

Remote HF Radio at KT5U

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KT5U

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Outline

- Who Am I
- Why Remote Anyway?
- Requirements – Must Haves / Like to Haves
- Hardware and Software Apps
- Current Block Diagram
- Operation Sequence
- Ideas I've found useful for Remoting

Who Am I – KT5U

- Ham for 58 years
- Rag Chewer (mostly DX), Non-Contester, Awards ok, but not a priority for me
- Mostly 80m – 10m, some VHF, UHF, Sat
- Remote Ops, experimenter, remote controls, Antennas, Mobile HF, Int'l friendships
- Modes: SSB, FT-8, CW, and occasional digital



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Why Remote Anyway?

- You don't have to carry transceivers, antennas, and batteries around on airplanes, in cars, etc
- You can probably get by with just a tablet or laptop
- Use the station you've already bought ... and already perfected!
- Today's remote user interface is virtually as good as what you have at home
- Fast internets are usually not required. Internet access is worldwide!
- No reciprocal licensing requirements for international !
- Now ... there's lots of good information, elmers, and interfaces available
- Simple building of any needed interfaces, relay switching, etc., is a lot of fun. It doesn't take a rocket scientist, only small amount of systems engineering!

My Remote Requirements

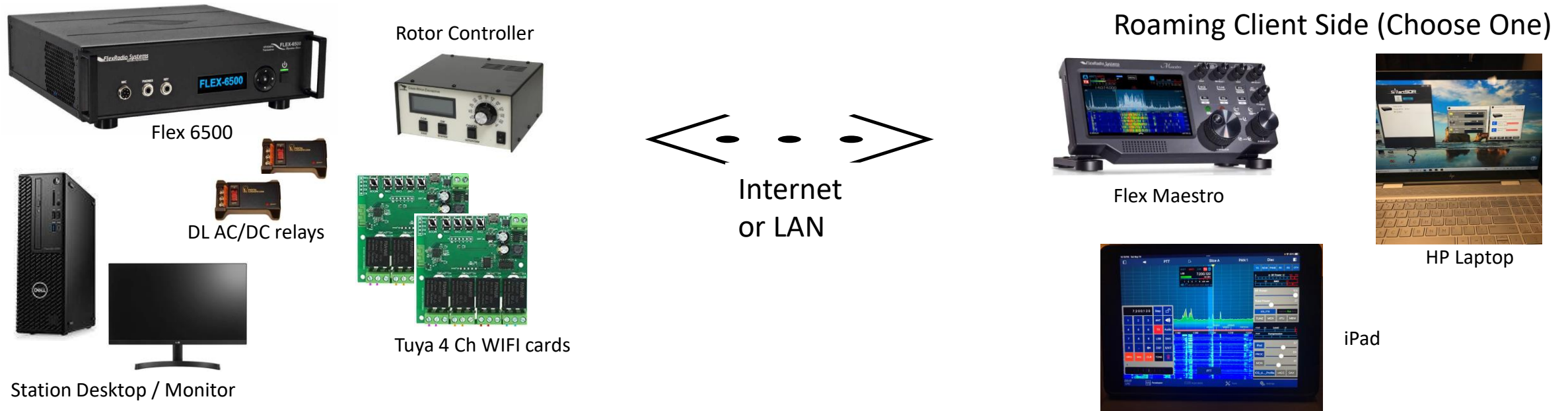
- Must Haves :

- ✓ Ease of Use, not complicated, less apps the better!
- ✓ Maximized flexibility w/ multiple clients (iPad, laptop, Maestro)
- ✓ Minimal hardware to lug around – laptop? better yet ... iPad (my Maestro too big)
- ✓ Modes: SSB, FT-8, some CW, other digital
- ✓ Reliable, easy to build and troubleshoot, inexpensive, visual indicators
- ✓ Connect/disconnect/ground antennas and rig when not in use
- ✓ Turn the rig on/off remotely

- Like to Haves:

- ✓ Simple logging for all remote contact modes
- ✓ Select any of 6 antennas or dummy load – remotely via internet
- ✓ Turn antenna stack remotely; visual confirmation (redundancy)
- Air gap antenna disconnection
- Restart station desktop computer remotely
- ✓ Situational Awareness - what's happening in shack (and around house) while away

Hardware and Software Apps



• Remote Base Site

- Flex 6500 (SmartSDR software)
- Flex Communications (SmartLink software)
- Tuya 4 channel relay bds x2 (Tuya link software)
- Dell Windows 7 desktop (Jump Remote Desktop)
- Rotator control (DXSuites - DXView) – RS232

