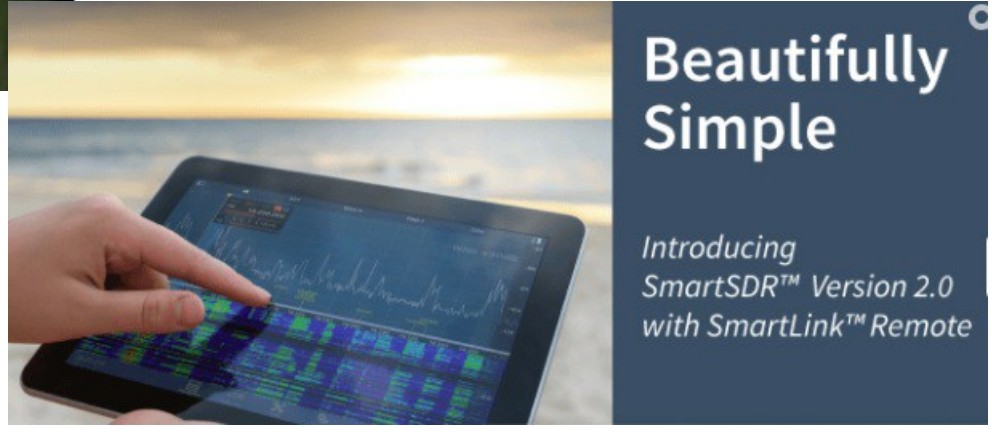
Visalia DX Convention 2018

Remote Access to your station: Latest Developments

Mark Aaker, K6UFO

14:50 – 15:30 San Joaquin Rooms C-D

These slides (and more) are at my website k6ufo.com



See also the Saturday talk: 13:45 – 14:25 Charter Oak Room C, D
Remote Operation with SMARTLINK - Dr. Howard White, KY6LA

Remote access is now commonplace, but changes at "internet speed."
There is more information on the internet than I can cover in this talk.

There is no one perfect solution. It depends on what you want to do.
Check-in to a local Net? DX? Contest? EME? Ragchew?
Your requirements for Bands, Distance, Modes, Responsiveness...
will determine what methods might work best for you.

To use OTHER people's stations remotely, see RemoteHamRadio.com
RemoteHams.com or a club or individual who is already set up. (...in particular, FlexRadio owners.)

Many receive-only sites on the web: websdr.org globaltuners.com sdr.hu

Four Basic Needs for Remote Operation

1. Audio In & Out to radio: Access to MIC/SPKR, Line In/Out, or **audio over USB**. Just like for digital modes (PSK, AFSK, FT8)

2. Radio Control: To read and set radio Freq., Mode, PTT ... Need a radio with serial port, CAT, CI-V, or **USB control**.

3. Station Control: AC power outlets, antenna switching, rotators, tuners, amplifiers, ... Equipment must be "Computer-controlled" or highly "Automatic."

4. "Good" Internet service: Up and Down speeds over 0.5 Mbps, Low delay under 200ms, low packet loss, low jitter or variation, a publicly routable IP address for the radio end (dynamic or static.)

…and your patience and willingness to deal with problems.

