Everything Else in Ham Radio

Back to Basics 03/02/18

Kyle Krieg (AAØZ)
www.nøktk.com
kylekrieg@gmail.com

What is “Everything Else”

- SOTA/POTA (Summits & Parks on the air)
- Working Satellites
- Contesting
- SDR (Software Defined Radio)
- WSPR (Weak Signal Propagation Reporting)
- RBN (Reverse Beacon Network)
- APRS (Automatic Packet Reporting System)
- QRP (operating with 5W or less)
- Digital Modes (PSK31, RTTY, FT8)
- Winlink (sending email via the HF bands)

What is “Everything Else”

- Propagations Reports
- Clusters
- Vanity Call Sign Tools
- Typical Band Characteristics

ARRL Tech License Privilege Expansion

Proposal sent to FCC 2/2818 :

http://www.arrl.org/news/arrl-requests-expanded-hf-privileges-for-technician-licensees

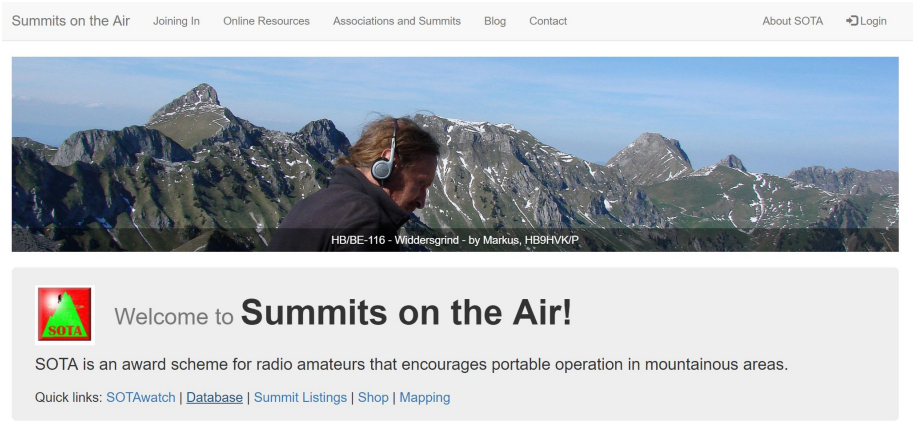
- HF SSB privilege on 75m, 40m & 15m
  - 75 Phone 3.9 - 4.0 Mhz
  - 40 Phone 7.225 - 7.30 Mhz
  - 15 Phone 21.350 - 21.450 Mhz

- Digital & RTTY on 80m, 40m, 15m & 10m

SOTA & POTA

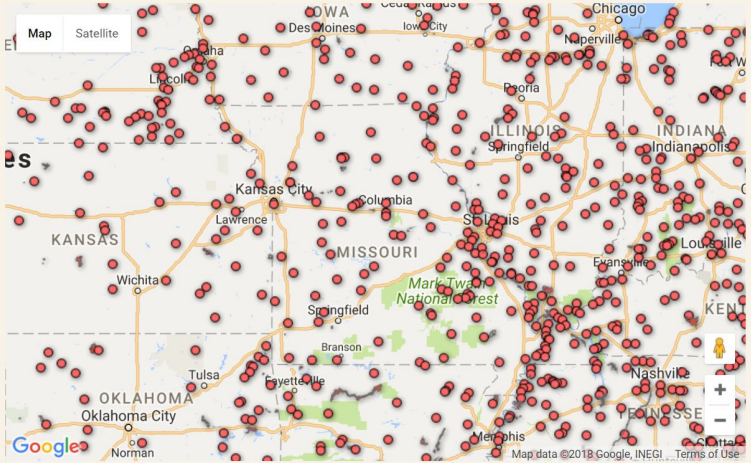
http://parksontheair.com

http://www.sota.org.uk



Map of Parks on the Air Entities:

This map shows all the entities within the Parks on the Air (POTA) program. Entities are highlighted in red; click on them to view details. View a full screen map. We are also developing a searchable map which uses geo-location to find your closest entities. Use the Activator Locator.



Satellites

www.amsat.org

About 19,300 results

How to work amateur radio satellites with your handheld (HT) radio
WorldwideDX Radio Forum • 87K views • 6 years ago
AE6LX from http://www.worldwidedx.com gives detailed instructions and a demonstration on how to communicate with other hams

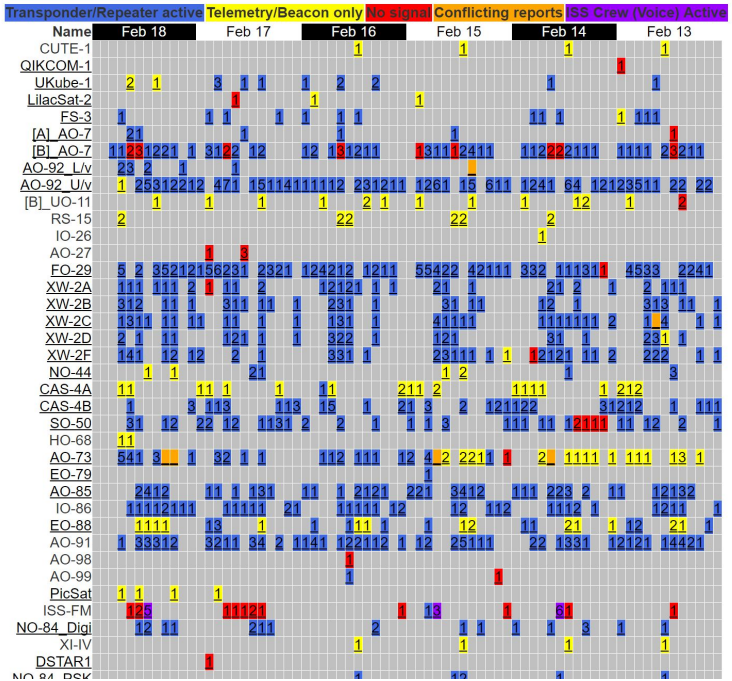
Chasing the Satellites - Amateur radio SSB sat work
KC2UOO • 5.4K views • 1 year ago
Brothers K2FR and N2TEB **Work** the SSB **Satellites** over thanksgiving break from the Hudson valley of Newyork.

