Remote Operation of Your Ham Radio Station

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These slides, and more, are at my website k6ufo.com

Elecraft K4/0 Remote

FlexRadio Maestro

Today's Schedule:

11:00 – 11:05 Get seated, late-comers, early questions.
11:05 – 11:20 K6UFO on basic needs, and common approaches.
11:20 – 11:40 K6TD on Elecraft K4/0 Remote design
11:40 – 11:50 Q & A

Using <u>other people's stations</u> is a good learning experience, and a backup.

<u>Receive-only</u> sites: websdr.org   kiwisdr.com/public/   rx-tx.info

<u>Receive AND Transmit </u>(You will have to register, and pay $0 to $$$.):

  RemoteHams.com has many shared stations and club stations globally.

  RemoteHamRadio.com has very good stations, free to "youth", $99/yr + airtime.

Remote operators need to be <u>properly licensed for the location of the transmitter</u>. Always follow the rules of the regulatory authority. Must use callsign correct for the transmitter location. Transmitter location is the location for purposes of LoTW, contest operation, and award chasing.

To setup your own station for remote use requires choices.

Station used at home AND remotely, or dedicated to remote?

Do you need a human operator position at station?

How much re-configuration to go from local to remote use?

  Will you re-configure every day before leaving to work?

Is the station easily accessible (in the garage), or is it a long trip to the hills?

How much equipment will you haul around? Just a smartphone or tablet?

  Laptop (adds a keyboard)? Extra control head? Keyer and Paddles?

Modes: Voice, Digital, CW? CW by keyboard only, or key and paddle?

Will you keep a PC on-line at the remote station at the radio (useful),

       or does everything have to be extended across the internet (harder)?

VE3VEE

Basic Needs for remote operation:

1. Audio In/Out of radio, and across the internet to the operator. (USB port)
2. Radio control (Band, Freq, Mode, Filters, all the buttons and knobs.) (USB port)
3. Station Control (AC power, antenna switch, rotators, tuners, amp, …) (remote PC)
4. "Good" Internet service (Low delay, low variation, reliable.)
   - Wired internet (cable, fiber, DSL)=good.
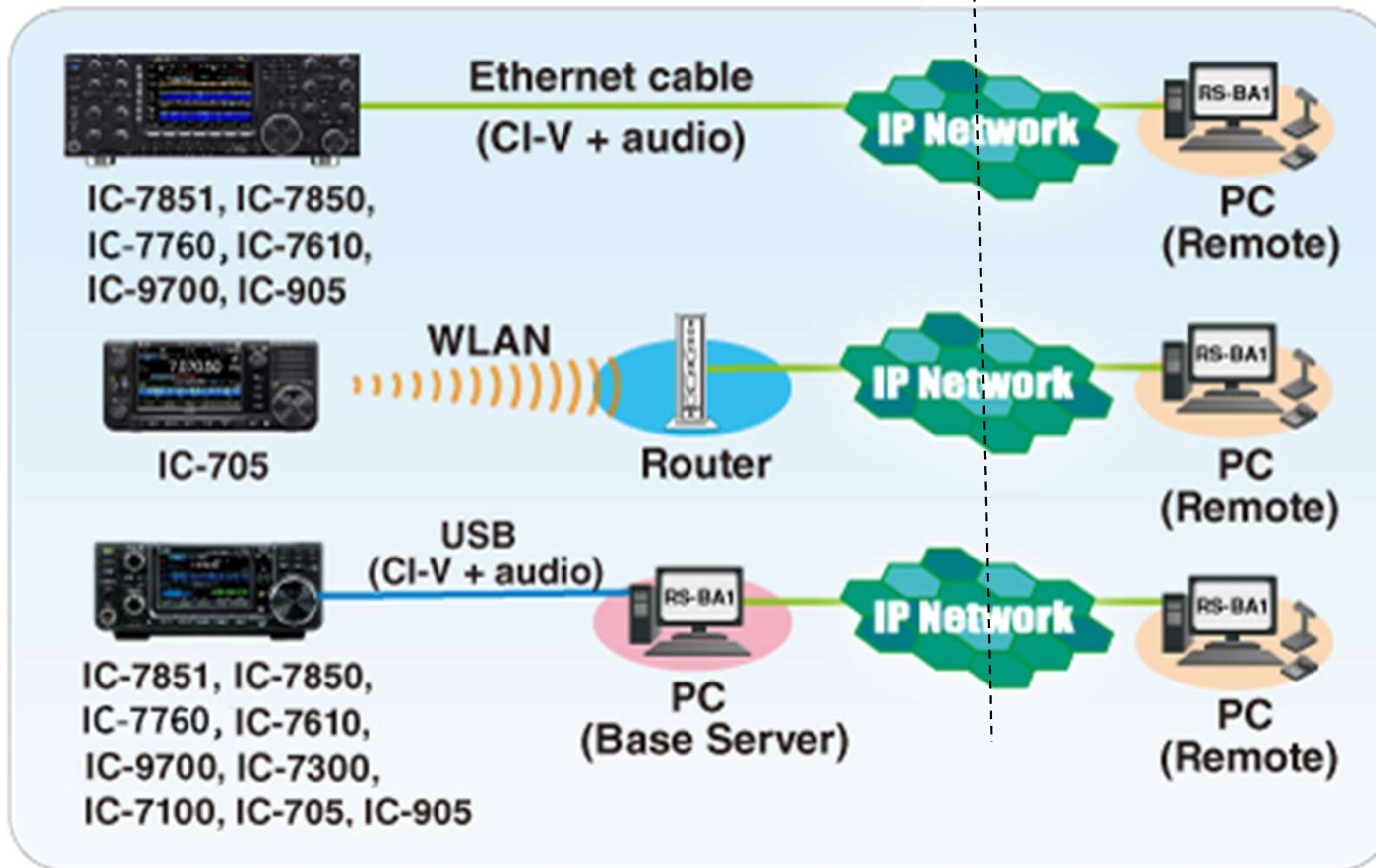   - WiFi, Cellular Data, StarLink = maybe good, maybe not – verify!

