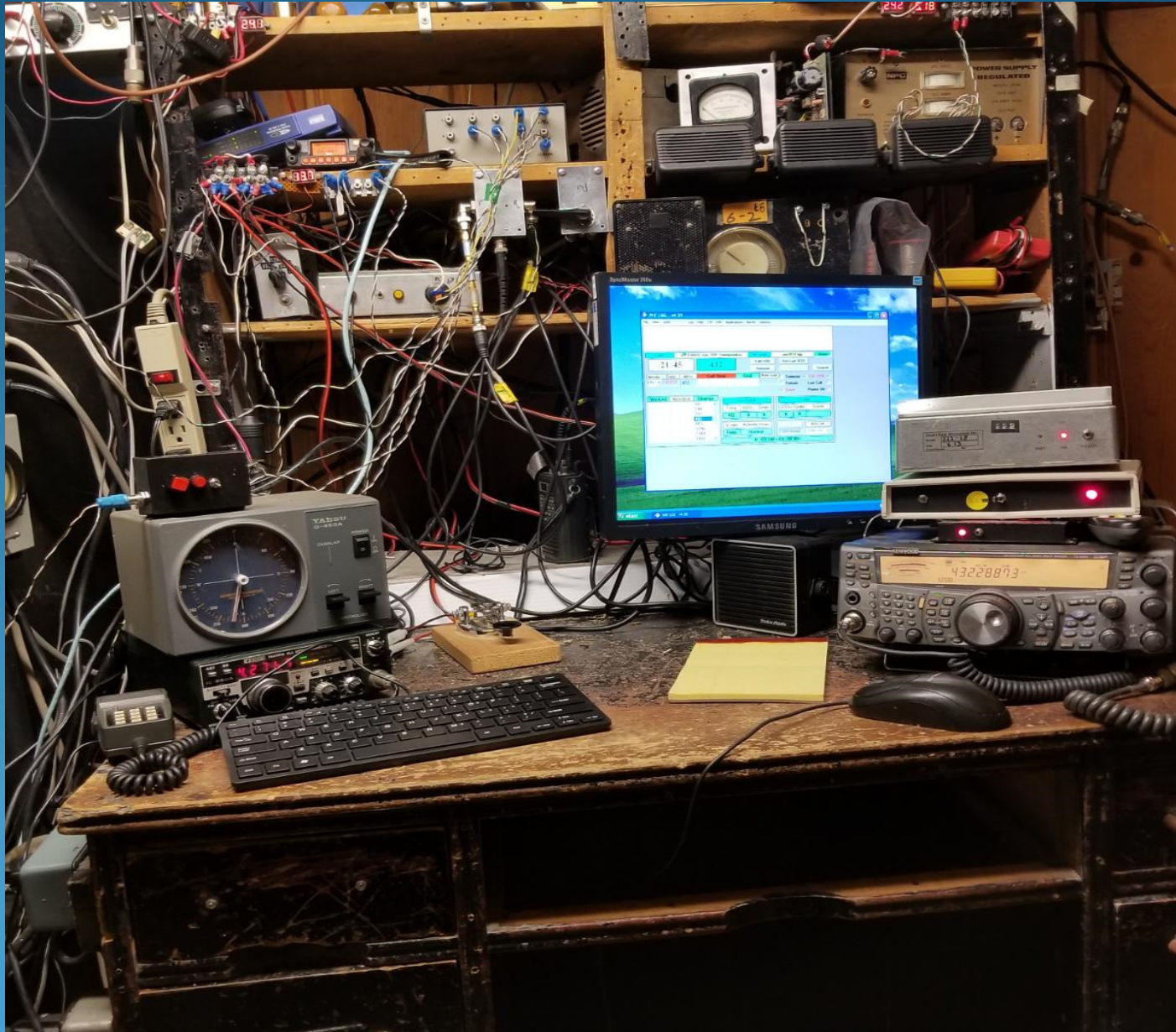
N<sub>3</sub>RG

# Why automate?

- Wrong antenna selected
- Wrong band selected
- Wrong band or mode logged
- Transmitted into your LNA
- Resulting in Blown PA's, QSO's Lost, LNA's lost...etc!
- ...too many things to remember in the heat of the battle!

# Establish Your Needs:

- If you have a 3 band, 3 antenna simple setup...., you're probably OK!
- BUT...who stays on 3 bands?
- So, your needs will expand as your setup expands!



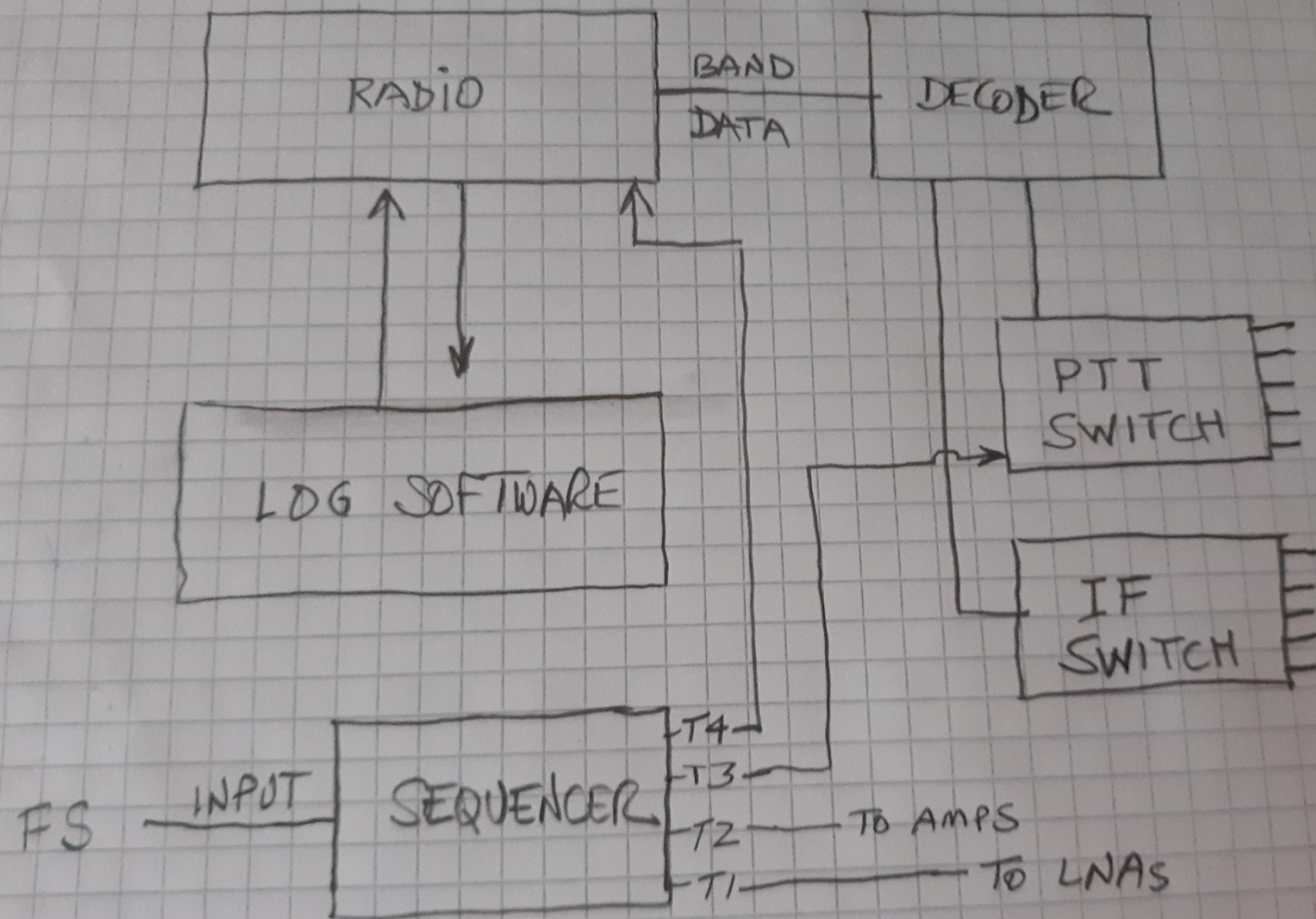


# Let's begin the process:

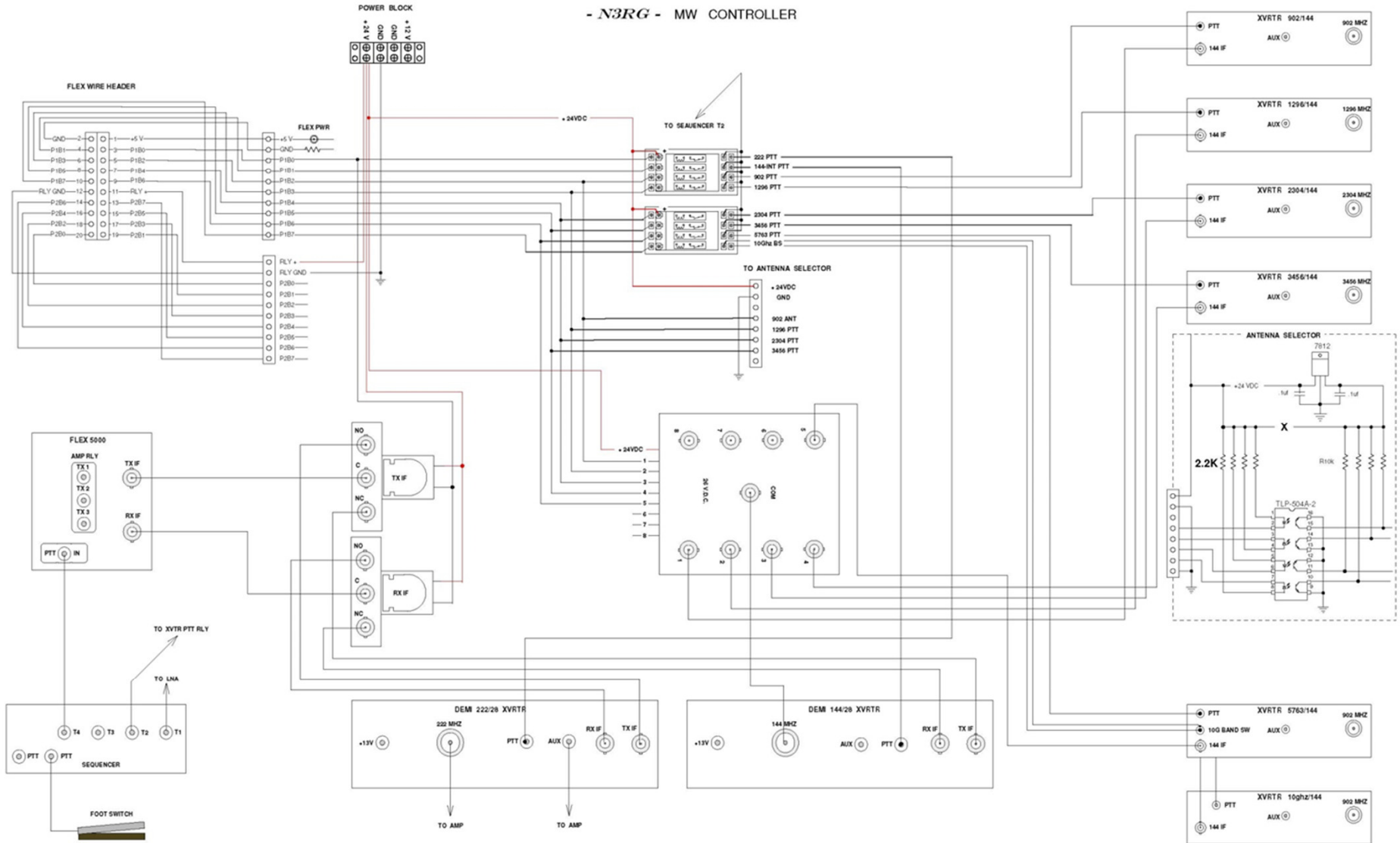
- Establish what bands you're on
- Define your process for changing bands...ALL the steps!
- KISS method!
- Leave room for expansion

# Come up with a Plan:

- A block diagram is a good way to start
- Usually leads to a schematic diagram
- Develop a parts list
- Always leave room for expansion!