How to Work Amateur Ham Radio Satellite w Baofeng UV5R MFJ on Saudisat SO-50
David Mercado • 160K views • 4 years ago
This video demonstrates requirements needed to communicate via Amateur **Ham Radio Satellite** using an inexpensive $50 Baofeng

Ham Radio AO-51 Satellite, again
K7AGE • 211K views • 10 years ago
SO-50 is a current alternative to AO-51 http://ww2.amsat.org/?page_id=1015 AO-51 Update November 29, 2011 It is with a heavy

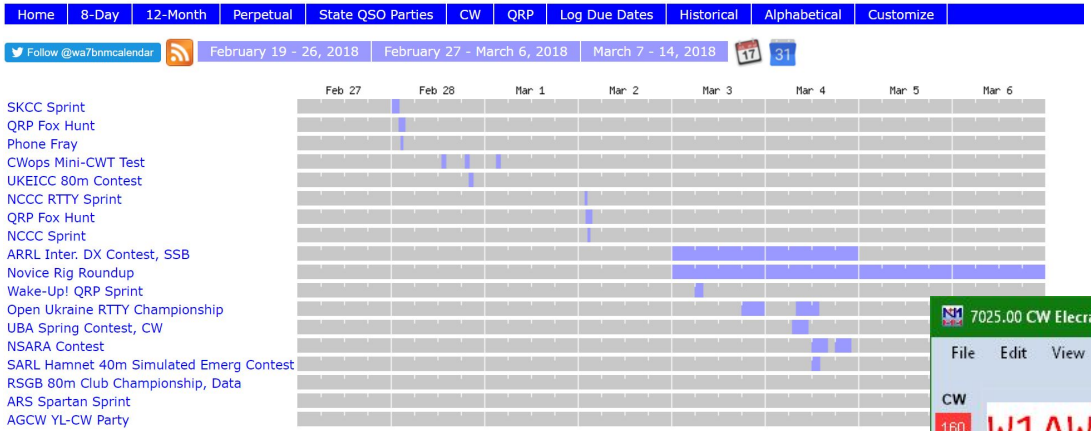
AMSAT Live OSCAR Satellite Status Page

This web page was created to give a single global reference point for all users in the Amateur Satellite Service to show the most up-to-date status of all satellites as actually reported in real time by users around the world. Please help others and keep it current every time you access a bird.
If you want to practice reporting without affecting the real data, please select the dummy-satellites AO-98 and AO-99.



Contesting

http://contestcalender.com



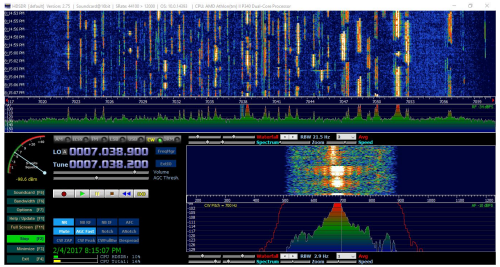
http://www.n1mm.com

Software Defined Radio Hardware

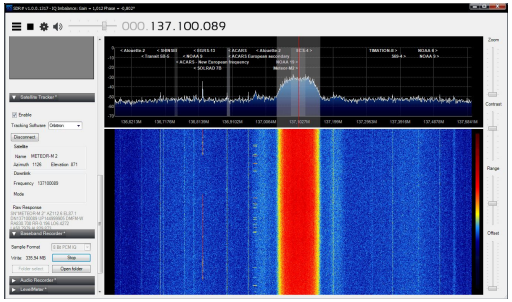
RTL-SDR - www.rtl-sdr.com. Amazon $25 bucks, can be used with almost any SDR software package. Good cheap entry level dongle.

SDRPlay- www.sdrplay.com $200, can be used with almost any SDR software package. Really good reviews with SDR community.

Software Defined Radio



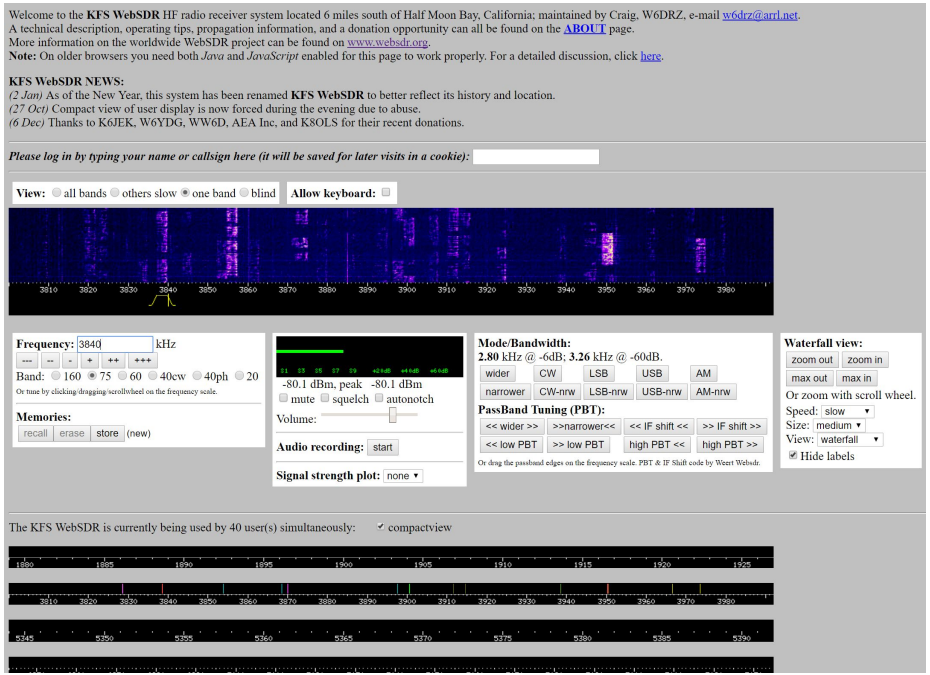
HDSDR - www.hdsdr.de. Free SDR software, most popular, has built in drivers for most of the RTL-SDR dongles and IF output.