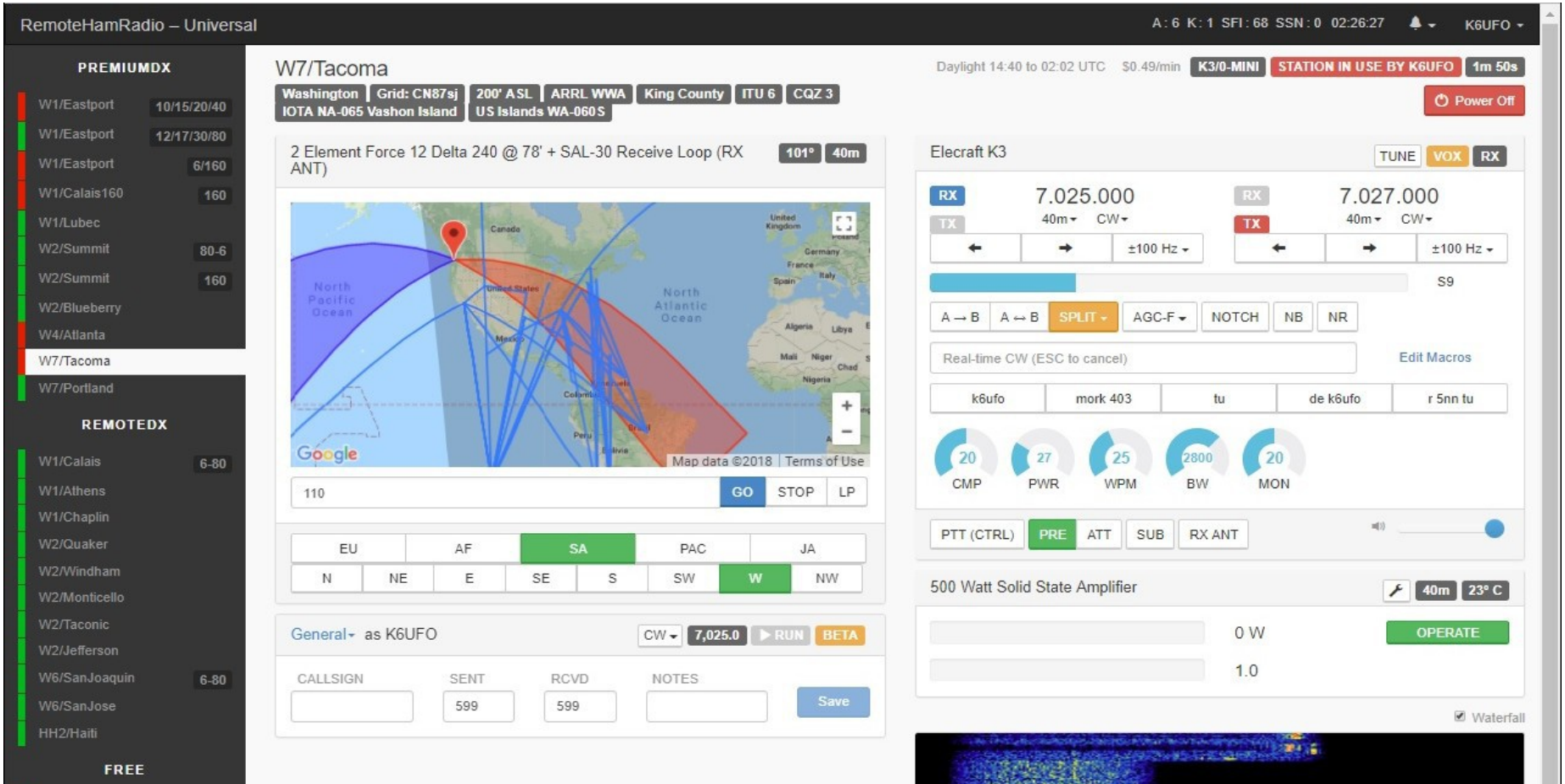
Four Proven Ways to Implement

1. Web Browser
2. Software Programs
3. Remote Desktop Software
4. Remote Front Panels

1. Web Browser

RemoteHamRadio.com is the “big gun” in this method.

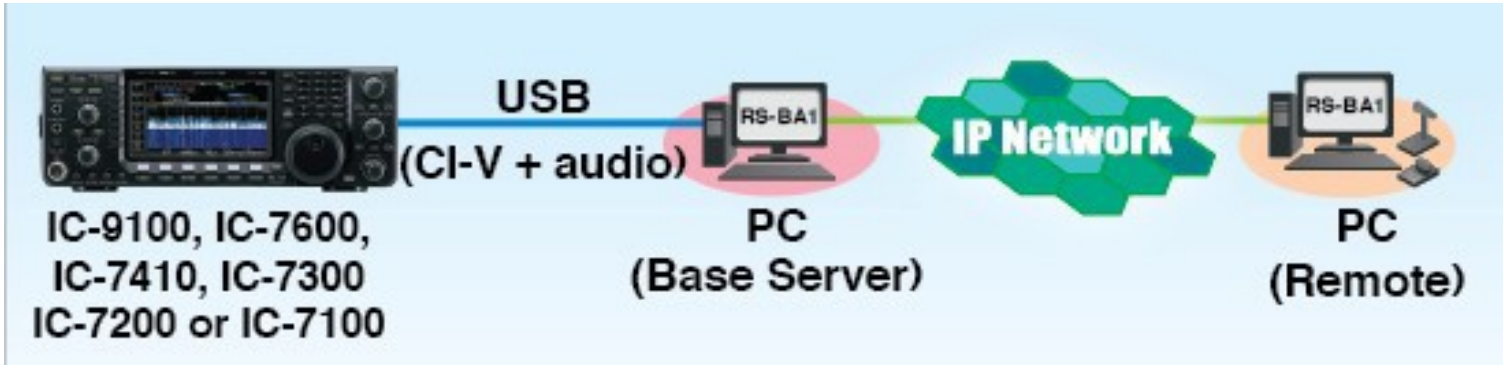
- You can sign up and get familiar with this method, without spending too much money. They have a special “Youth Program.”



2. Software Programs

RemoteHams.com Is both a software Program (RCForb) and a community of users & stations. Many stations free to use, some are "membership". Wide range of capability and reliability. You can also use server software to offer up your own station. See, QST Magazine, April 2017, p30: "DIY Remote Radio Now"

ICOM's RS-BA-1 IP Remote Control software. $99.