# - N3RG - MW CONTROLLER





# No Turnkey process exists!

- Every station's setup is different
- Equipment varies
- Interconnections vary
- Antennas vary

# What's available!

- Hardware
  - Switches, Relays, OTS products, Sequencer
- Software
  - Band Data, BCD, Bit, UDP, etc
  - Serial, TCP

## Where?

- K3TUF – Phil <http://k3tuf.com>
- W3SZ - Roger – [www.nitehawk.com/w3sz/](http://www.nitehawk.com/w3sz/)  
Miscellaneous Hardware Projects at W3SZ

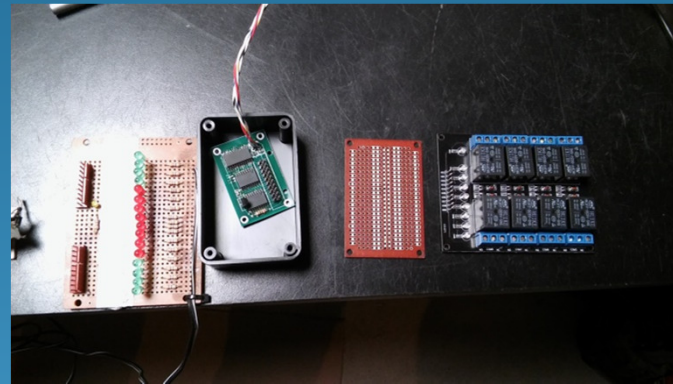
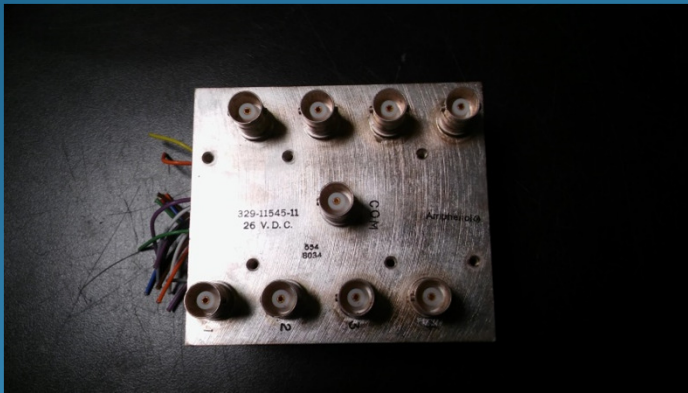
Terry Price – Directive Systems Has PC board design that may be available if there is enough interest