SDR# - www.sdrplay.com. Free SDR software. Designed to work with Airplay SDR, but will work with almost any RTL-SDR hardware.

For Mac and Linux try the following SDR packages : Linrad & GQRX

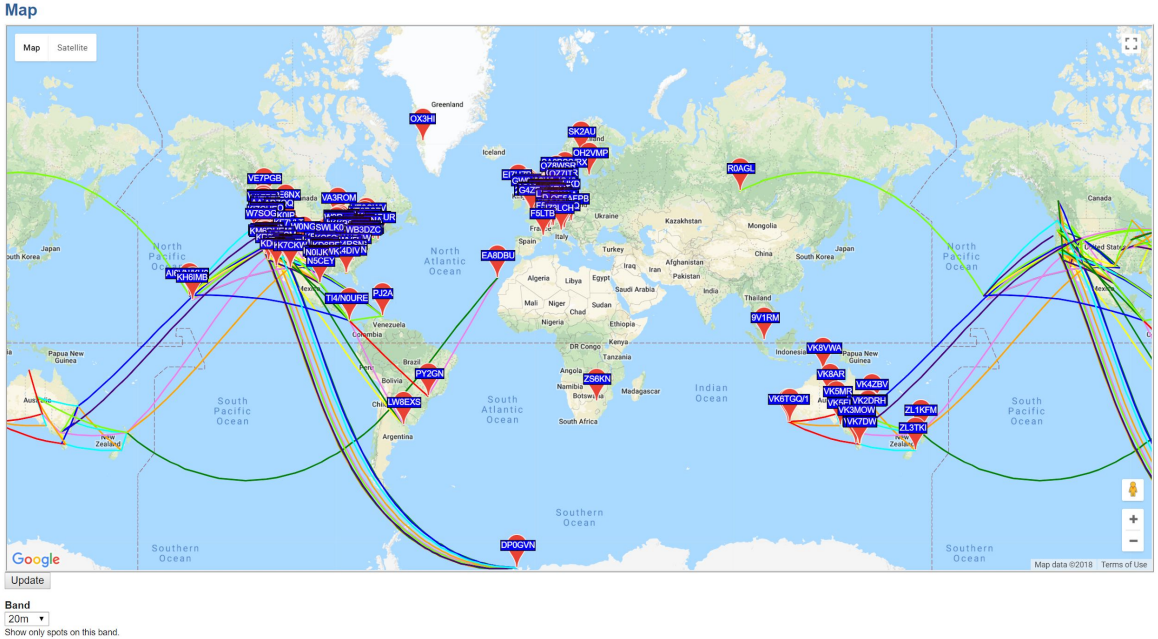
SDR - WebSDR



www.websdr.org

WSPR (Weak Signal Prop Reporting)

http://wsprnet.org/drupal/wsprnet/map



WSPR (Weak Signal Prop Reporting)

http://www.qrp-labs.com

QRP Labs

QRP Labs Shop

Click here for Shop!

News

February 2018 newsletter
2017 archive
2016 archive

Kits

5W CW transceiver kit
Ultimate3/3S QRSS/WSPR kit
- Ultimate3S kit info
- Ultimate3 kit info
- Firmware version history
- Modifications
- Builders' photos
- Builders' videos
- Troubleshooting
- More technical info
- VE3KCL balloons

Ultimate relay-switched LPF kit
GPS receiver kit QLG1
Low Pass Filter
Band Pass Filter
Si5351A synthesizer
OCXO/Si5351A synthesizer
Arduino shield

Ultimate3/3S QRSS/WSPR kits

Utimate3S kit info

The Ultimate3S QRSS/WSPR kit was launched i
kit can transmit a variety of QRSS and WSPR mc

Read more...

Ultimate3 kit info

The Ultimate3 QRSS/WSPR kit was produced fr
superceded by the U3S kit. The Si5351A synthes
restored with a modification.

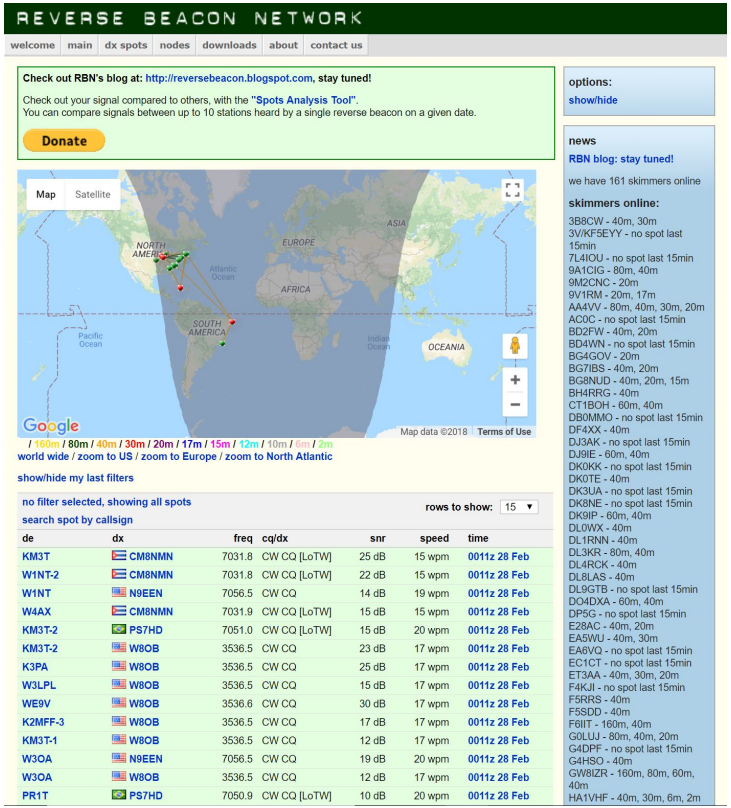
Read more...

Firmware version history

The firmware is the same for the U3 and U3S kits
also provides the operating manuals for downloa

Read more...