See also: Kenwood Radio Control Program ARCP-480, Ham Radio Deluxe, TRX-Manager, DF3CB software FT2000RC, N4PY Software, …

3. Remote Desktop software

Set up your shack PC to control your station. You can use your favorite logging programs or rig control programs - even if they don't have any "remote" ability: N1MM+, Wintest, Logger32, DXLab, WSJT-X, ...

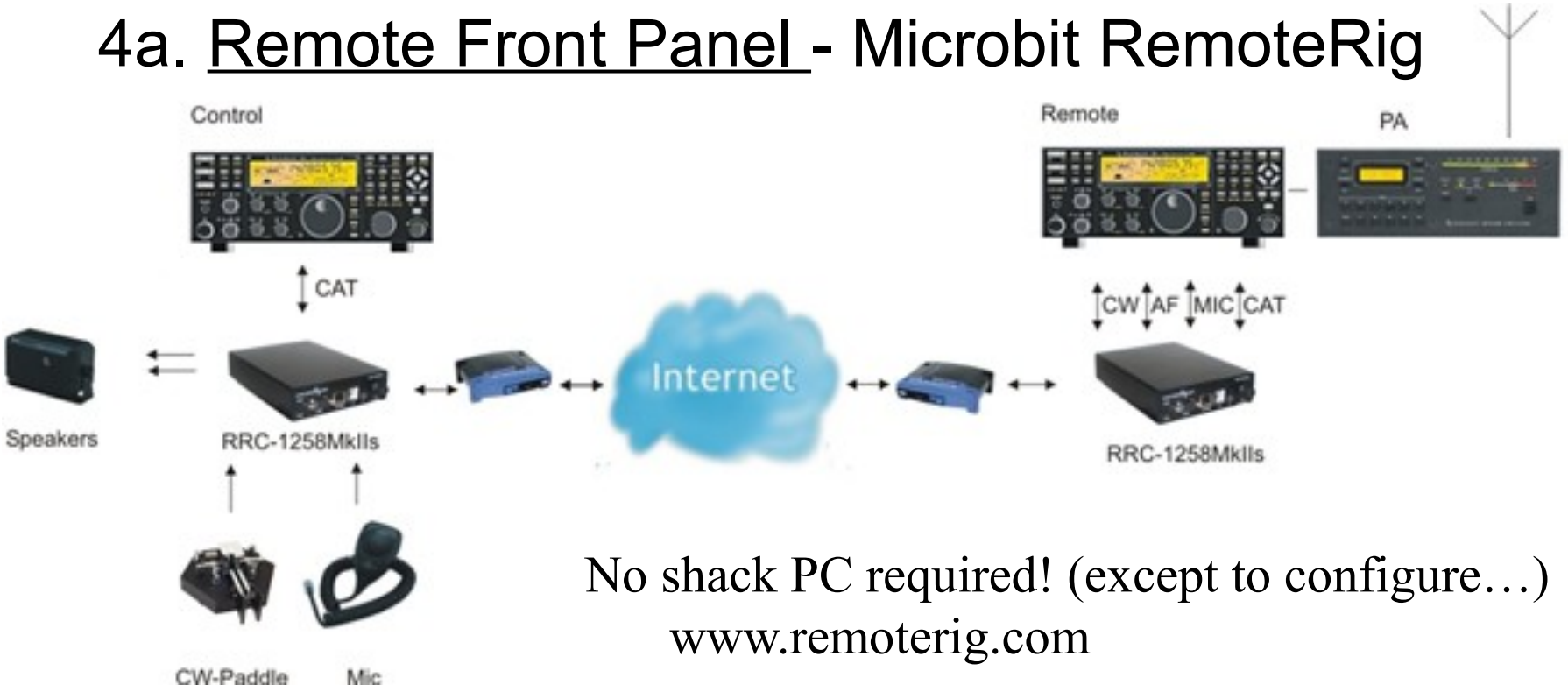
Then use "remote desktop" software to connect-in to your shack PC. You "see" the shack desktop, and can control the station, just like being there.

There are many free "Remote desktop" programs (also called VNC):

- TeamViewer,
- Splashtop,
- Chrome Remote Desktop,
- Windows Remote Desktop,
- Mac OS Screen Sharing*,
- TightVNC*, …

* If yours doesn't include two-way audio - add Skype, Remaud by DF3CB, or VOIP "chat" software like Ventrilo, Mumble, or TeamSpeak.

4a. Remote Front Panel - Microbit RemoteRig



No shack PC required! (except to configure…)
www.remoterig.com

Uses a pair of RemoteRig "modems" to send audio and control signals to radio.

Can use with:

- Radio with a detachable front panel (TS-480, IC-706), or
- Radio with a matching "control head" (Elecraft K3/0-Mini), or
- Two radios that support the "Twin" concept (Elecraft K3, Yaesu FT-2000, or
- Control with a PC program or Android App on smartphone or tablet.