# What's available!

- Arduino
- Rasp Pi
- Basic Stamp
- PC

# What's available!

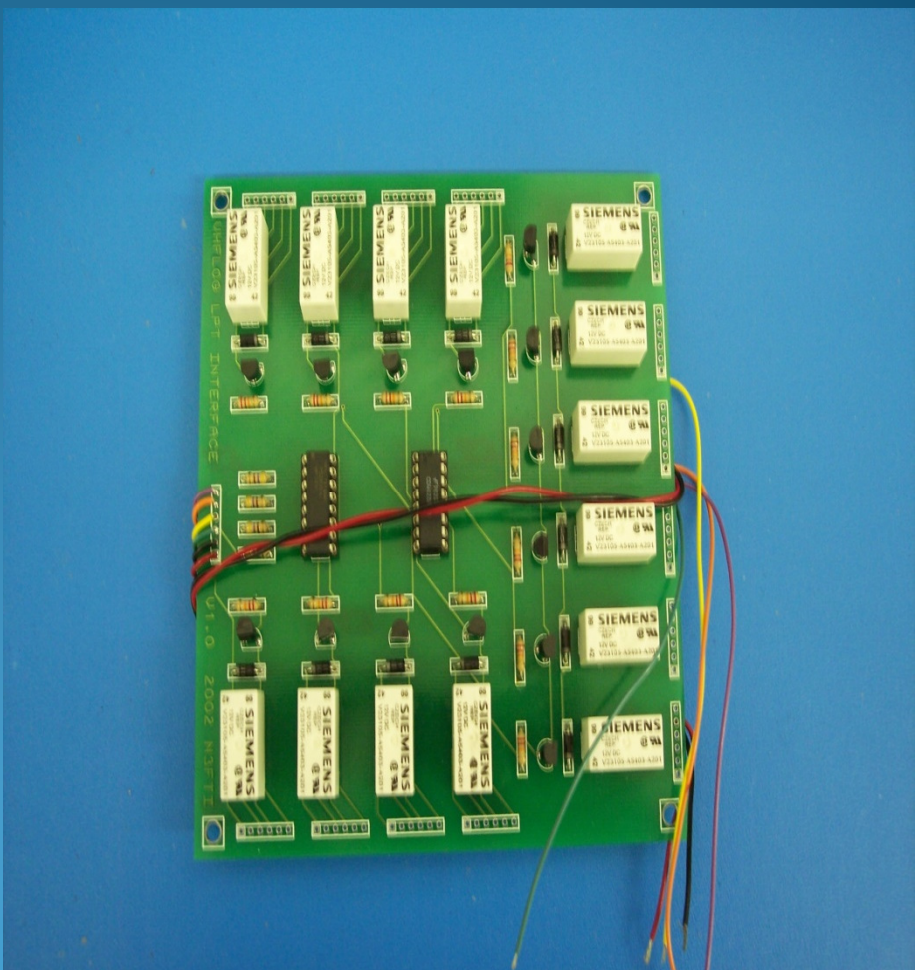
- Hardware



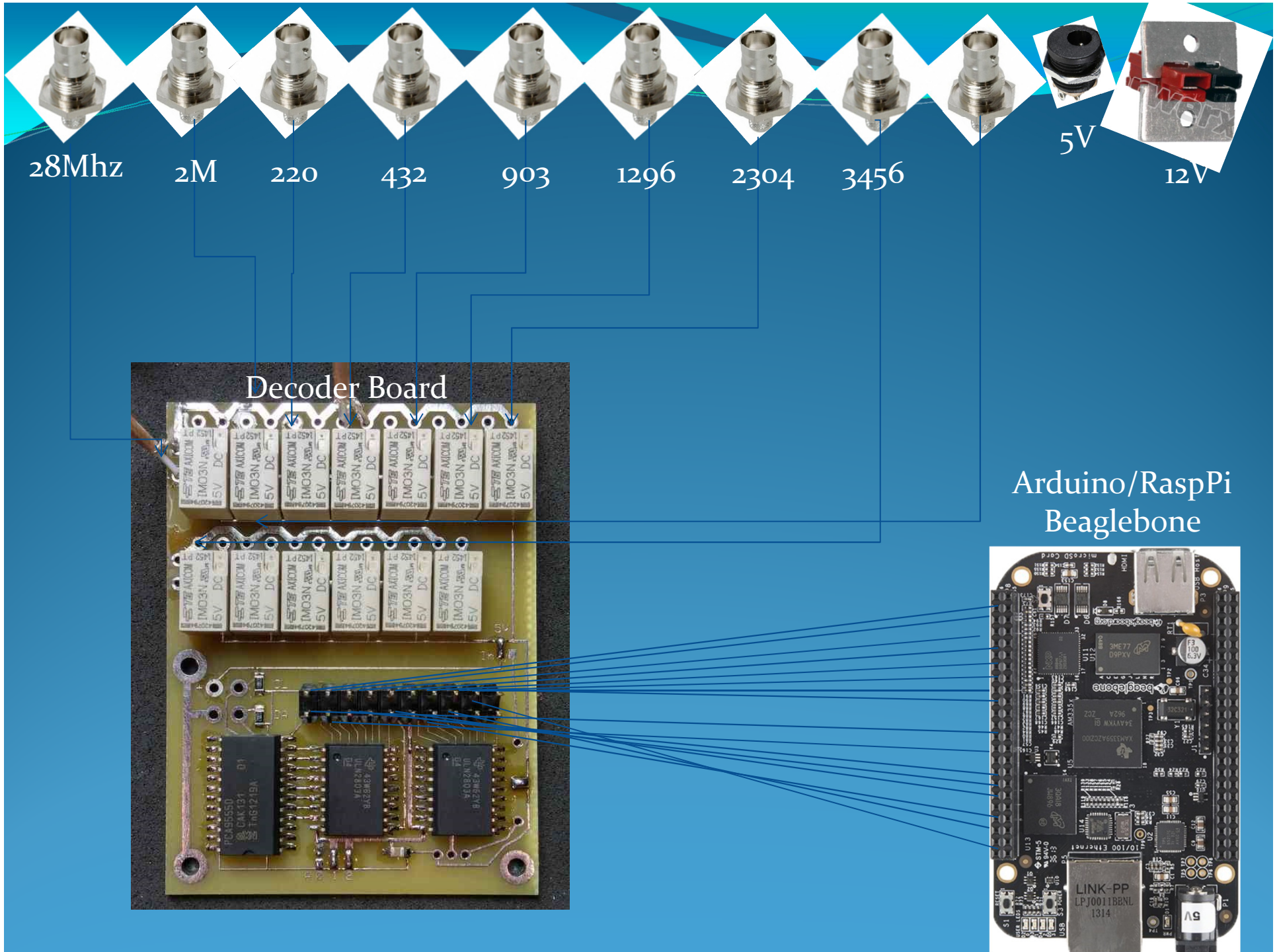




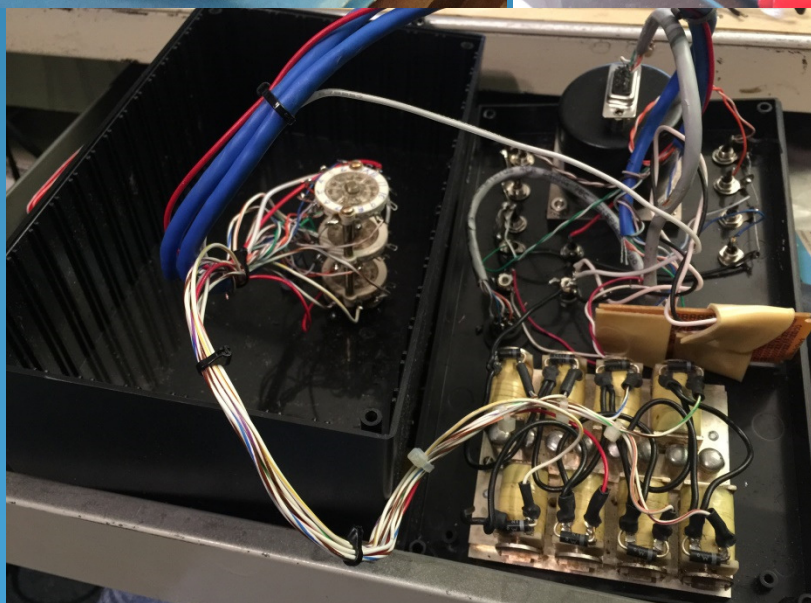




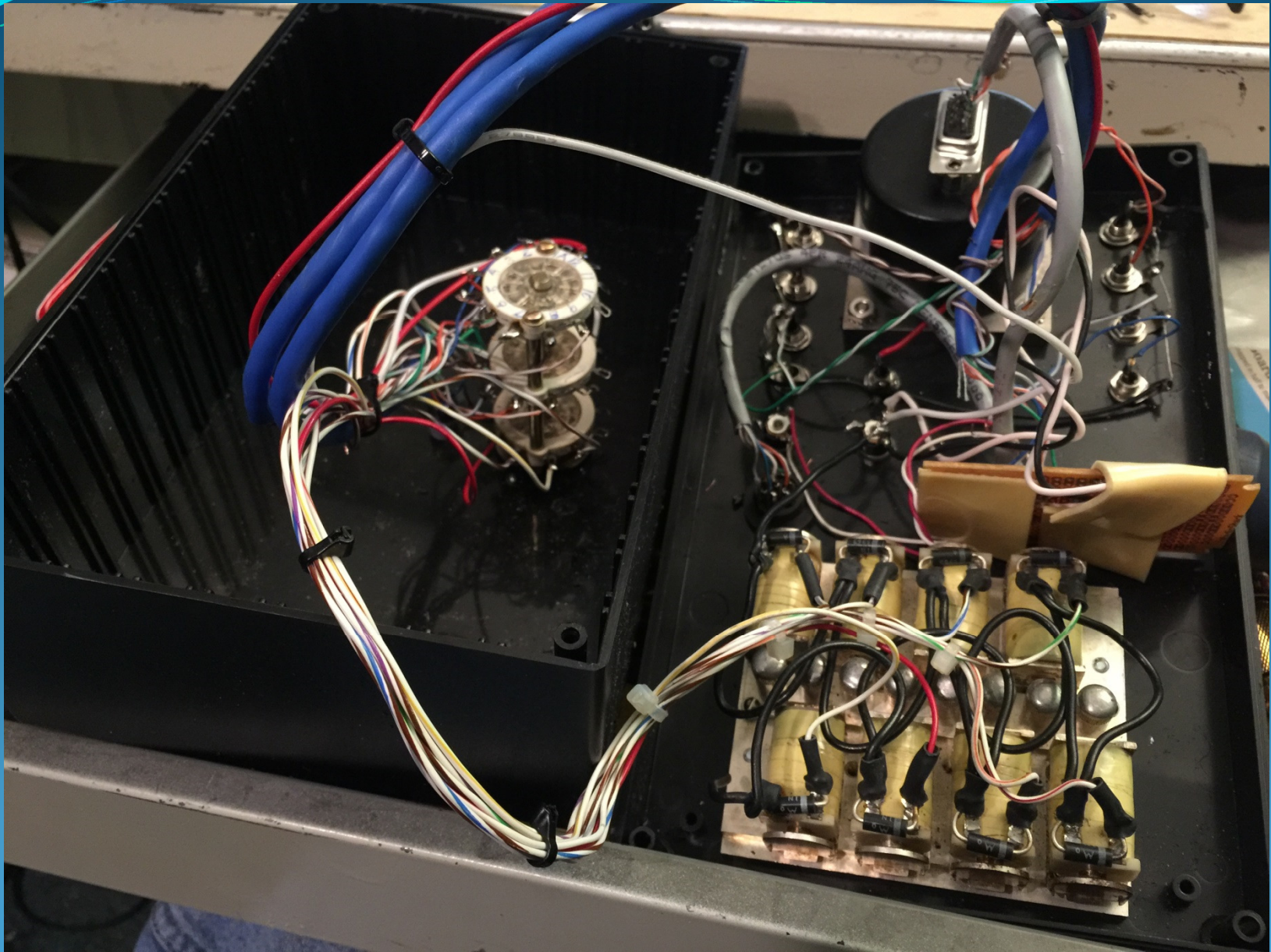




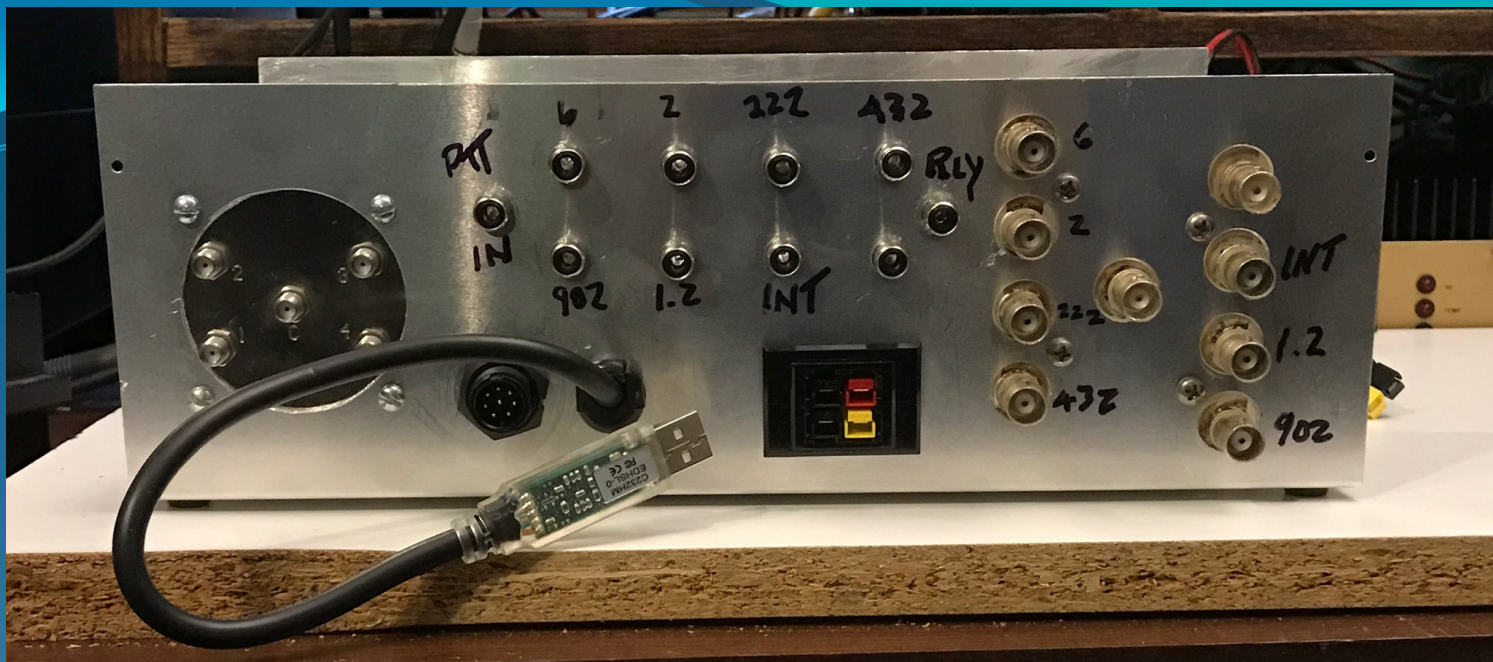












# Flex Radios Systems USB Configuration Interface

USB Cables

Name	Serial Number	Type	Enabled
New CAT Cable	FTB3OKOZ	CAT	Enabled
New BIT Cable	FTYI7D1G	Bit	Enabled

Edit Log Remove

USB Bit Cable New BIT Cable (FTYI7D1G) Edit

Name: New BIT Cable Serial Number: FTYI7D1G Cable Type: Bit

Pin	Enabled	Polarity	Source	Trigger	PTT, Delay (ms)
0:	Enabled	Active High	Active Slice	Band	PTT Off PTT: 0 TX: 0
1:	Enabled	Active High	Active Slice	Band	PTT Off PTT: 0 TX: 0
2:	Enabled	Active High	Active Slice	Band	PTT Off PTT: 0 TX: 0
3:	Enabled	Active High	Active Slice	Band	PTT Off PTT: 0 TX: 0
4:	Enabled	Active High	Active Slice	Band	PTT Off PTT: 0 TX: 0
5:	Enabled	Active High	Active Slice	Band	PTT Off PTT: 0 TX: 0
6:	Enabled	Active High	Active Slice	Band	PTT Off PTT: 0 TX: 0
7:	Enabled	Active High	Active Slice	Band	PTT Off PTT: 0 TX: 0