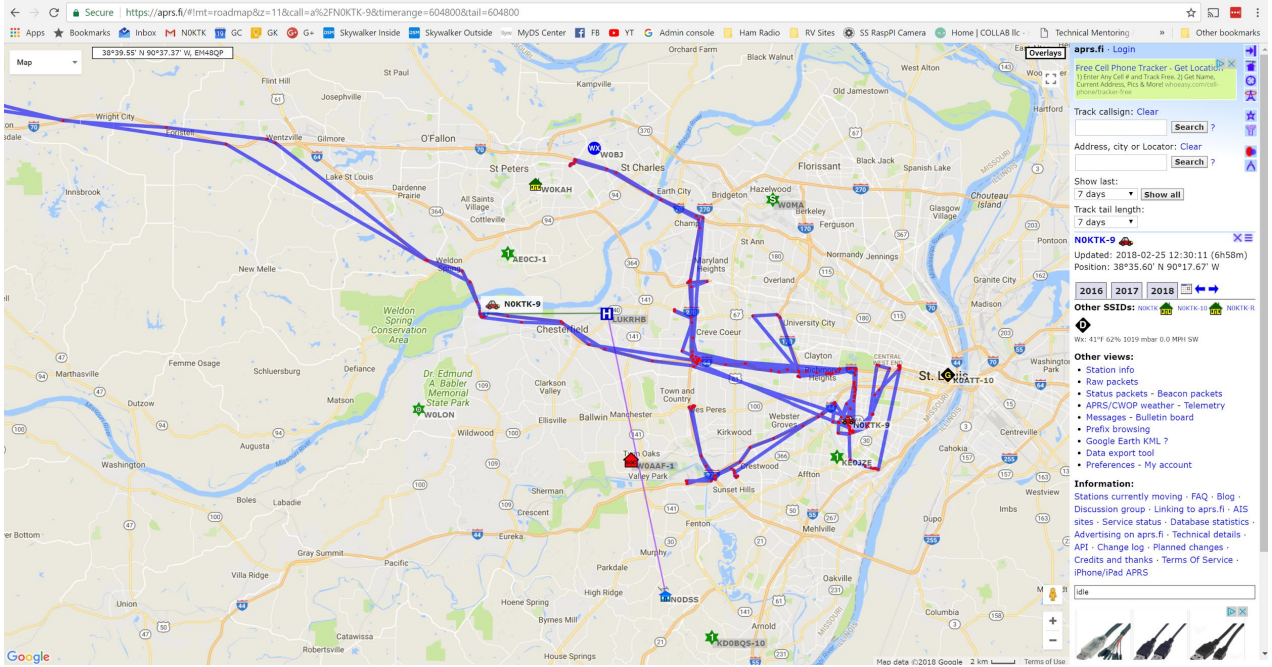
RBN (Reverse Beacon Network)



http://reversebeacon.net

APRS (Auto Packet Reporting System)

http://aprs.fi



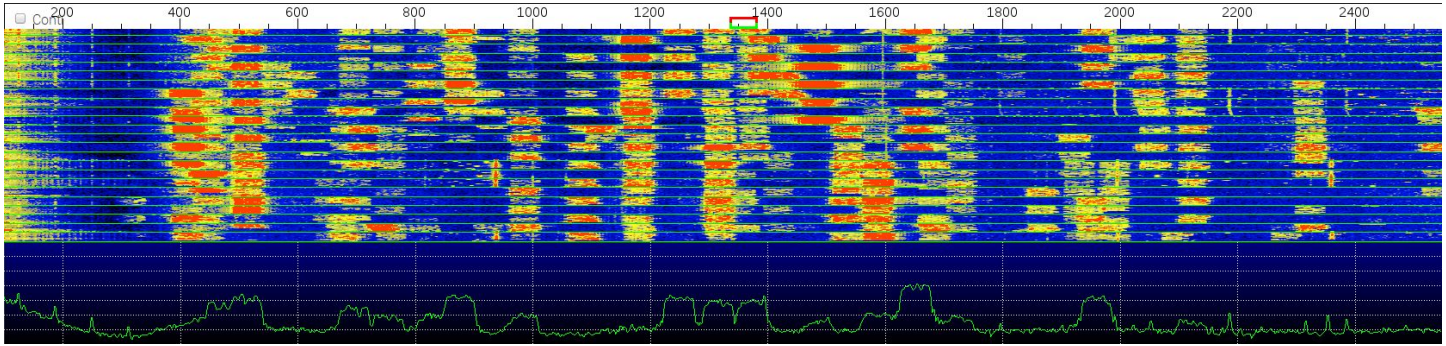
QRP

QRP - Operating at low power while attempting to make contacts. Power output is usually less than 5W for CW, 10W for SSB.

Digital Modes

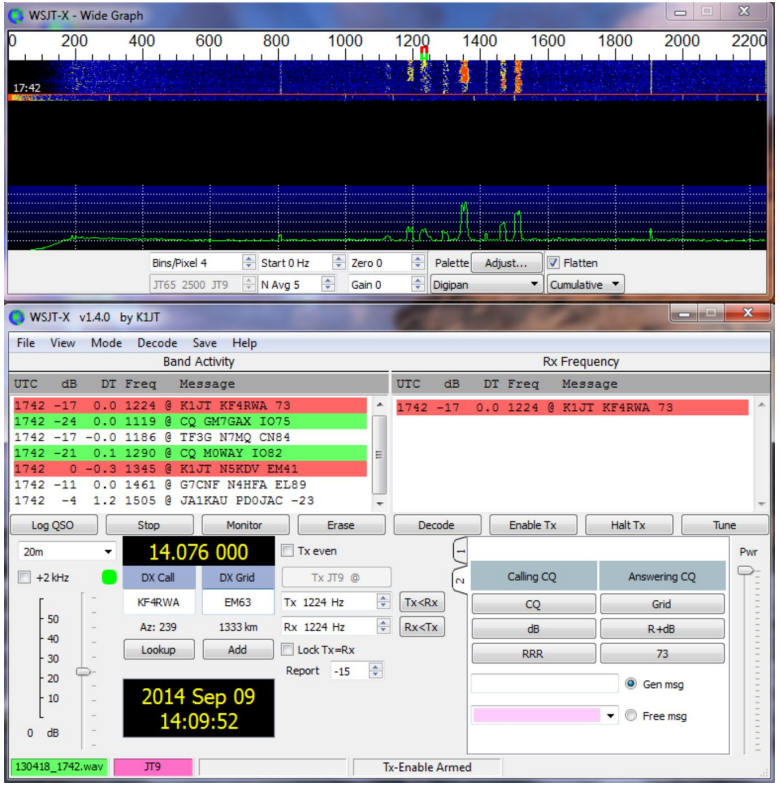
Digital (USB is always used)