• Roaming Client Site - Maestro, laptop, or iPad

- DL8MRE iOS - SmartSDR, SmartLink, integ toolset
- Jump Remote desktop app
- Tuya WIFI switch app (select antenna)
- Kasa Smart Plug app (Rig on/off -- Ant con/disc)

[illegible]

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Operation Sequence

1. Start Up:

- Start Flex 6500 and latch radio/antenna relays using smart plug with iPhone
- Open SmartLink on Client (iPad) – “VPNs” into 6500 (really DLS, TLS 1.3)
- Select any antenna with Tuya-based 4-position WIFI switches App on iPhone
- Turn antennas if needed - Jump App on iPad (or iPhone) to shack computer

2. Make Contacts.

- Logging is near automatic – just enter callsign/ save

3. Shutdown:

- Close SmartLink with iPad (or other client)
- Turn off Flex and ground radio/antennas if session if complete with iPhone
- Disconnect antenna with Tuya App on iPhone

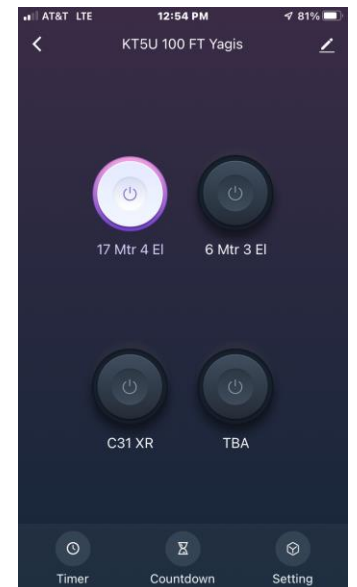
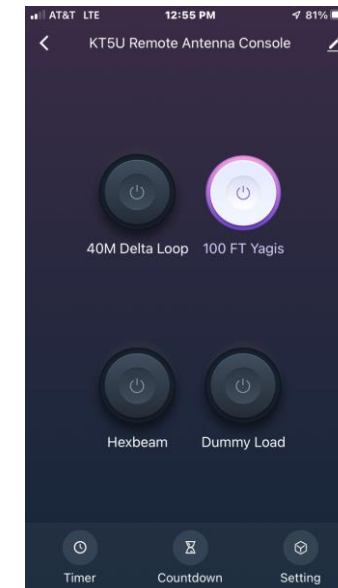
Features / Lessons Learned Useful for Remoting

- German ham Marcus Roskosch DL8MRE developed an amazing iOS version of SmartSDR for Flex 6xxx series radios, includes:
 - Logging, Band plan, FT-8, FT-8 Skimmer, DX cluster on panadaptor, net stats
 - Very reasonably priced
 - Requires iOS 14 minimum
- FT-8 skimmer - is super helpful in assessing world-wide band conditions on up to 4 bands simultaneously – in a few minutes!
- Pan/tilt Camera in shack and outside have proven useful – very inexpensive
- Please invest in an antenna disconnect/ grounding system
- Certain wifi switches with slick interfaces are robust, cheap, and useful – interface with any existing antenna relay box (RatPak, Ameritron, etc)

If you are like many Hams and already have lots of nice equipment and antennas, use what you already have! – Enjoy your Station from far away!