4b. Remote Front Panel - FlexRadio Maestro

A FlexRadio Maestro (wireless or wired) connects across a local network or the internet to control a FlexRadio station. Can also control from a PC program or App on smartphone or tablet. Remote access has been “built-in” to the SmartSDR software.

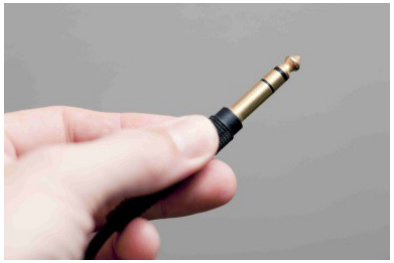
What are the REAL problems?

Station Control: The control of “everything else”: AC power outlets, antenna switching, rotators, tuners, amplifiers, RX-only antennas, watt meters, …

Start by looking for “automatic” or “computer-controlled.” (Trust, but verify)

Eliminate things that require you to manually switch, plug or adjust them.

A "killer" problem when remote is when something needs to be reset or unplugged. There are more of these than you think.



There are solutions to the REAL problems:

AC Power switching: Belkin WeMo Switch $30 or DLI Web Power Switch $190

Antenna switching: The radio's ANT 1/2 button, or band decoders & switches.

Rotators: Control box with a serial port, logging software or PstRotatorAz.

Tuners and amplifiers: If manual tune, use on one band switched-in by antenna switch. If auto-tune: use anywhere. Use in Automatic-mode or with control sw.

Other devices can be controlled across the internet with serial port extenders, “internet” relays and switches, computer controlled switches, ...

Latest Developments in Remote Access:


3830scores.com
Contest Score Rumors

Home | Call | Search | Preferences

Submittal Forms | Current Contests

ARRL DX Contest, CW 2018 Feb 17 Claimed Scores

SOAB HP

Call	SO2R	Remote	QSOs	Mults	Op Time	Score	Club
TI7W(N4YDU)	x		7041	334	48	7,054,080	PVRC
V47T(N2NT`)	x		6113	322	43.3	5,899,362	FRC
P49Y(AE6Y)	x		5717	334	44	5,728,434	MLDXCC
6Y2T(VE3DZ)	x		6055	307	42	5,557,314	CCO
KM7W(KL9A)	x	x	4400	425	47	5,553,900	
N5DX(@N2QV)	x	x	4147	412	48	5,124,456	
VY2ZM(K1ZM)	x		3745	412	45	4,628,820	YCCC
K1ZZ	x		3635	405	43:20	4,416,525	YCCC
KH7B(K4XS)			4733	296	44	4,292,904	FCG
FM5BH	x		4501	296	40	3,996,888	
AA1K	x		3314	366	44:36	3,621,204	FRC
CB6K(CT1IIT)	x		4080	270	abt 40	3,303,180	

Remote stations used to win (and place highly) in all major contests: ARRL DX CW and SSB, CQ WW CW and SSB, Stew Perry TBDC, CQ WPX SSB, CQ WW RTTY

Increased numbers. Hundreds of club stations now supporting a remote. Remotes have made HF operation practical for hams living in restricted spaces. Has allowed newly-licensed hams to try HF before investing. Keeps hams on-the-air when repairs needed.

FlexRadio systems software 2.0 now includes integrated and easy to use remote connection "SmartLink." Many new SDR radios, like the SUN SDR2, also are "remote-ready" with an ethernet interface.

Latest Developments in Remote Access:

Very popular and affordable remote-capable radio: Icom IC-7300 (USB rig control and USB audio in/out) only $1,100 plus Icom RS-BA1 software $99. (You still need additional "station" control: power, antennas, rotors.)
Other "entry-level" equipment now has built-in sound cards and radio control to make remote operation easier.

"Control by WEB" device X-410 has built-in web server, features 4 digital inputs, 4 output relays. $234.

RHR adds "waterfall display" to remote stations. 3 kHz wide.

FT8 mode has made remote operation possible without needing "quick-response" by operator. Useful where poor internet connections. FT8 users also satisfied with smaller antennas and lower power than would be acceptable to CW and SSB DXers.

Latest Developments in Remote Access:

HF Voyager project KH6JF/MM shows capabilities of a autonomous ocean-going robot with an HF radio station. Remotely controlled to turn on/off and other basic controls. It demonstrates what an "unmanned" remote radio station could do for remote locations.

Newest Microsoft release of Skype no longer supports auto-answer. Skype “Classic” old version 7.40 still available on the web.

CATSync software by DJ0MY available to control web sdrs with your shack radio and shack PC. Works with websdr.org, SDR.hu and many more. Provides a synchronized remote receiver. (Not valid for DXCC and most contests.)

Q & A

What are your questions and concerns?

Maybe someone here can help!

Thank you!