- PSK31
- RTTY
- JT65 & JT9
- FT8



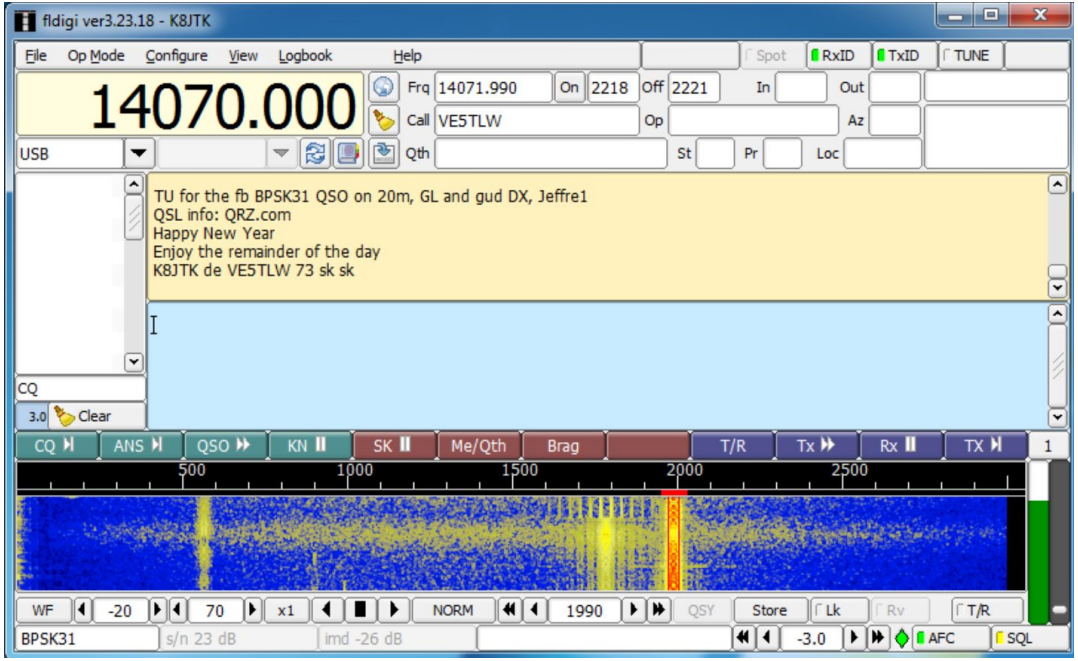
Digital Modes - FT8/JT65 & JT9

https://physics.princeton.edu/pulsar/k1jt/wsjtx.html



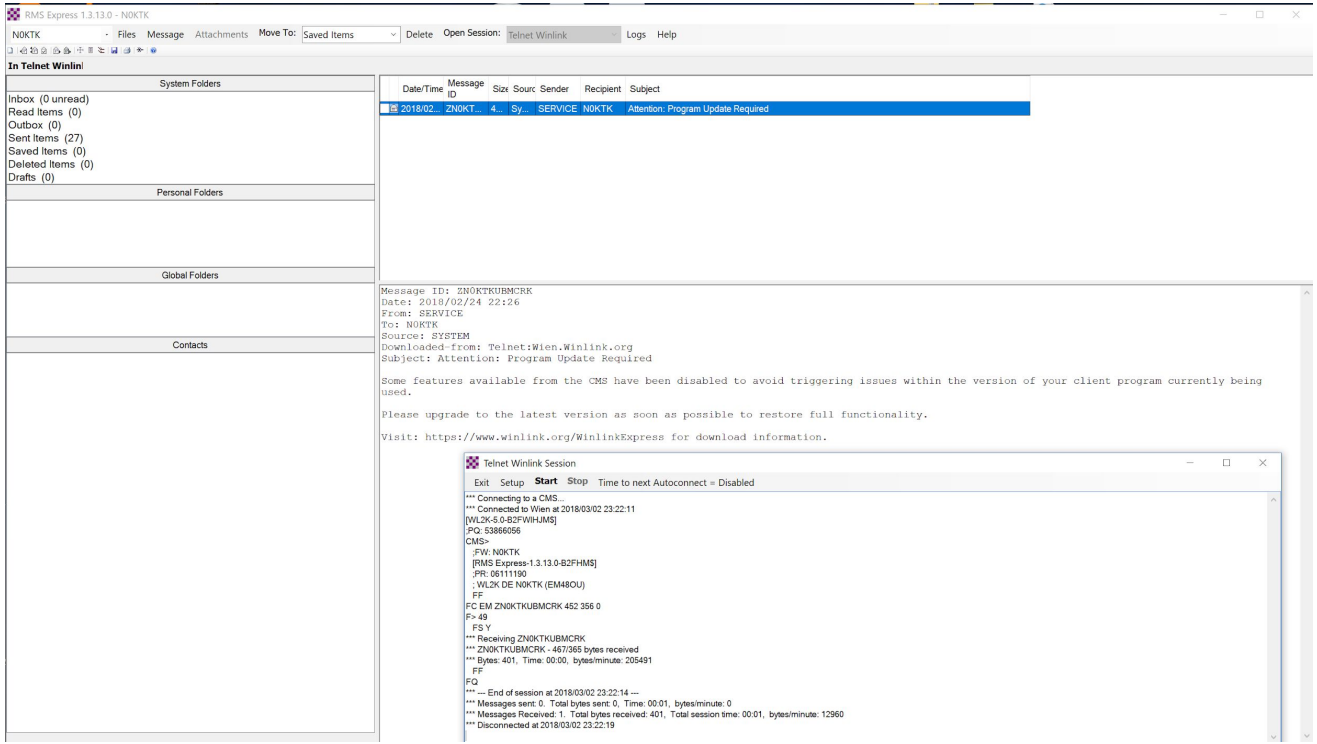
Digital Modes - FLDigi (PSK & RTTY)