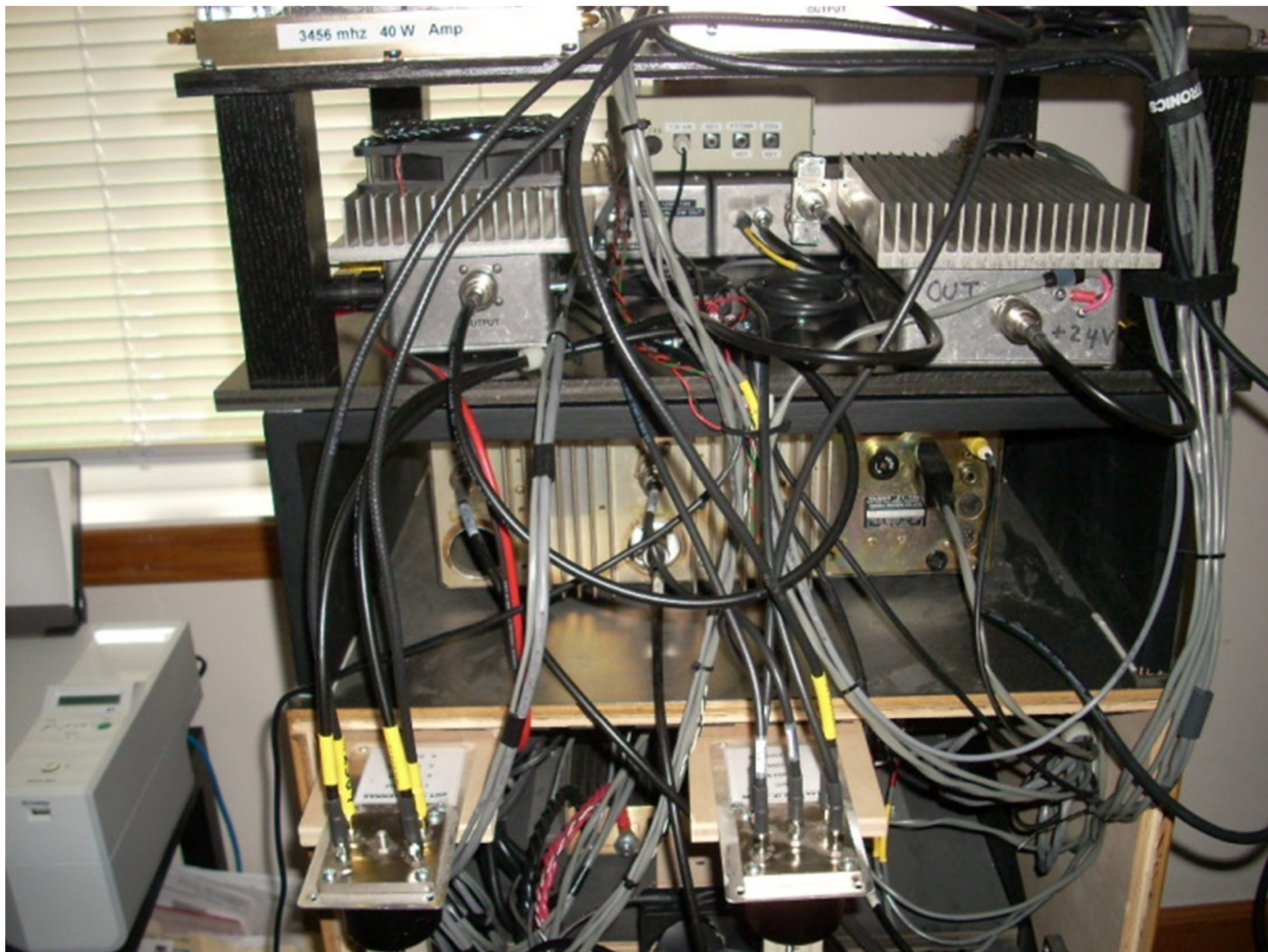








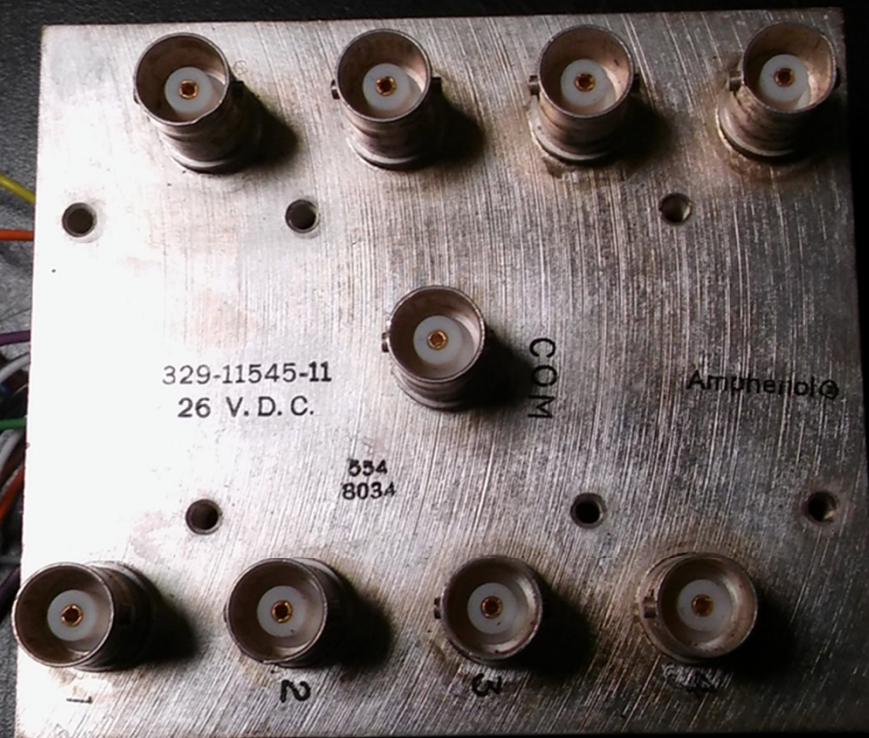




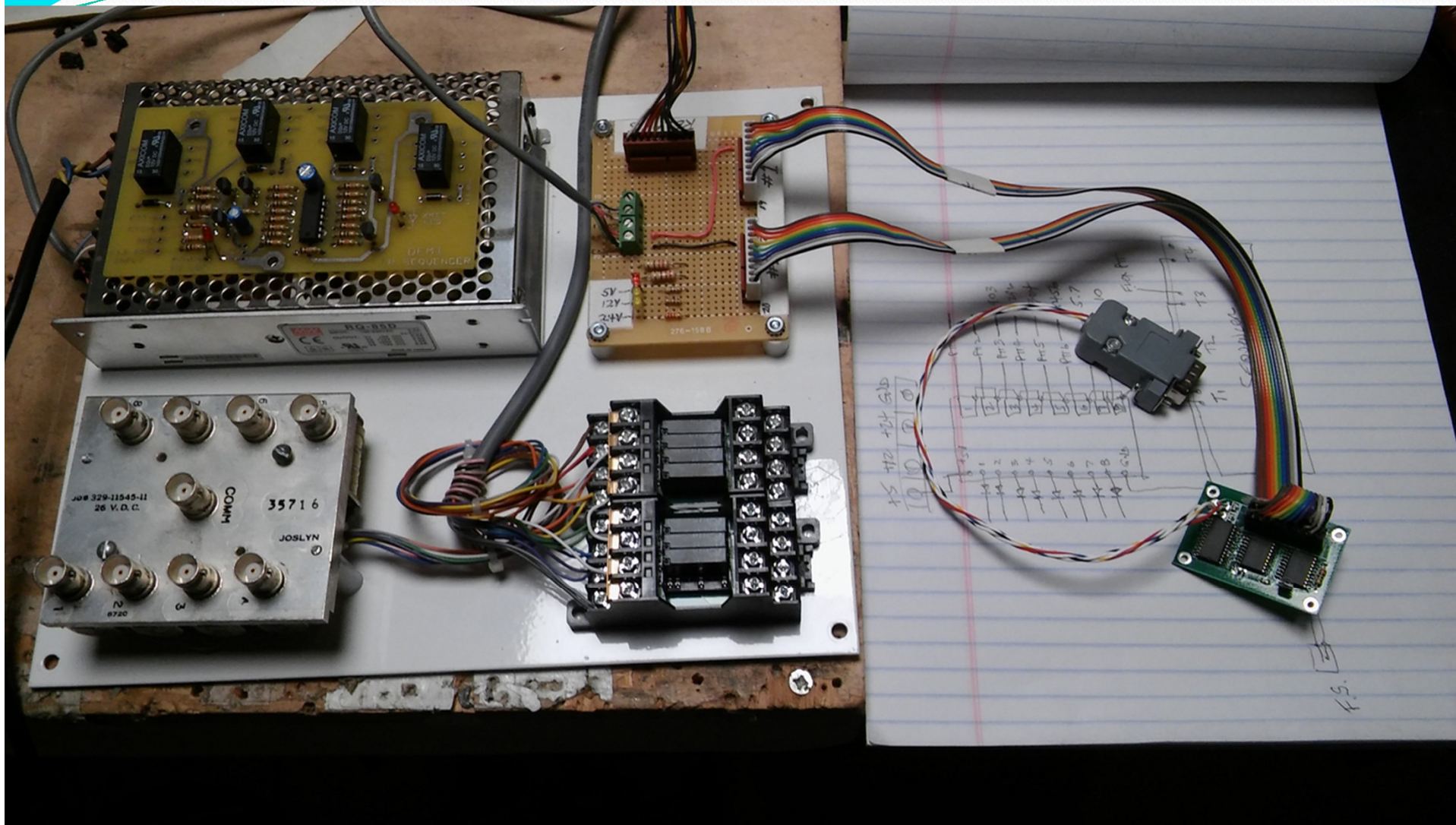




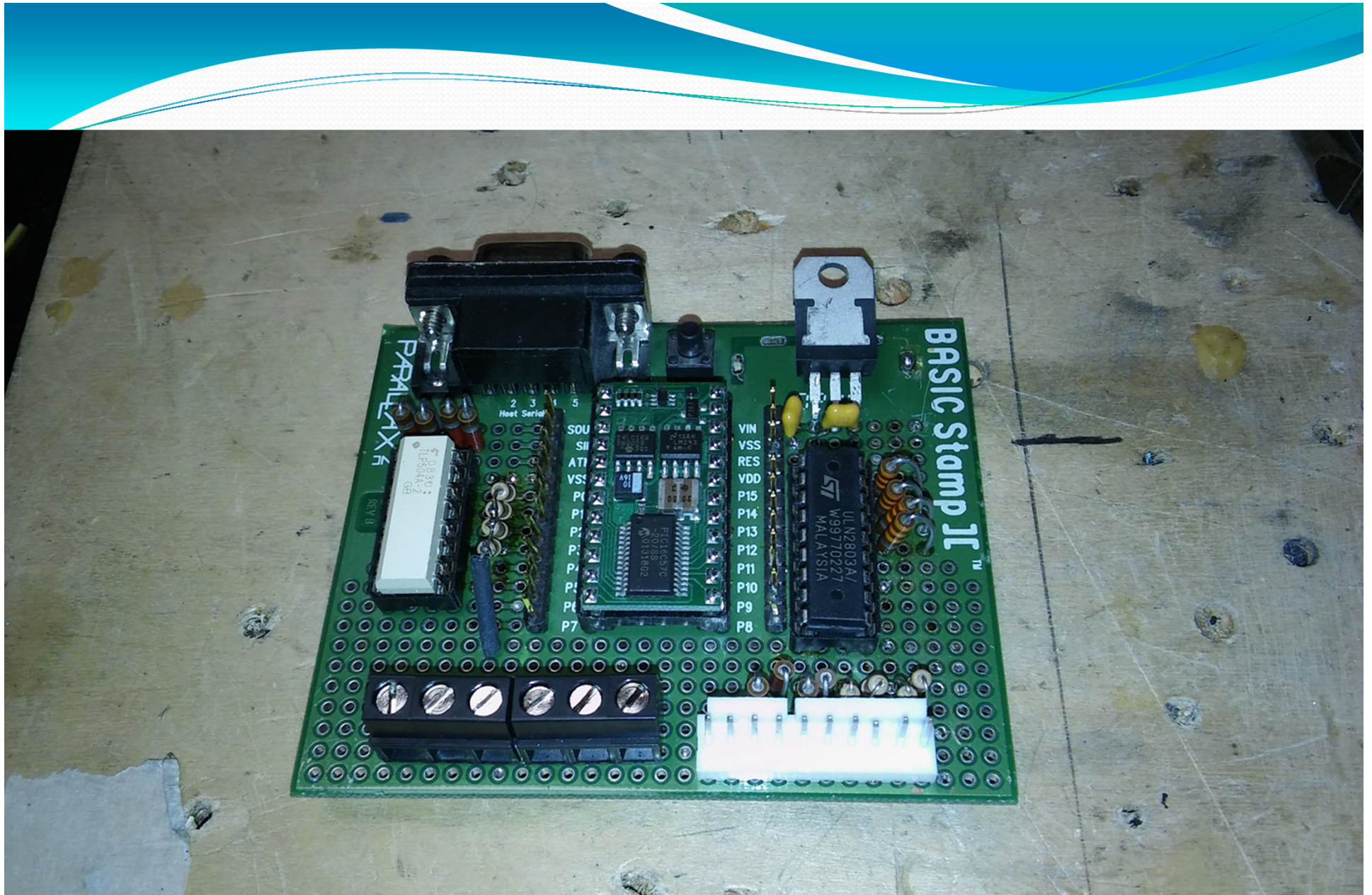


















A **MHz** CH B F C ENT D T CALL

DOWN UP

CHANNEL

SHIFT NOTCH

MONITOR

BEACON

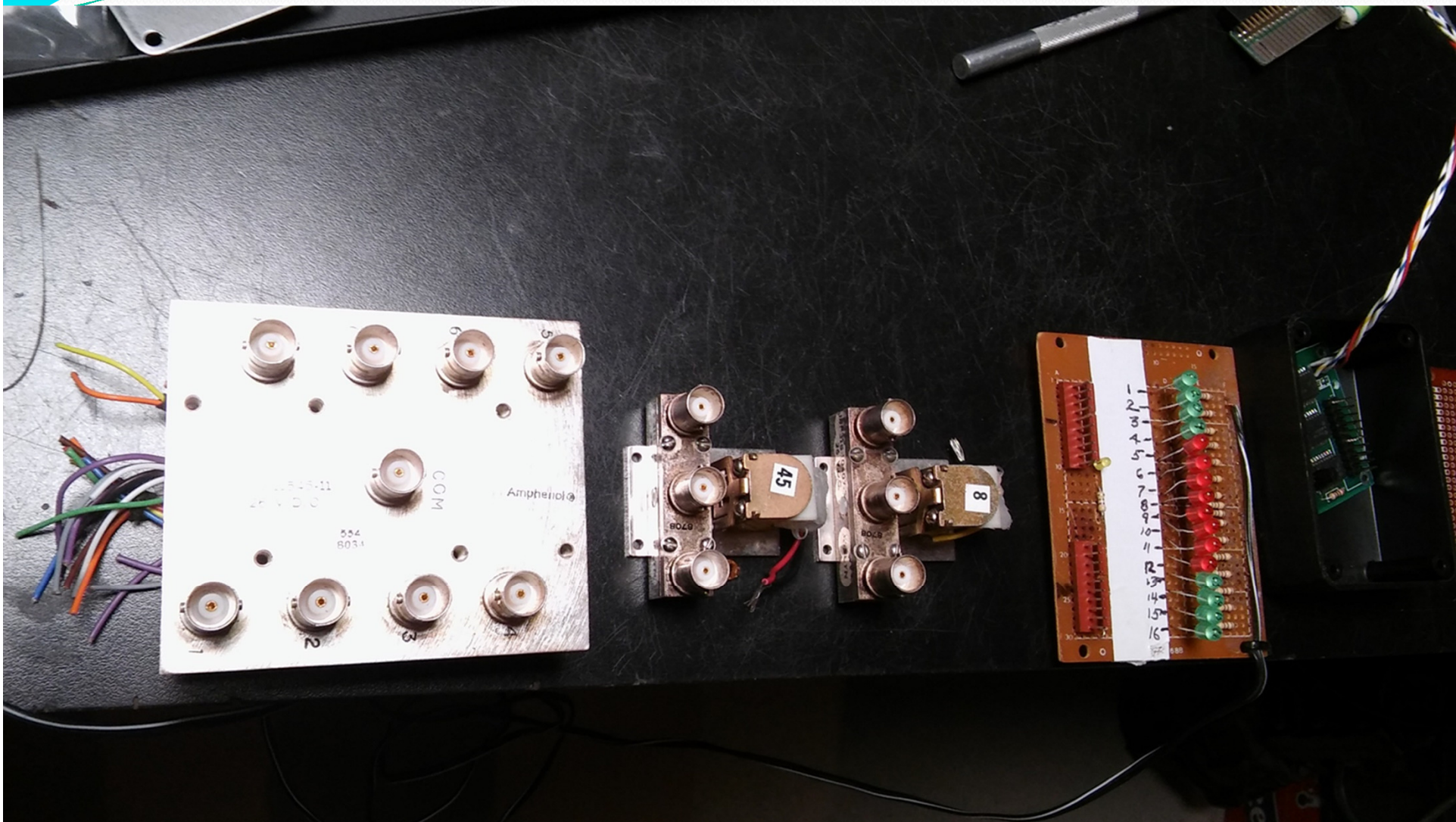
BAND

FREQ.

