

10 Band Rover Control Box

44TH EASTERN VHF/UHF/MICROWAVE CONFERENCE

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Some have great locations....



And some have to rove



Why Be a Rover?

- Ham radio + Outdoors
- Meet people, camaraderie, sun → activate grids
- You're wanted – '/R' brings you to top the pile!
- Opportunity to sell technology - STEM
 - Much more than Grandpa's Ham Radio
- Can start simply – and grow it through time
 - 1 - 4 bands – FM only or mixed modes
 - 5 + bands
- Sound interesting?
 - Rove with another ham
 - Just DO IT!

Perry Park, Lake Erie



Sunset Lake Erie



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 - 1 - 4 bands – FM only or mixed modes
 - 5 + bands
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 - Talk with rovers
 - Rove with another ham

Simple & Effective Start – 4 bands

- 4 bands - VHF: 50, 144, 222, 432 – use what you have!
- Antennas
 - FM: verticals
 - SSB/CW: Omni, Quad, MOXON, Quagi. Cheap!
- Antenna Switch needed – UHF rotary works fine
 - ‘Protect thy front end’
- Can operate in motion – but safer to stop
 - Distracted driving law restrictions
 - Logging
- If you have a V/UHF rig, you can rove!

Considerations for '10 Bands'

- What is my objective in 10 band roving? Outcomes desired?
- Vehicle: Van / Truck / SUV / car
- Playtime & Budget: 10 bands = 10 stations
- Rig / Transverter acquisition: Builder vs operator
- Power: RF & DC
- Frequency accuracy / stability
- Antennas: Mounting / type / pointing
- Control system: ~5 signals – band, IF, LO, PTT, Feedback
- K0BAK: *'For rovers, everything is a compromise.'*
 - Beware of analysis – paralysis! Just DO IT!