http://sourceforge.net/projects/fldigi/files/



Winlink

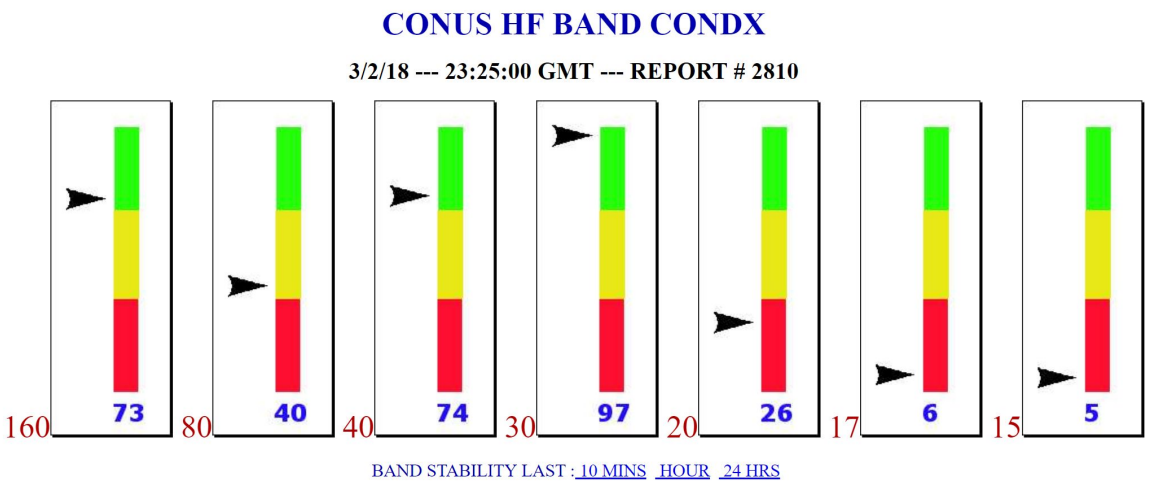
http://www.winlink.org



Propagation Reports

http://www.hamqsl.com/solar3

http://www.bandconditions.com



Propagation Reports

http://www.voacap.com

Grayline: 2018-02-28 00 : 24 Set Reset

Propagation Params

Es: No Model: Auto

SSN: Min.TOA: 0.1 °

Today's Sunrise/Sunset Times (UTC)

	Transmitter		Receiver	
GND	06:10	18:17	03:02	15:09
D	05:47	18:40	02:39	15:32
F	05:16	19:11	02:08	16:03

Transmitter Site

QTH: << Select a location >>

Name: TX Loc calc

Latitude: 0.0000 [-90..90]

Longitude: 0.0000 [-180..180]

TX antenna:
10M: 3-el Yagi @ 15M (50ft)
12M: 3-el Yagi @ 15M (50ft)
15M: 3-el Yagi @ 15M (50ft)
17M: 3-el Yagi @ 15M (50ft)
20M: 3-el Yagi @ 15M (50ft)
30M: Dipole @ 10M (33ft)
40M: Dipole @ 10M (33ft)
60M: Dipole @ 10M (33ft)
80M: Dipole @ 10M (33ft)

TX power: 1500 W

TX mode: CW

Specials: Swap TX-RX Short-path

Current point: Set Home Unset Home

Receiver Site

QTH: << Select a location >>

Name: RX Loc calc

Latitude: 0.0000 [-90..90]

Longitude: 47.0000 [-180..180]

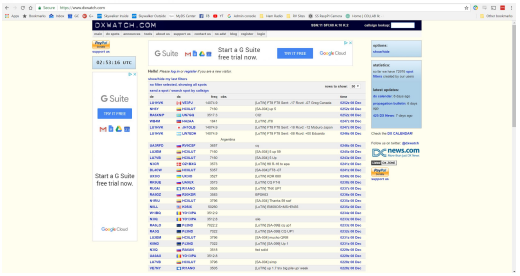
RX antenna:
10M: 3-el Yagi @ 10M (33ft)
12M: 3-el Yagi @ 10M (33ft)
15M: 3-el Yagi @ 10M (33ft)
17M: 3-el Yagi @ 10M (33ft)
20M: 3-el Yagi @ 10M (33ft)
30M: 1/4 wl Vert Gd Gnd
40M: 1/4 wl Vert Gd Gnd
60M: 1/4 wl Vert Gd Gnd
80M: 1/4 wl Vert Gd Gnd

Noise level: Quiet (153)

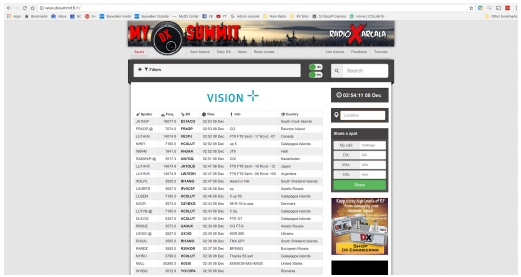
Low-SSN Season | Mid-SSN Season | Hi-SSN Season

Use the 24-hour prediction wheel (= REL Short-Path)