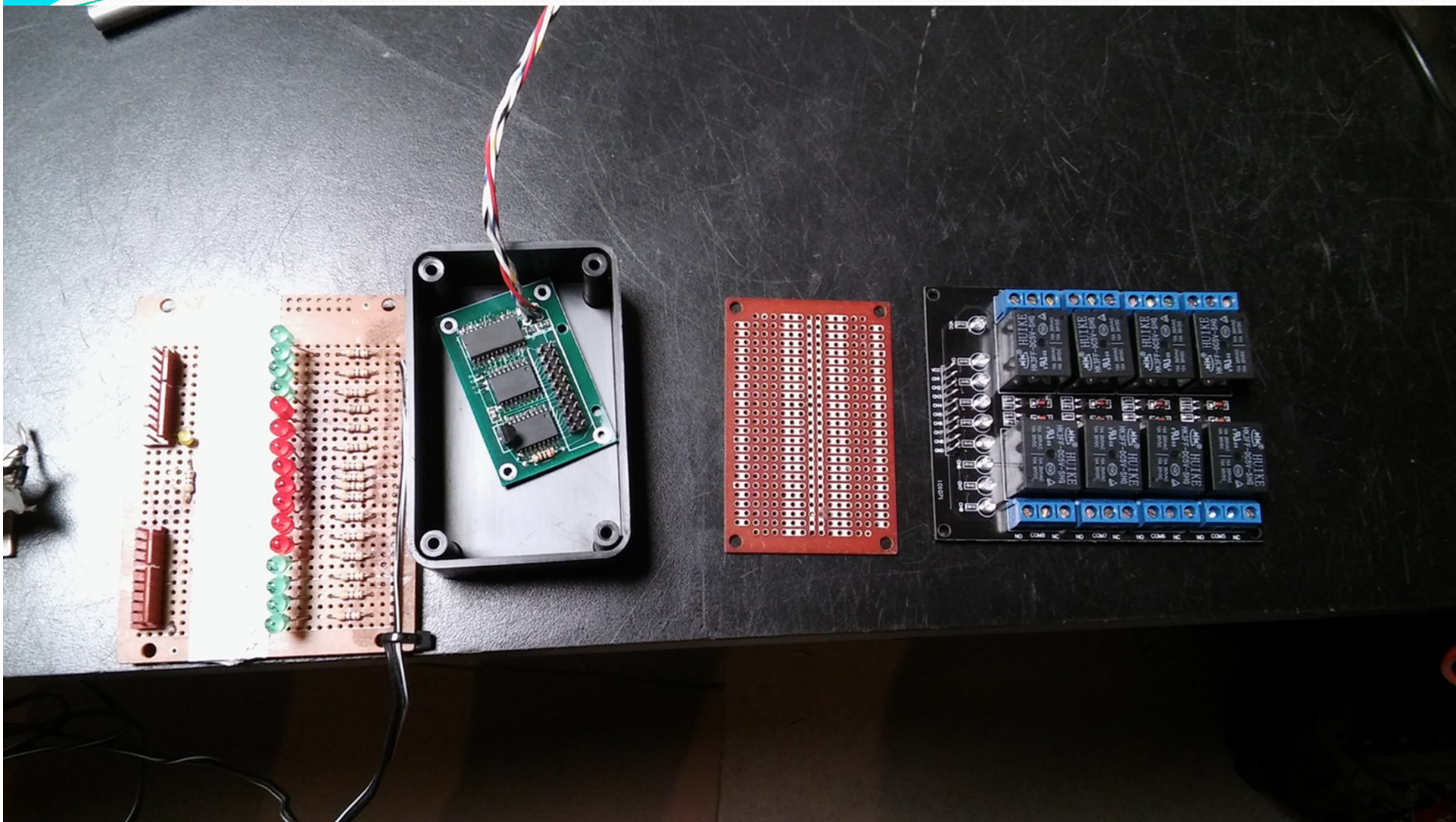
RA DIAL

50 mhz.....	50.080.....	50.080
144 mhz.....	144.284.....	144.284
222 mhz.....	222.065.....	222.064 _ + 0khz _
432 mhz.....	432.295.....	432.289 _ + 0 khz _
903 mhz.....	903.072.....	145.074 _ +0.8 khz _
1296 mhz.....	1296.244.....	144.245 <u>-4</u> 2 khz _
2304 mhz.....	2304.042.....	144.056 <u>+19</u> +16khz _
3456 mhz.....	3456.201.....	144.201 <u>+4</u> khz _