Some common splits: (Stuff at transmitter vs. Stuff at operator.)

Example: ICOM RS-BA-1 IP Remote Control software. $160.

Rest of station on this side: antenna, tuner, amp, power supplies, internet modem, router, …

Ethernet cable (CI-V + audio)

IP Network

RS-BA1

PC (Remote)

IC-7851, IC-7850, IC-7760, IC-7610, IC-9700, IC-905

WLAN

Router

IP Network

RS-BA1

PC (Remote)

IC-705

USB (CI-V + audio)

RS-BA1

PC (Base Server)

IP Network

RS-BA1

PC (Remote)

IC-7851, IC-7850, IC-7760, IC-7610, IC-9700, IC-7300, IC-7100, IC-705, IC-905

"Operator side" has a person with a Phone or Tablet, plus headphones. Maybe a laptop or office computer.

But there's no tuning knob or CW key!

You will want the "PC(Base Server)" to also control the AC power, rotator, and other station items. Can run software there, too (WSJT, CW keying, logging, …) If you run "remote desktop" software like AnyDesk, the two PCs are easy to manage. If you run a VPN, all the equipment can appear to be on one local network.

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Remote with Knobs and Buttons!

Elecraft has designed the K4 "front panel" to control another K4 locally or remotely.
You can control a K4 to a K4. Or, a K4/0 to a K4.
They also have a smaller knob box called a K-POD.
And software for tablets, laptops etc…
Visit their booth.

Remote with Knobs and Buttons! FlexRadio "Maestro"

All FlexRadios are controlled from a software program (SmartSDR) locally or remotely. "Maestro" control panel can also be used locally or remotely. (WiFi or wired) There are also tablet and smartphone apps. Visit their booth.

If you can't afford a Elecraft K4 and K4/0,
or a FlexRadio and Maestro,
there are other options:

RemoteHams.com software called RCForb

Icom RS-BA1 software

wfview.org software for Icom or Kenwood radios

RemoteTX.net   Raspberry Pi and software   Visit his booth.

N4PY.com software called PegasusPlus

Ham Radio Deluxe software has a remote control capability.

Any favorite radio control software running on a PC at the radio, remotely accessed by AnyDesk, TeamViewer, Chrome Remote desktop, Windows Remote Desktop, …

Summary: … how to build a remote station:

Use <u>other people's stations</u> as a learning experience.

Different solutions have different advantages/problems.

Do not select a remote site without <u>Low Delay and Reliable internet</u> service!

Consider a remote desktop or VPN to use your home station from elsewhere.

The real problems are control of "everything else": AC power outlets, antenna switching, rotators, tuners, …

Remember the goal: get on the air, for more hours of operating.

Other resources: YouTube videos by:
VE6WZ - "The control setup at VE6WZ"
FlexRadioSystems VA3MW   - Setting up my First HF Remote Station
                          - How To Build A HF Remote Station with Mike VA3MW

Now, we speak to an expert! Kevin Rowett K6TD
Kevin was deeply involved in the design of the Elecraft K4/0 Remote Panel, and has maintained a remote contest station for many years.