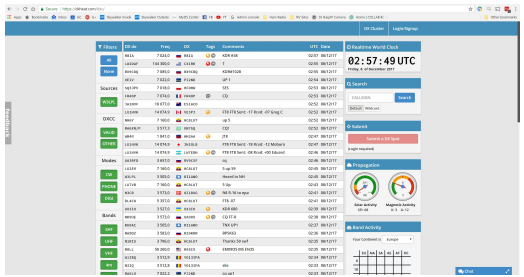
Clusters



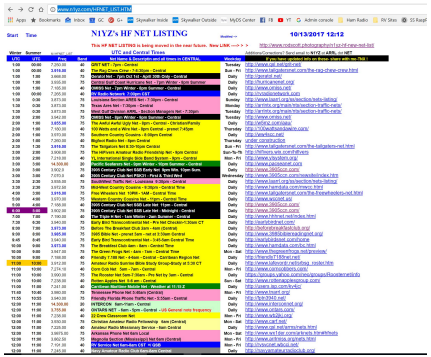
www.dxwatch.com



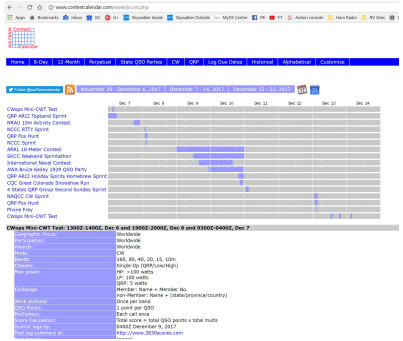
www.dxsummit.fi



www.dxheat.com



www.n1yz.com/HFNET_LIST.HTM



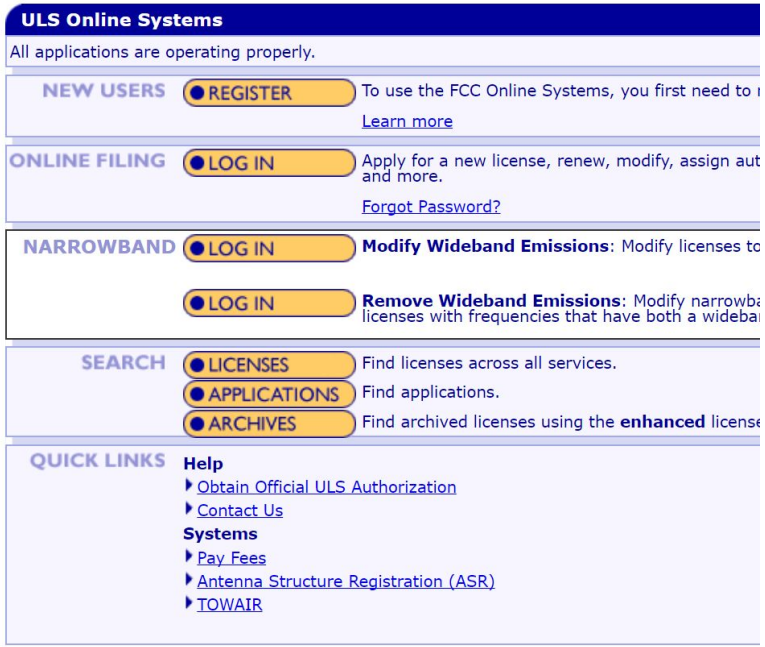
www.contestcalendar.com

Vanity Call Sign Tools

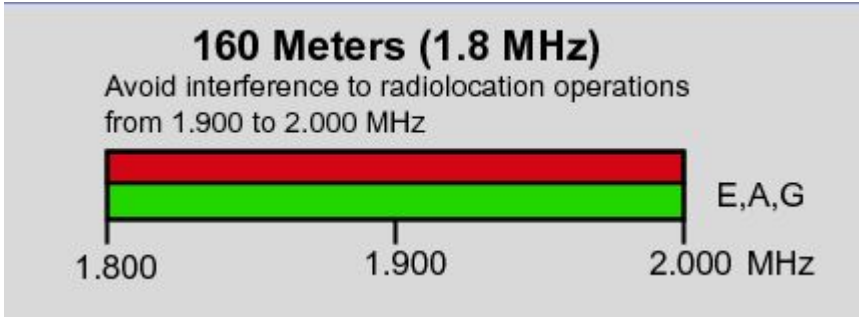
http://www.ae7q.com

1x2 & 2x1 callsign availability summary, by callsign region							
Callsign region	Currently available	Pending application	Expired < 2 yr	Canceled < 2 yr	Active		Total
					Normal	Vanity	
1	0	2	140	44	1590	2306	4082
2	0	8	218	38	1658	2160	4082
3	2	10	207	40	1572	2251	4082
4	0	9	185	39	1438	2411	4082
5	0	7	200	34	1505	2336	4082
6	4	7	241	47	1395	2388	4082
7	0	5	219	47	1409	2402	4082
8	2	5	254	42	1569	2210	4082
9	1	1	183	49	1583	2265	4082
10	0	7	214	38	1626	2197	4082
11	734	0	14	6	156	130	1040
12	2	0	13	2	120	97	234
13	85	1	14	5	222	189	516
Totals	830	62	2102	431	15843	23342	42610

http://wireless.fcc.gov/uls



HF Basics - Band Characteristics

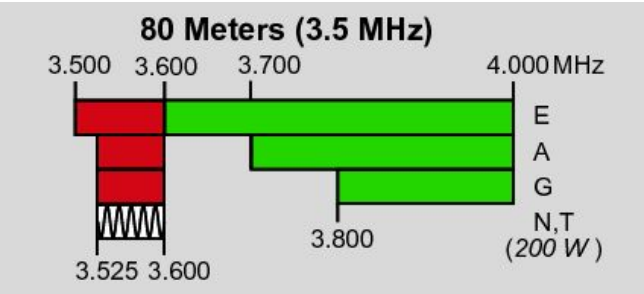


160m - Contest Band

Day : local (0 to 300 miles)
Night Summer : local
Night Winter : distant (+1000 miles)

Primarily an evening & night band, with the absence of lightning static crashes & good high antenna, you can talk to stations around the world.

HF Basics - Band Characteristics



75m/80m - Contest Band

Day : local (0 to 300 miles)
Night : local to distant depending on height of antenna

Lots of “local & regional” nets found on this band and “rag chewing” during evening & night hours. Can be noisy during summer months with static crashes. Good for in state QSO party contests or ARES nets because they are local.

