A REMOTE CONTROL HF STATION
HOW HARD CAN IT BE?

DOUG SHARP, K2AD

A STATION THAT I HELPED BUILD – K2TR OUTSIDE ALBANY, NY

- Three towers
  - 110 feet Rohn 45
    - 20 meters: 6 el @ 110 ft / 6 el @ 55 ft
    - 10 meters: 4 el @ 80 ft / 4 el @ 40ft
  - 120 feet Rohn 45
    - 15 meters: 7 el 60 ft / 7 el @ 60 ft
    - 80 meters #1: 2 el Delta Loops @ 110 ft
  - 140 feet Rohn 55
    - 40 meters: 3 el @ 140 ft / 3 el @ 70 ft
    - 10 meters: 7 el @ 145 ft
    - 80 meters #2: 2 el Delta Loops @ 110 ft

- I had a lot of fun operating this station. But then I moved to Virginia, and then Colorado.
- Can I be like Uncle Rico and re-live my glory days?

I LIVE IN A HOA CONTROLLED COMMUNITY …
IT LOOKS LIKE A REMOTE STATION IS THE BEST SOLUTION

- We are fortunate to have access to several very large ATT towers
  - Strasburg
  - Avondale / Cedarwood
  - Westcreek
  - Kutch
- Thankfully no HOAs!

- My dream is a large 40 meter – 10 meter yagi on top of the 140 foot tower + 160 / 80 meter wire antennas
- Let the system integration project for a remote HF station begin

WHAT DO WE NEED?

- HF radio
- HF amplifier (optional)
- Antenna tuner
- Antenna switch
- Rotor controller
- Telemetry and Positive control
- IP Broadband

And everything needs to be remote controlled

So let’s geek out and design a remote station

RADIOS AND AMPLIFIERS

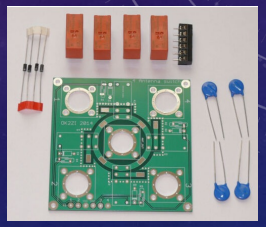
- Radios that I like that support remote control
  - Icom IC-7300
  - Elecraft K3
  - Elecraft K4

- Nice amplifier to remote is Elecraft KPA500 or KPA1500

SUPPORT EQUIPMENT

Quite a few pieces of off-the-shelf support equipment

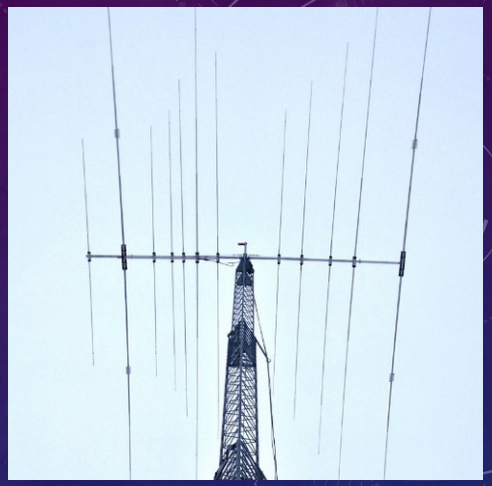
- Rotor Controller – Green Heron
- Antenna Switch – Homebuilt
- Power strip – APC that RMHAM uses at sites
- Remote monitoring
- PC computer for local site control



And then integrate everything with IP interfaces

”Buy what you can afford. Build the equipment you can not afford.” – Fred Lass, K2TR

ANTENNAS



Start small, and always build bigger and better

In the beginning

- Start with a 160/80 meter dipole / Inverted Vee fed with open wire line and an antenna tuner
- Mount center of antenna on tower at approx. 50 to 80 feet

Then build more … Go big!

- Multi-band yagi for 40 / 20 / 15 / 10 meters on top of tower at 140 ft
- 80 meter slopers aimed NE / SE / SW / NW with antenna switch
- Possible Delta Loops on 80 meters?

”If your antenna did not fall down over the winter … it was not big enough.” – Unknown

BRINGING IT ALL TOGETHER

- This is a big system integration project
- For the radio –
  - I dislike “soft buttons” and prefer a radio with buttons and knobs
  - We need to have a web GUI interface for those without the knobs
  - Can not be “too complicated”
- For the control equipment
  - Will have multiple control programs
  - Multiple windows
  - Can we put this all on a “single pane of glass” or one Window?

QUESTIONS?

Anyone want to geek out?