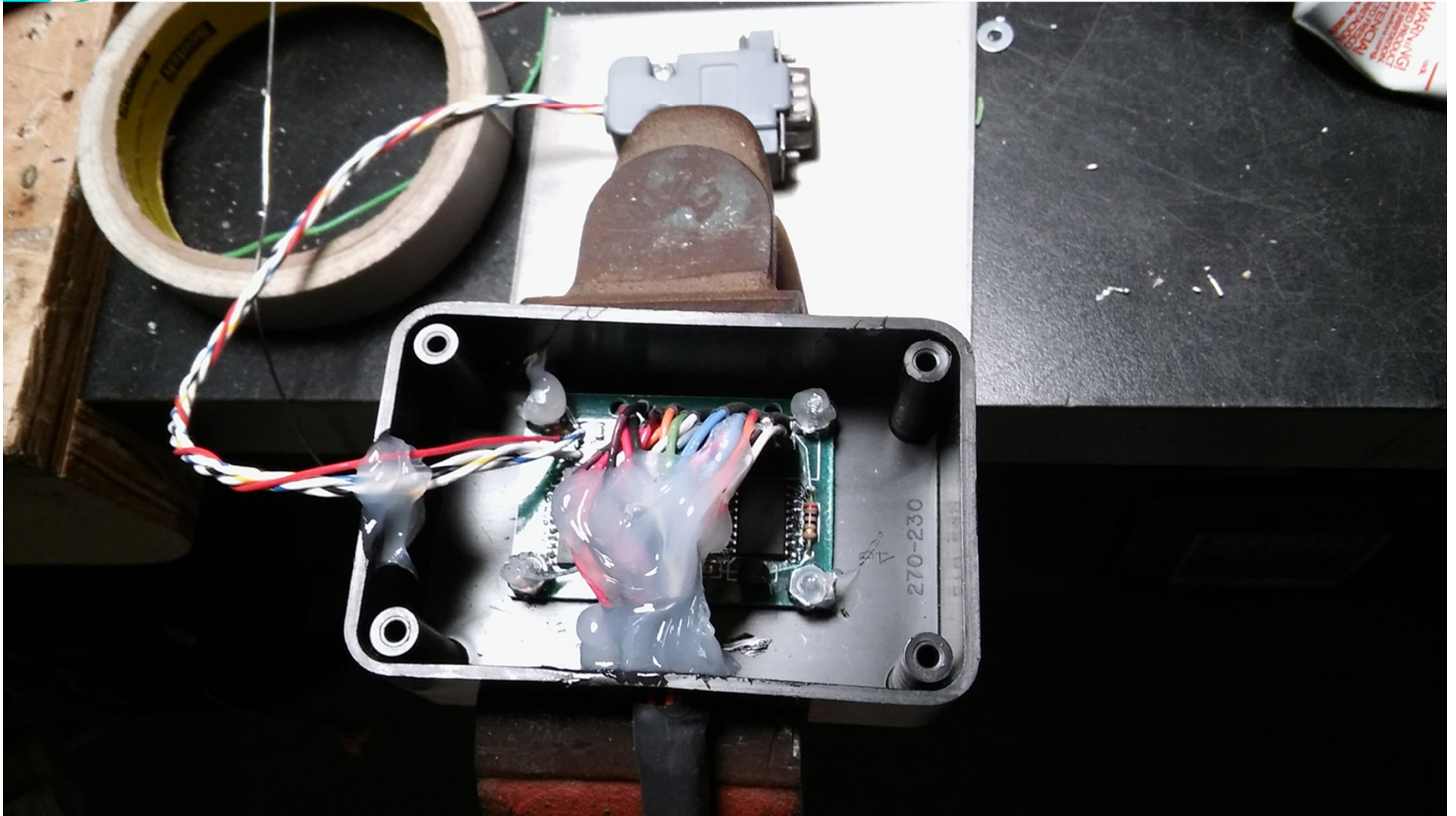




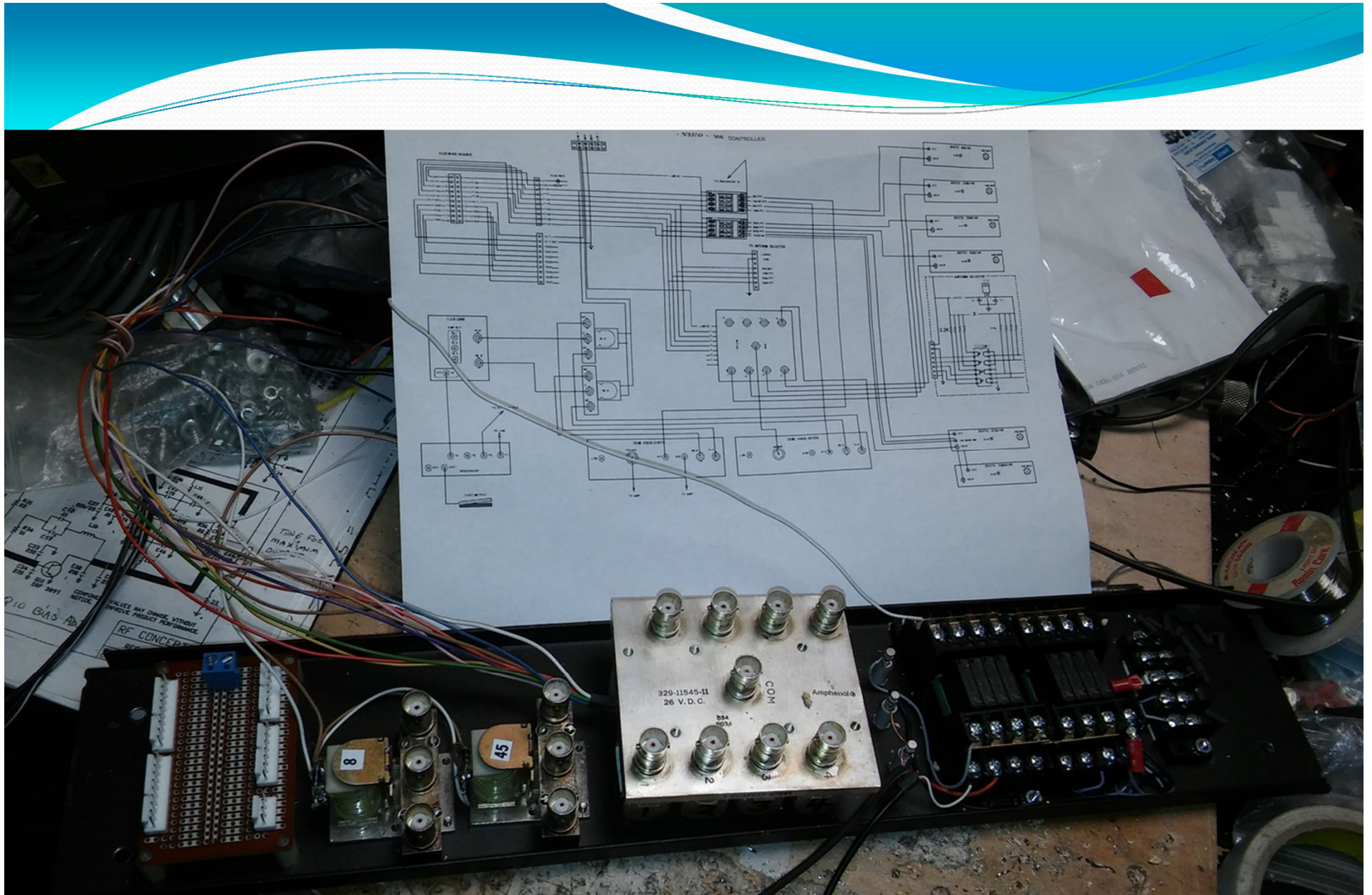




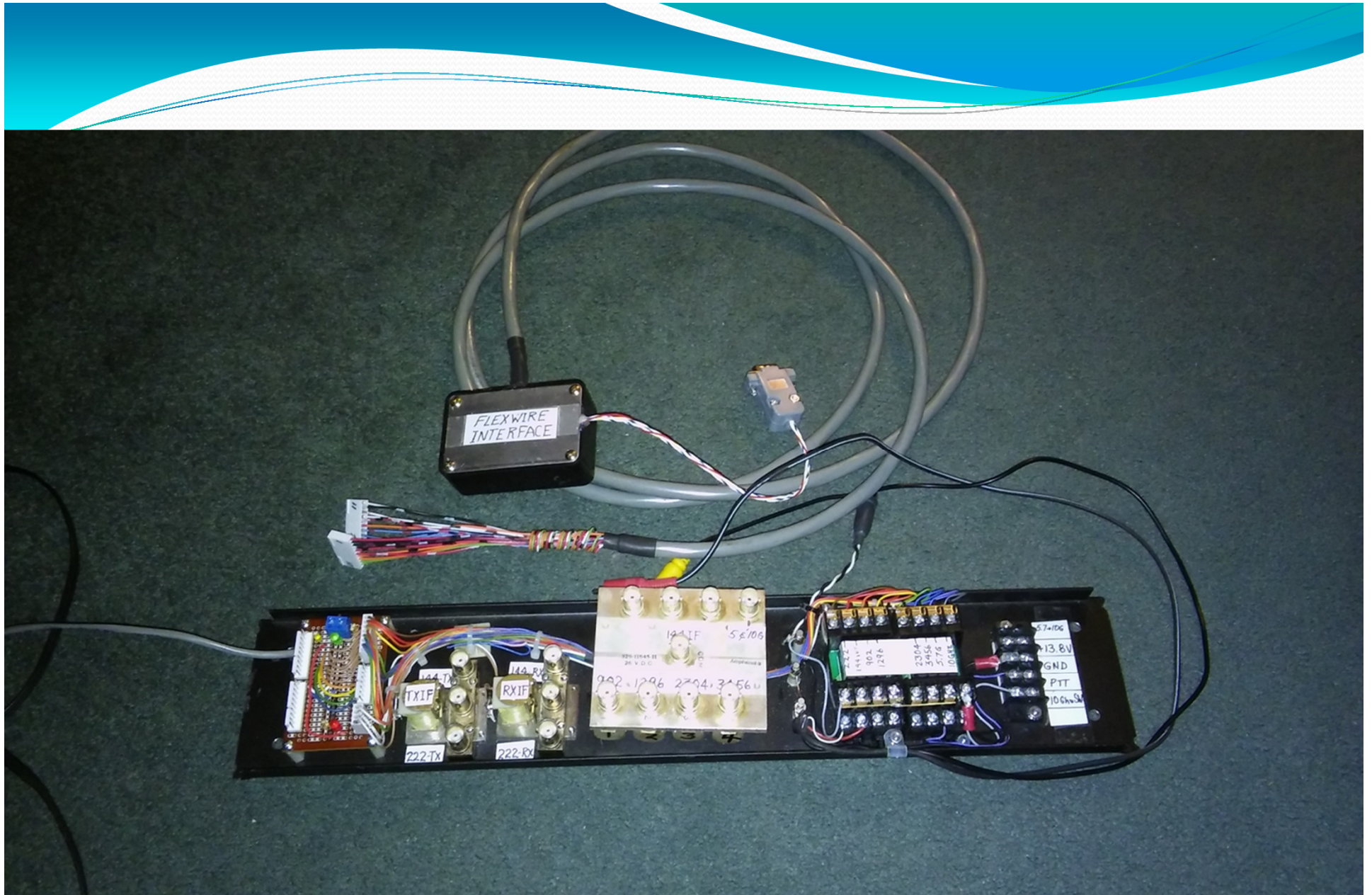












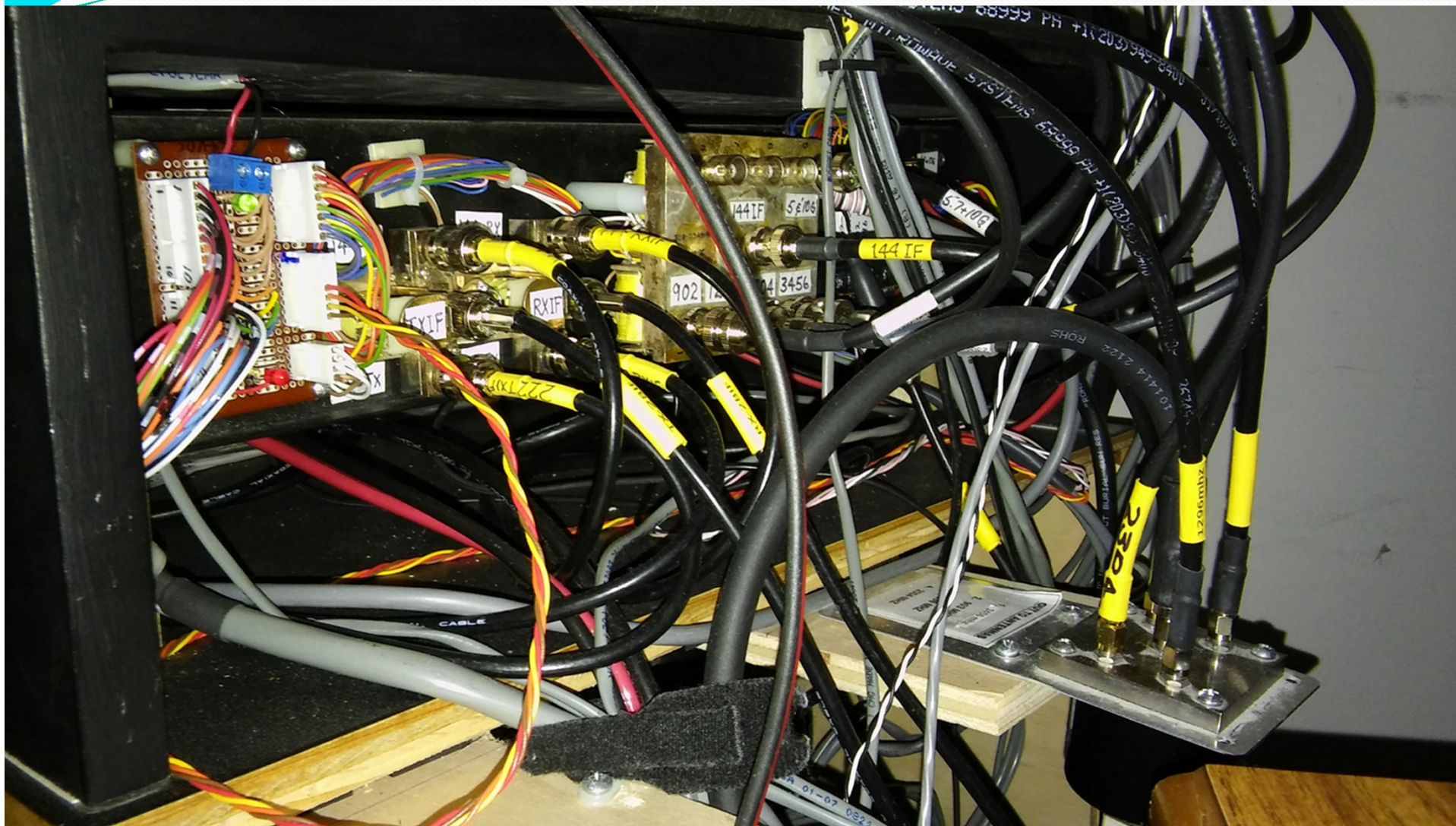






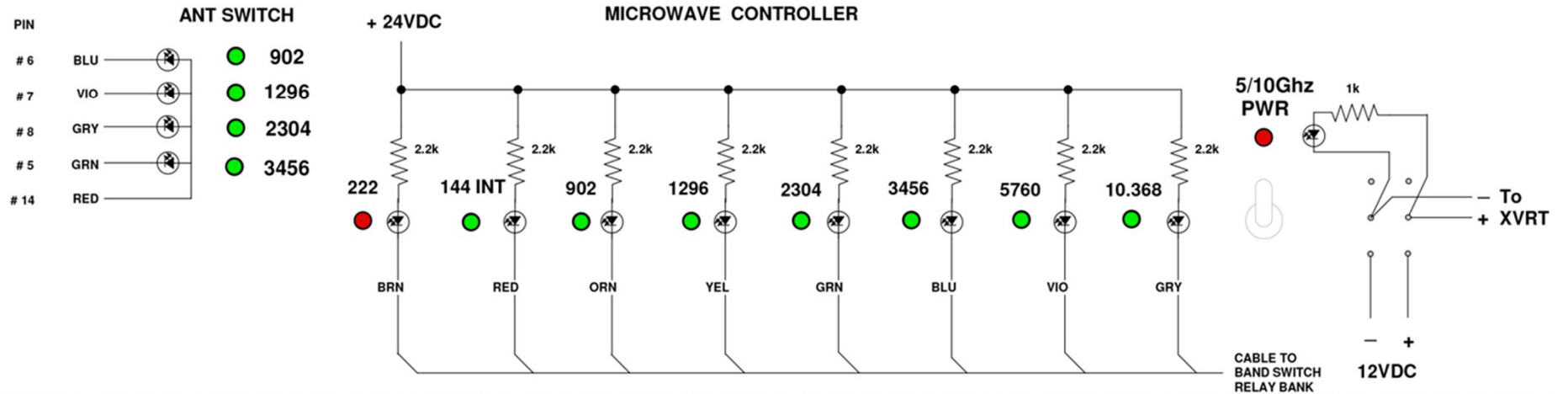
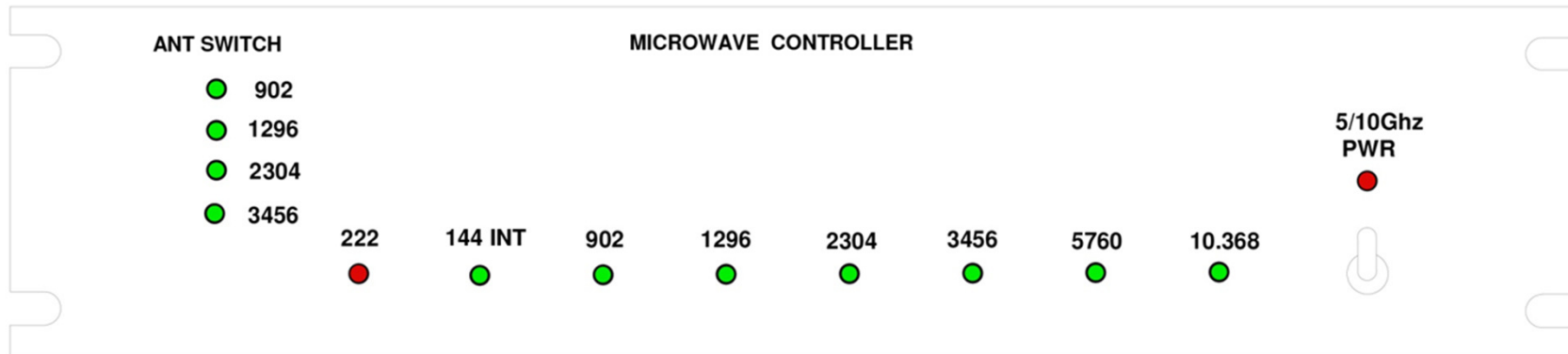