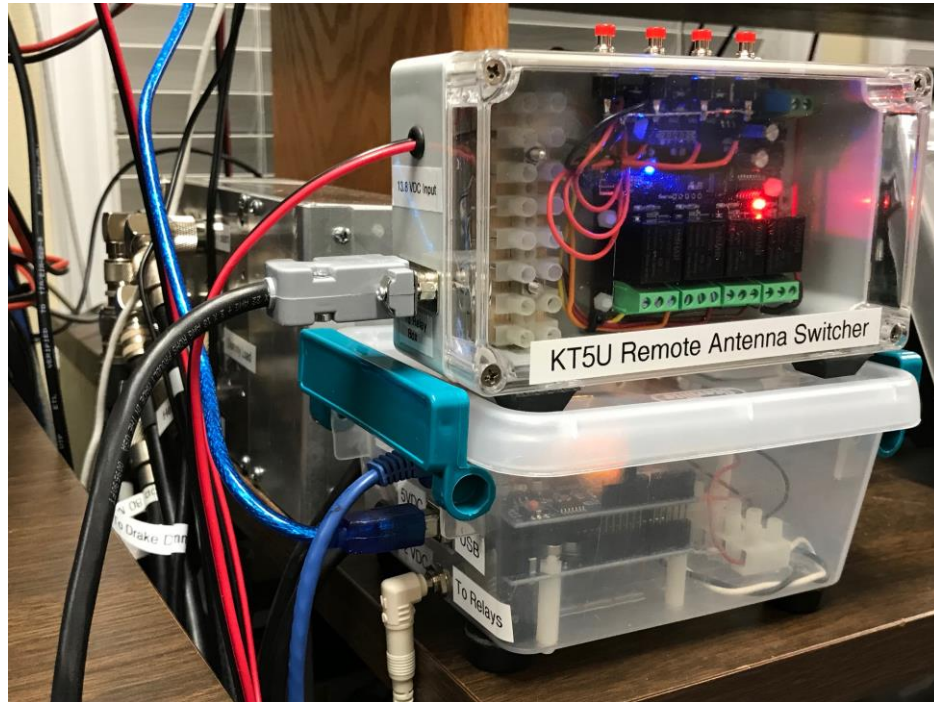
4 Channel Wifi Switches

- Great for antenna selection using my iPhone (even in my shack)
- I build them into interface boxes. They are inexpensive and reliable.



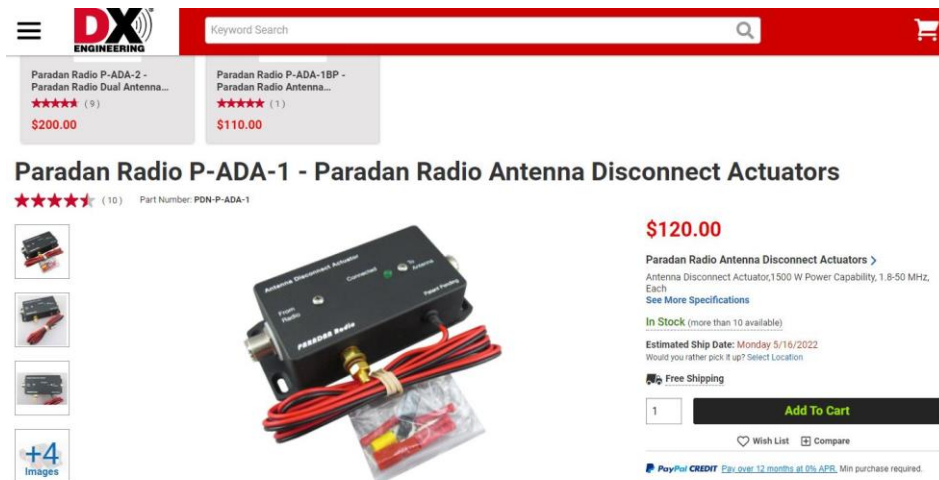
4 Channel Wifi Switches

- This relay assembly is from an old Ameritron RCS-8.
- My second 4 ch switch drives an Array Solutions 6-Pak relay box at top of tower.



Antenna Connection, Disconnection, and Grounding

- Amazing thunderstorms in TX have me worried – especially when my antenna's hooked up to high dollar equipment and I'm out of town!
- Best solution is tossing your coax out the window! Second best is true air-gap switch (in progress). Third best may be the Paradan Radio Disconnect box.



Shack and Tower Situational Awareness

- I use inexpensive Wifi wireless cameras to verify yagi stack direction (redundancy) and view equipment inside shack. 3 cameras for ham radio operations plus hidden cameras on property.



Pan-Tilt aimed Station 1-3



Focused to top of 100' Tower



Driveway and House

I Agree with this Testimonial



W8UAB, 07/11/2020

The Perfect Pocket Option!

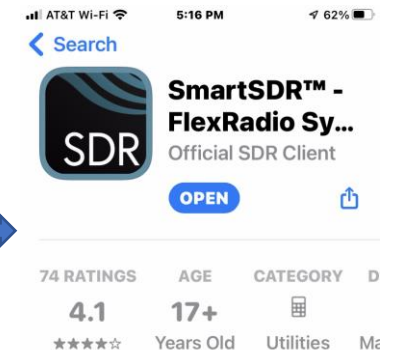
The power of HF radio in the palm of your hand. Feel right at home whether you are in a restaurant, at the park, fishing on a boat or driving down the road. This APP provides all the features of SmartSDR and then some. No learning curve as the GUI is beautifully ported onto your modern iOS device with ease.

I use to have a radio in the shack, one in the car, one in the garage, one to take on the go, a receiver in the bedroom... well you get the idea. Now I have one radio in the shack that I can remote from everywhere!

Download it
Turn it on
Enjoy!

***"I used to have a radio in the shack, one in the car, one in the garage, one to take on the go, a receiver in the bedroom.....
Now I have one radio in the shack that I can remote from everywhere!"***

From Apple
App Store



**Enjoy your Station from Far Away (or Anywhere)
Give it a Try!**

From Website of Marcus Roskosch:
Roskosch.de/smartsdr-features