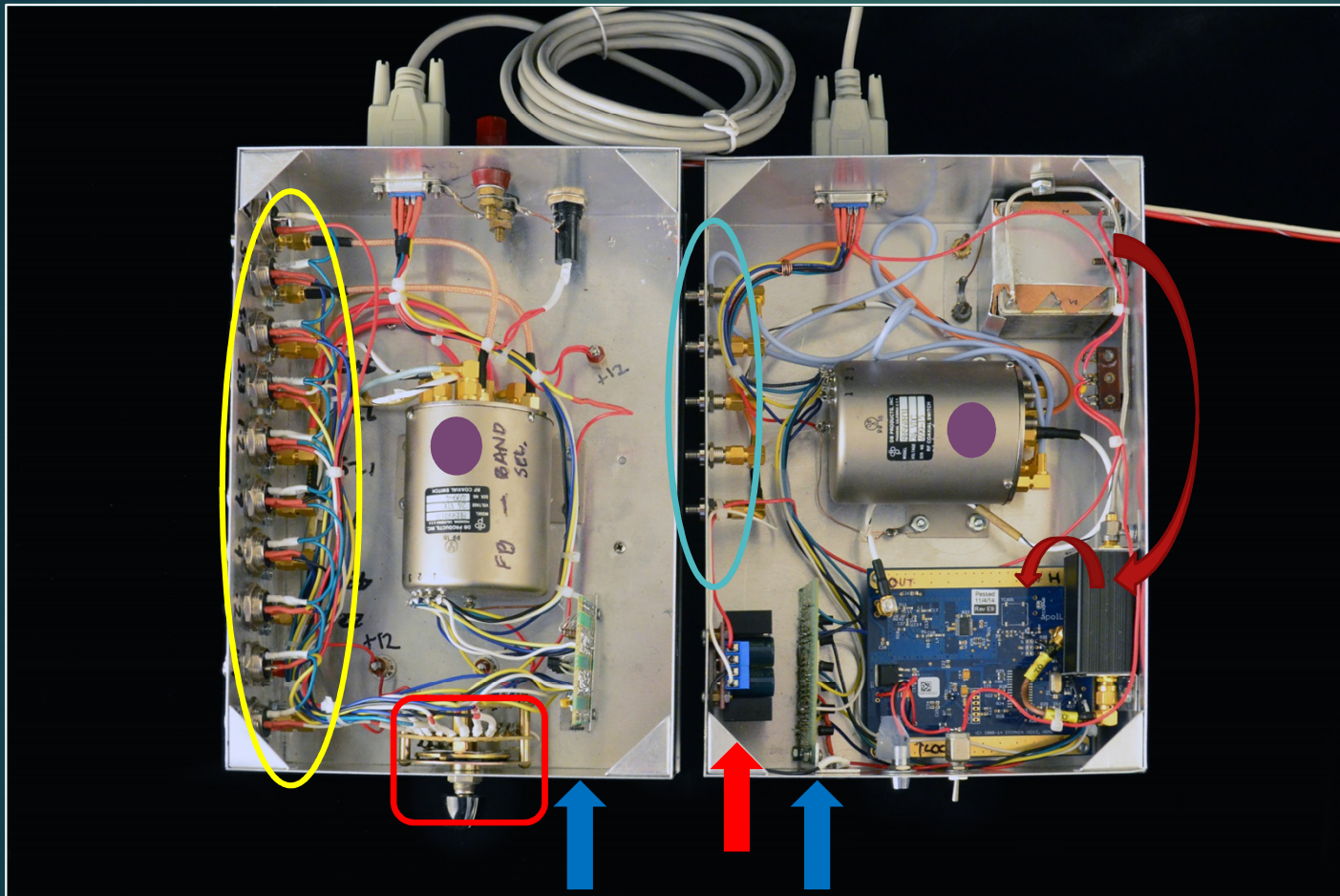
The Box


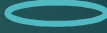







Considerations: Building the Box

- Passenger car. No roof rack nor hitch. ☹
- Change bands quickly -- < 30 seconds : logging?
- # bands: 10 less 144, 5760, 10368
- Transverter/Power: W1GHZ boards; Pout: 50+ except \$\$\$ bands
- LNA protection: LNA = \$\$\$. Spend \$ to protect.
- Local oscillator: centralized A32 with Morion OCXO
 - Accuracy / Stability -- SSB/CW vs. FT-8
- IF rig (FT817) control: bands, frequencies, Pout
- Sequencing: at the transverter. Feedback -> 'done'
- Logging / integration: I'net - sporadic coverage ☹
 - N3FJP instead of N1MM, ON4KST
- Reliability vs. complexity: Wires / computers complex

Inside the Box



-  PTT, Band, FB
IF hidden below
-  LO output
-  2 x 8P coax switch
-  Band switch
-  Logic boards
-  12 -> 24 V booster
-  LO chain