## N3RG MICROWAVE CONTROLLER II

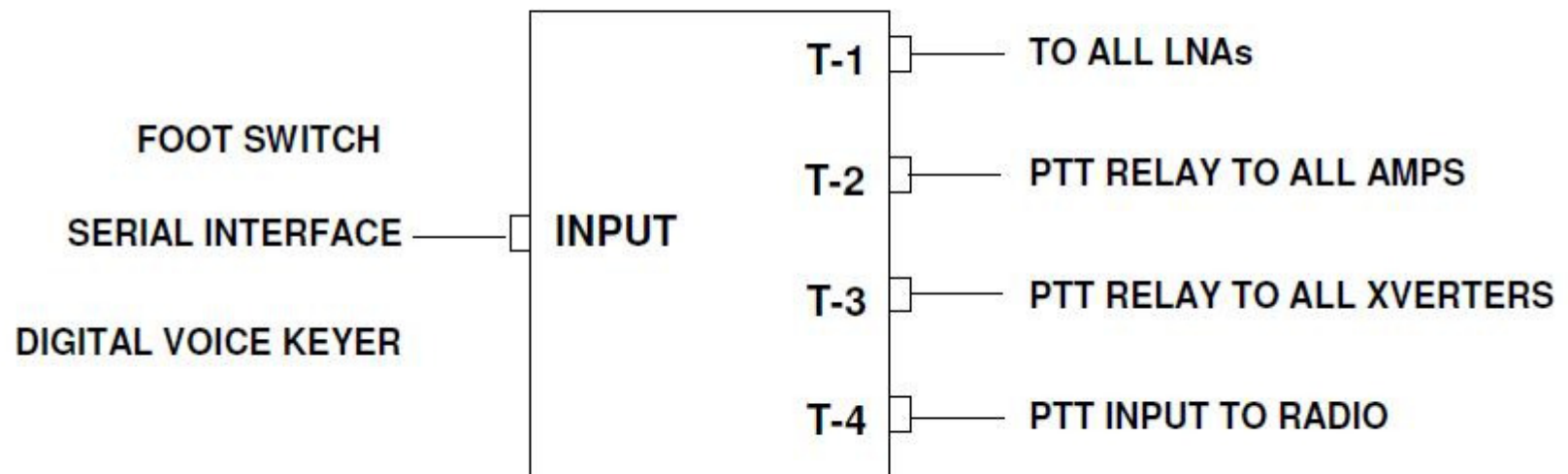






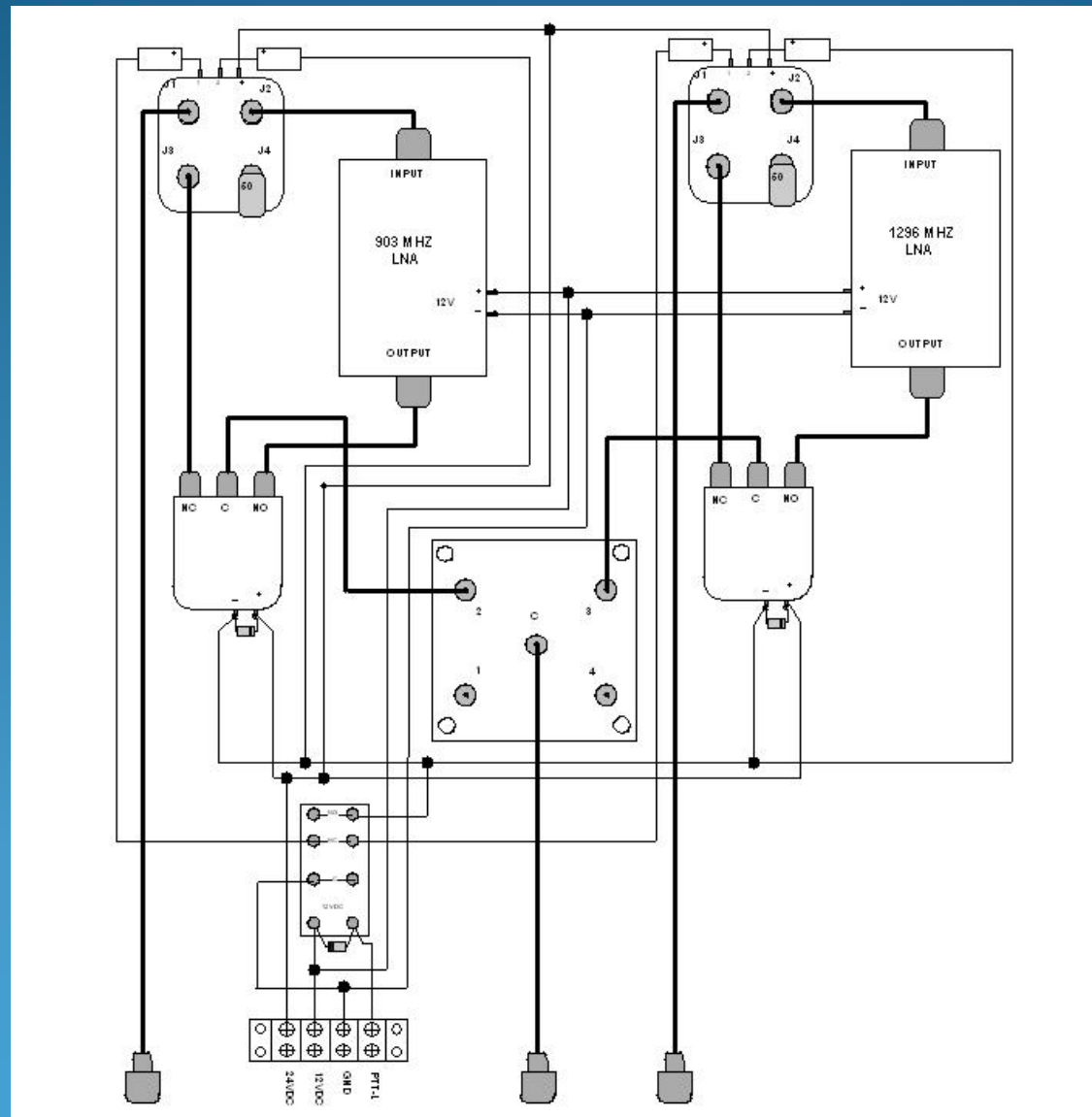


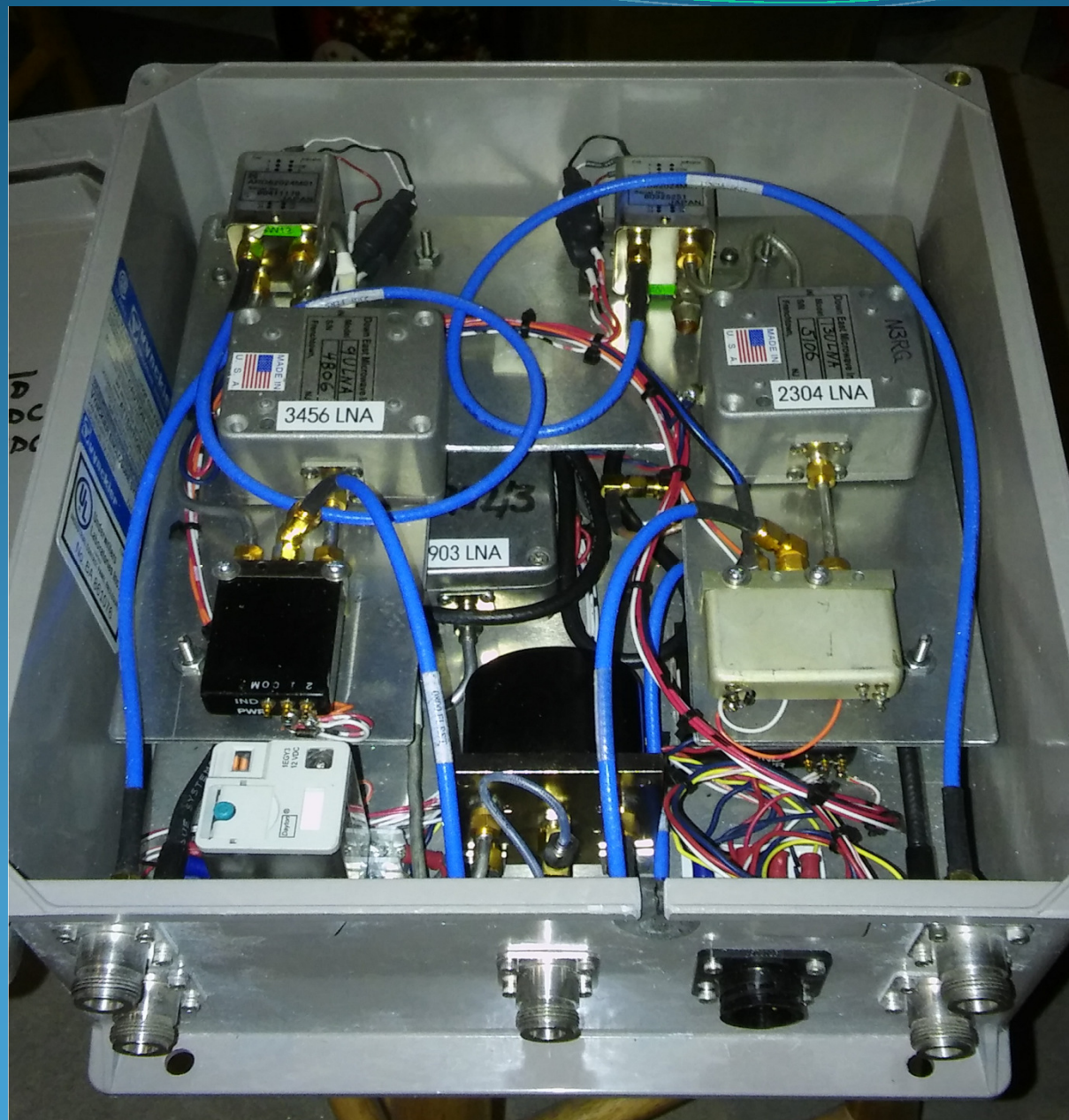
## SEQUENCER





# Same setup for all LNAs

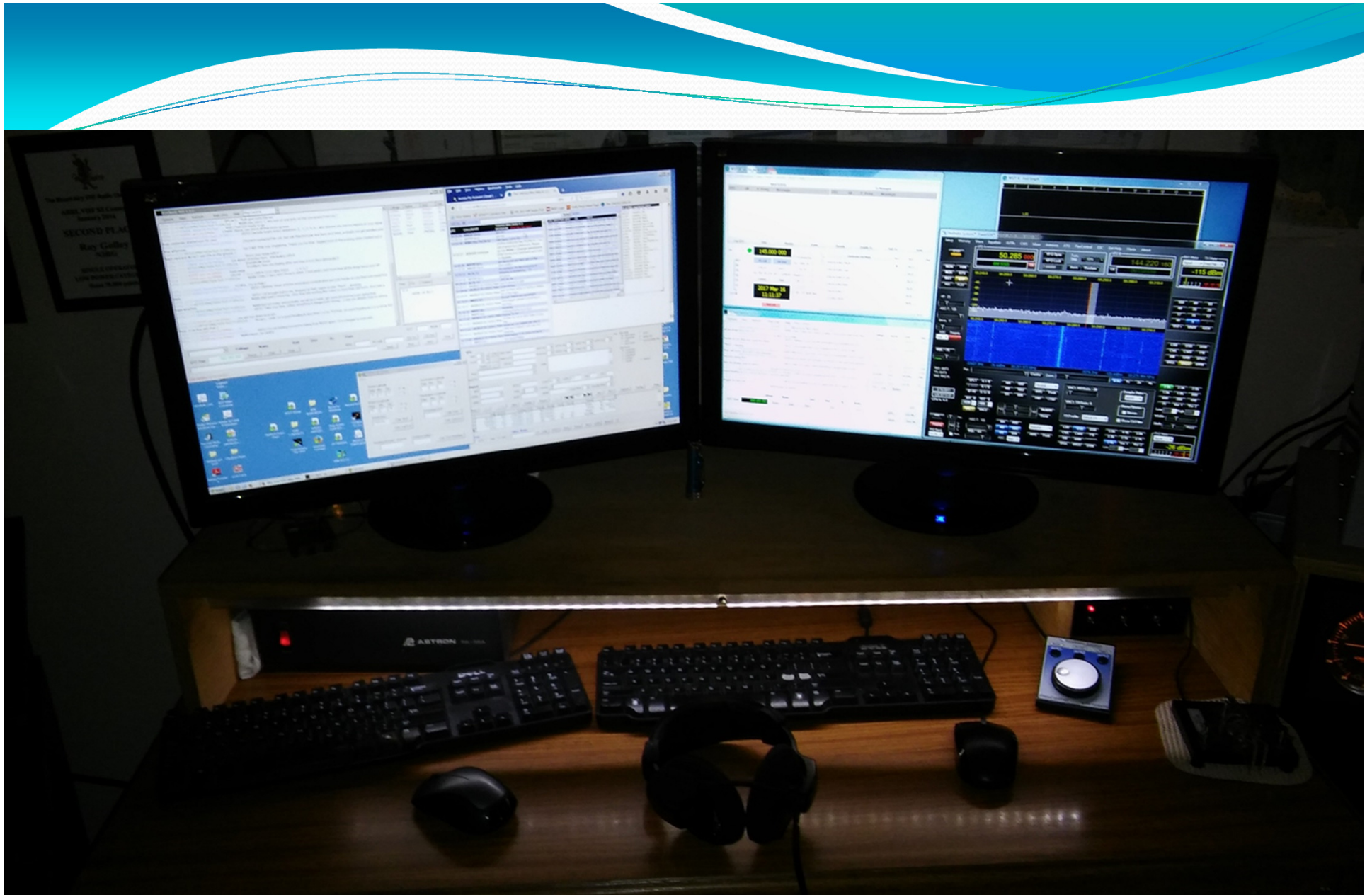




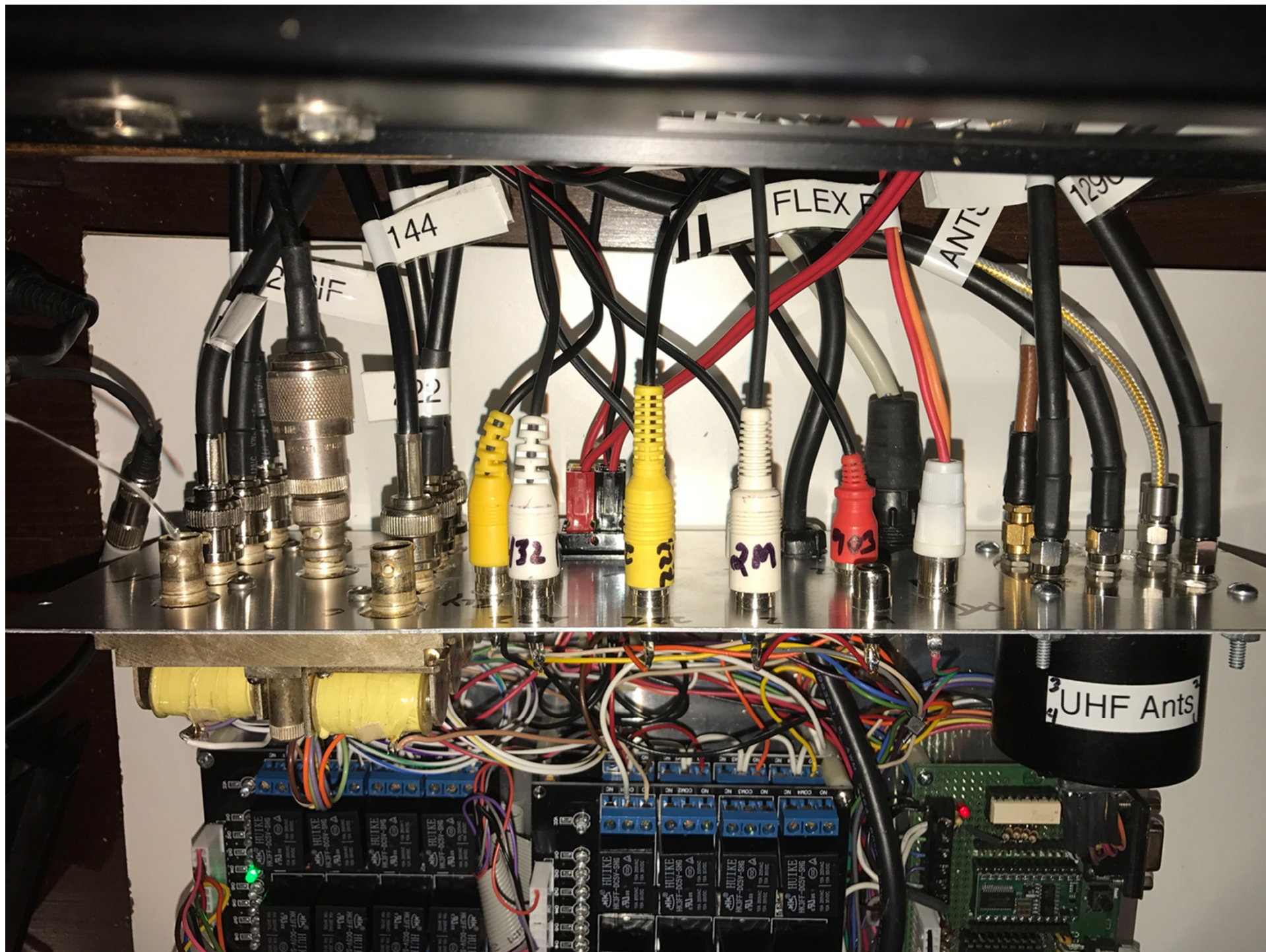




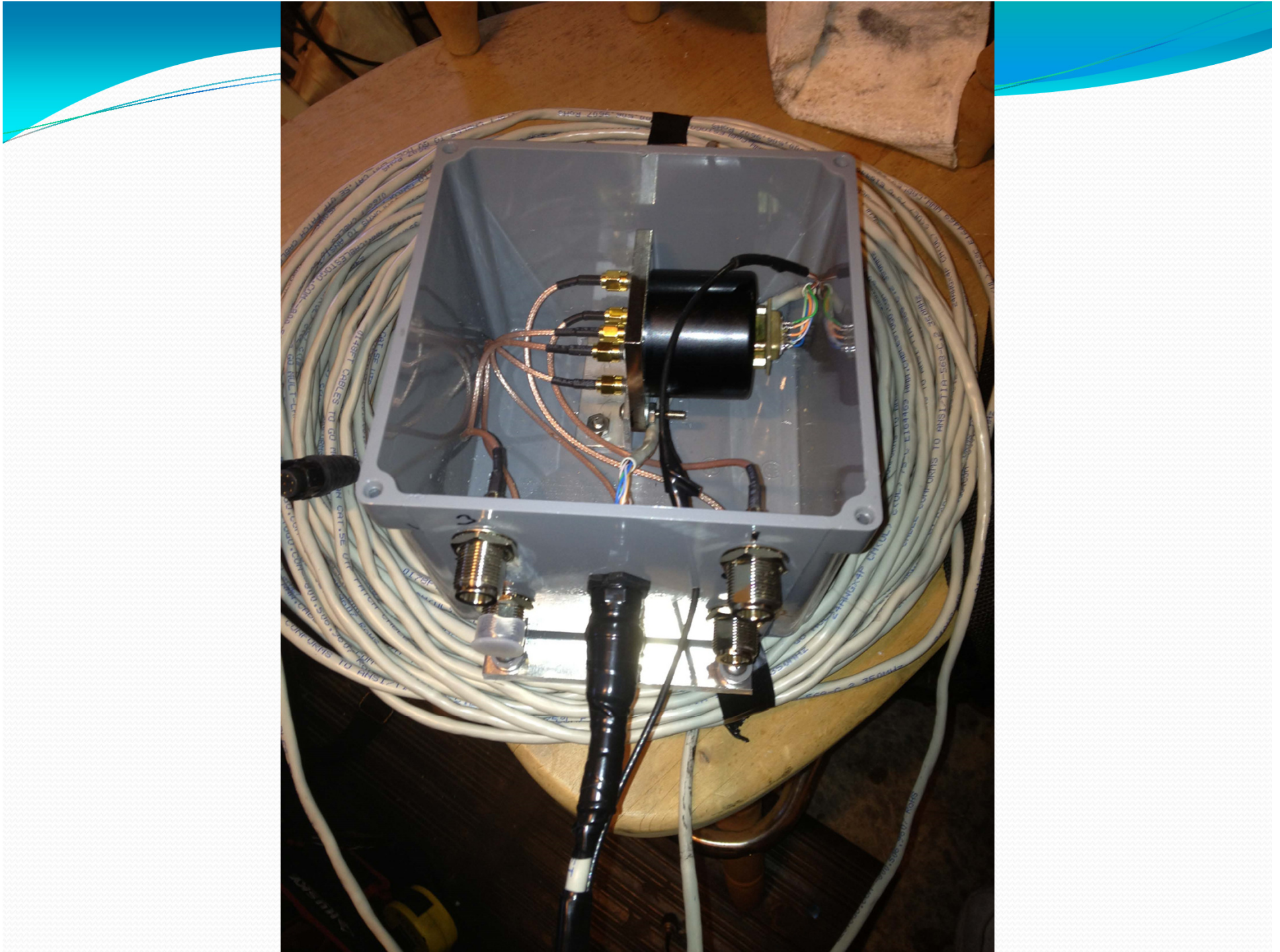



























### IF Xvtr Relay

6M			903
2M			1296
222			2304