HF Basics - Band Characteristics

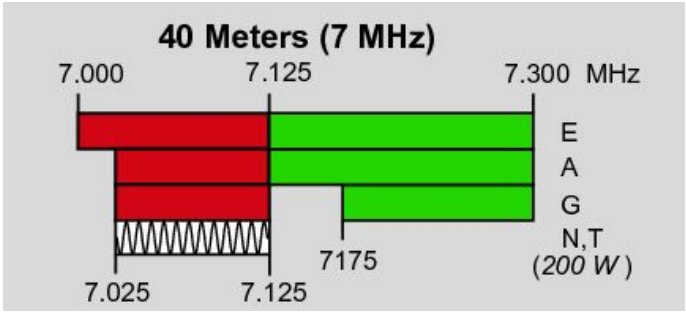
60m - 100W or less, worldwide band as of 2016, typically no contests on this band

Day : local (0 to 300 miles)
Night : regional to distant (500 to 1000+ miles)

Cluster of 5 specific frequencies that amateur radio shares with the US Govt'. Amateur radio are secondary users.
No contest activity, acts like 80 and 40 meter bands.
Channel 5 (5405.0) is the defacto "DX channel".

HF Basics - Band Characteristics

40m - Contest Band - Starter Band



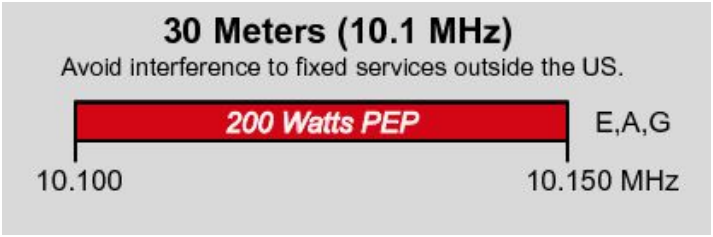
Day : regional (300 to 500 miles)
Night : distant (1000+ miles)

Depending on height of antenna, this band gets longer (goes further) as evening sets in. NVIS (near vertical incident skywave) as the antenna gets lower to the ground. Good for state QSO parties.

HF Basics - Band Characteristics

30m - 200W or less part of the WARC Bands (World Admin Radio Conf), no contests!

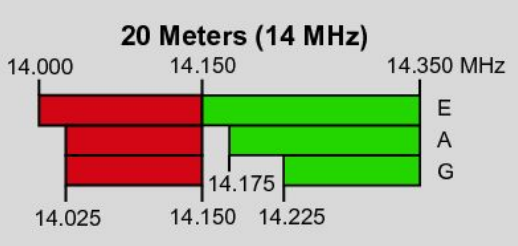
Day : regional (300 to 500 miles)
Night : distant (1000+ miles)



No contest band, acts like 80 and 40 meter bands. Must avoid interference to worldwide stations.

HF Basics - Band Characteristics

20m - Contest Band - Starter Band

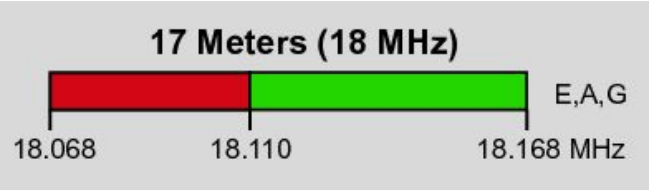


Day : regional to distant (500 to 1000+ miles)
Night : distant (1000+ miles)

The most popular band in amateur radio. Lots of DX contacts are made on 20m. ½ wave dipole above the ground is only 32 feet. Easy band to get a lot of contacts.

HF Basics - Band Characteristics

17m - Contest Band



Day : regional (300 to 500 miles)
Night : distant (1000+ miles)

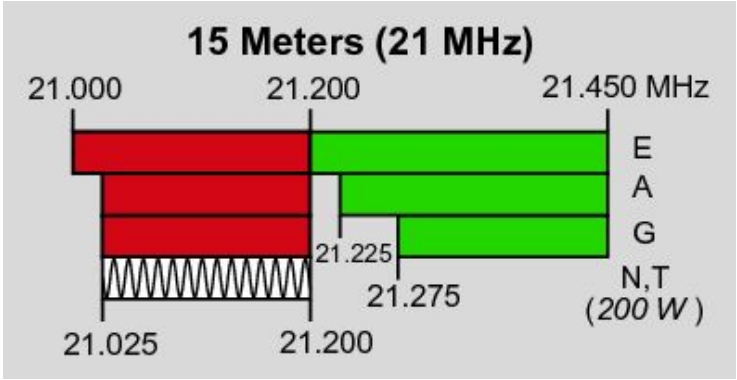
Very similar to 20m, very dependent on sunspots.

HF Basics - Band Characteristics

15m - Contest Band

Day : regional (300 to 500 miles)
Night : distant (1000+ miles)

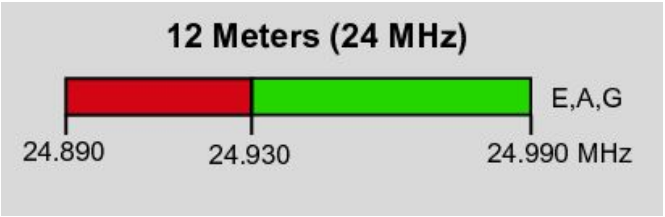
Acts like 20m but with less range.



HF Basics - Band Characteristics

12m - WARC Band

Day : regional (300 to 500 miles)
Night : distant (1000+ miles)

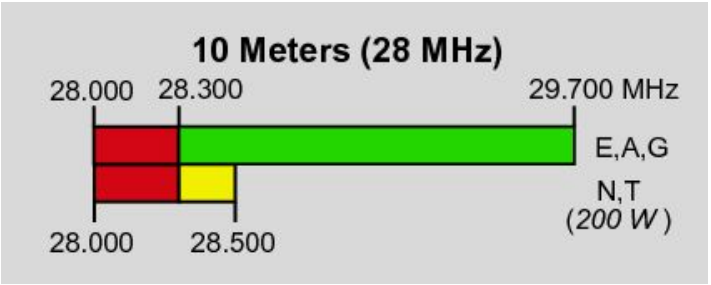


No contest band.

HF Basics - Band Characteristics

10m - Contest Band

Day : regional (300 to 500 miles)
Night : distant (1000+ miles)



Depends on sunspot cycles, active during the summer months.

Questions!