Considerations: The Box as Built

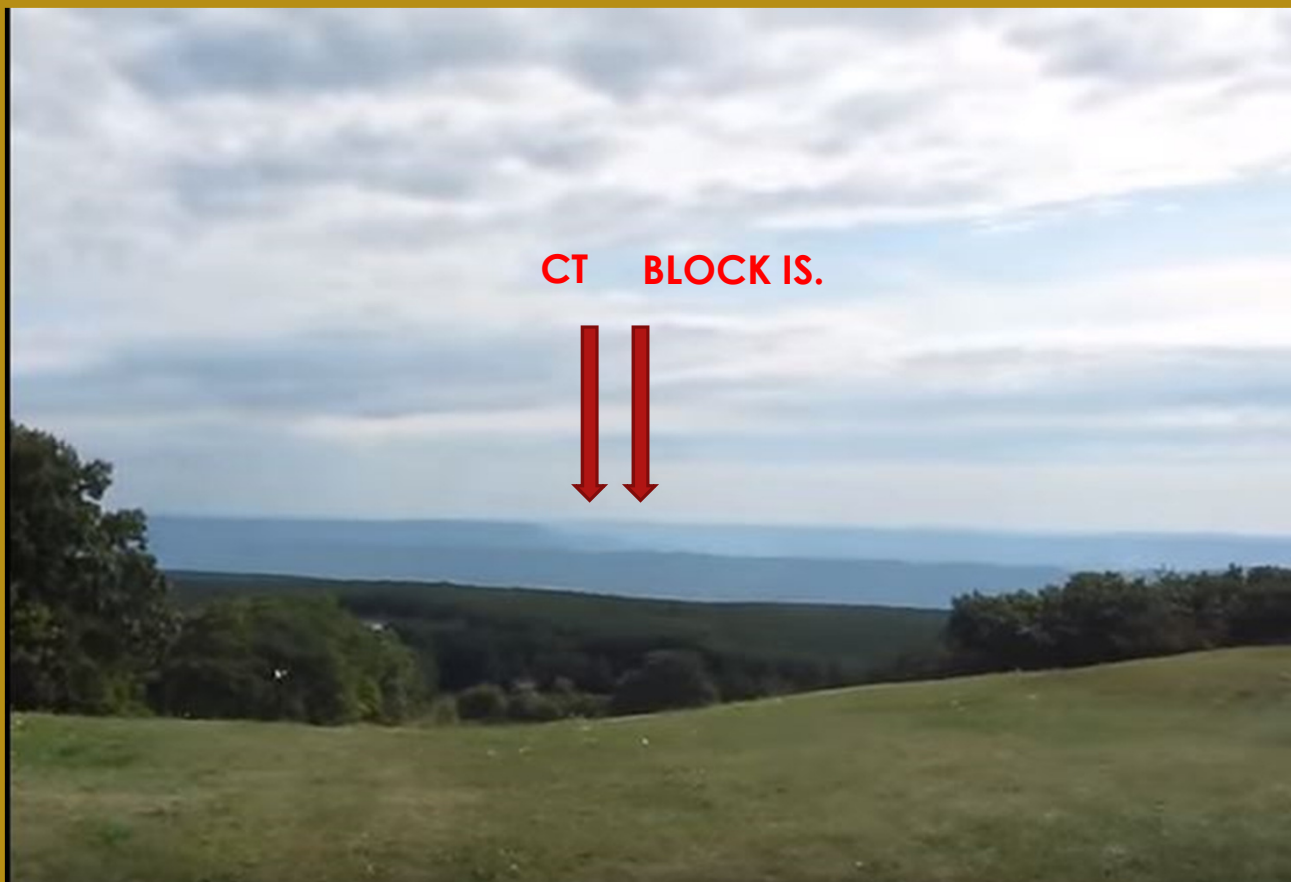
Yellow = Done

- Change bands quickly -- < 30 seconds : logging problem
- # bands: 10 less 144, 5760, 10368
- Transverter Power: 50+ except \$\$\$ bands
- LNA protection: LNA = \$\$
- Local oscillator: generally centralized / few decentralized
 - Accuracy – on frequency
 - Stability: SSB/CW vs. FT8
- IF rig (FT817) control: IF freqs, drive power: manually FT817
- Sequencing: at the transverter. Feedback final step done.
- Logging integration: internet - sporadic coverage
 - N3FJP instead of N1MM, ON4KST ☹ - Home stations: call CQ!
- RELIABILITY vs. complexity: Switch & Wires / computers problematic
- Built for change: can add a 7"x10" box third level

Let's Do It

- Talk to a ham that roves. Look at the setup.
- Accompany a rover.
- Use your existing VHF/UHF rigs – 1 gets you started!
- If you rove already, how about adding a band?
- Search internet for 'ham radio rove'. Lots of content.
 - K0BAK, W1GHZ, K8GP, KA2LIM, N6NB, K0NR
 - ARRL contest rules. Sprints. MADs.
- Roving is a journey, not a destination
 - ALWAYS something to learn / improve
 - 10 bands is 91% of 11; 83% of 12

73 & See 'Yinz' on VHF, 222UP & 10UP !



de FN00rg
&
W2RMA/R