432			3456
			(Fut)

  
LNA  


  
24v  


### Ant Relay

	903
	1296
	2304
	3456

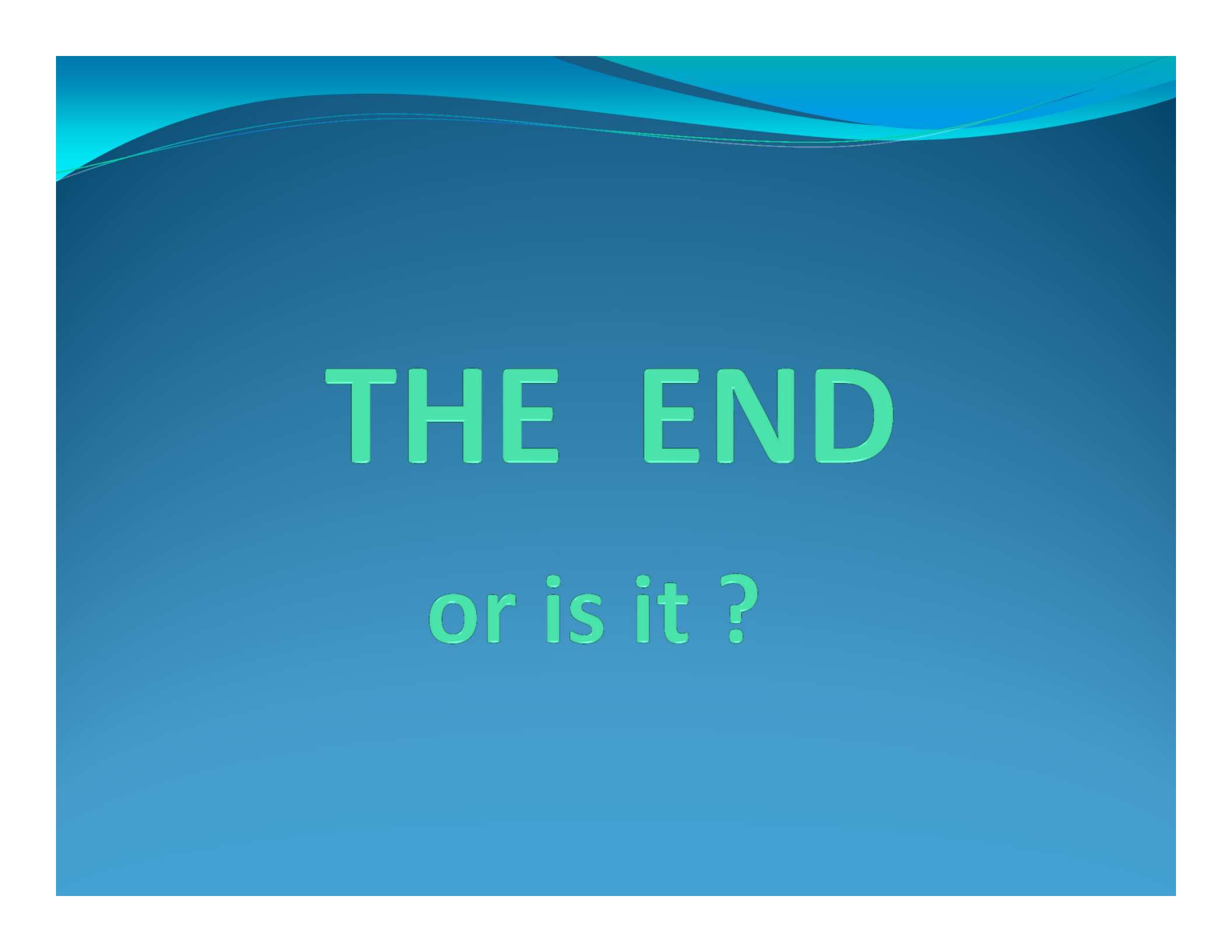






# Another example at K1RZ



The background is a solid blue color with a gradient. At the top, there are several wavy, horizontal lines in shades of blue and cyan, creating a sense of movement or a horizon line. The rest of the background is a uniform medium blue.

# THE END

or is it ?