

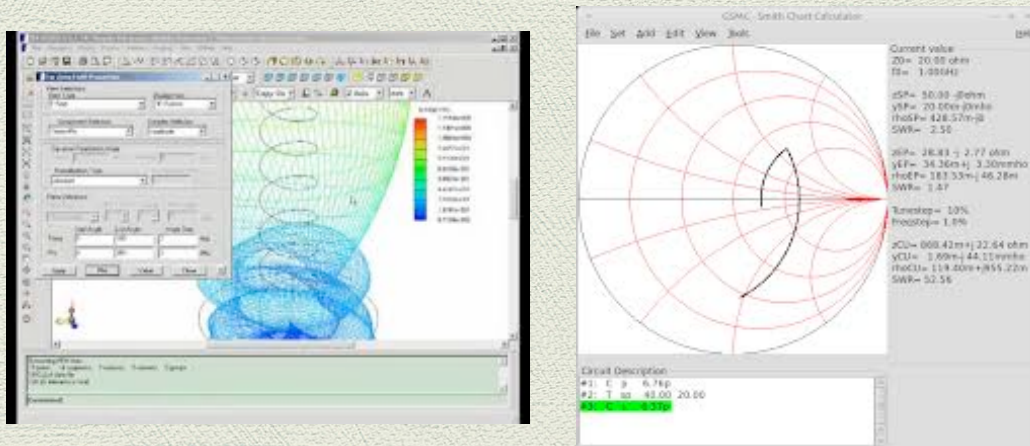
My Favorite HAM Radio Software

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Software for ...

- ◆ Antenna Design and Control
- ◆ Station Management
- ◆ Radio Control, Programming, and SDR
- ◆ Operating Modes
- ◆ Propagation, Beacons, and the Solar Cycle
- ◆ Logging, Log Analysis, Conversion
- ◆ Electronics and Circuit Design
- ◆ iOS and Android Applications
- ◆ Mobile Operation, APRS, and GPS

Antenna Design and Control



Antenna Design and Control

◆ EZNEC

QST September 2000, p. 66A quick review of this software.

Software: [minihttps://www.eznec.com/](https://www.eznec.com/)

Tutorials: <http://www.hamradiodeals.co.uk/forums/viewforum.php?f=46>

◆ NEC2Go

Simplified Nec2 modeling for amateurs and professionals.

<http://www.nec2go.com>

◆ MiniNEC Pro

QST February 1991, pp. 18-22 MININEC software is powerful, but you need to know its limitations.

<http://www.blackcatsystems.com/software/mininec-antenna-analysis-modeling-software.html>

◆ PstRotator

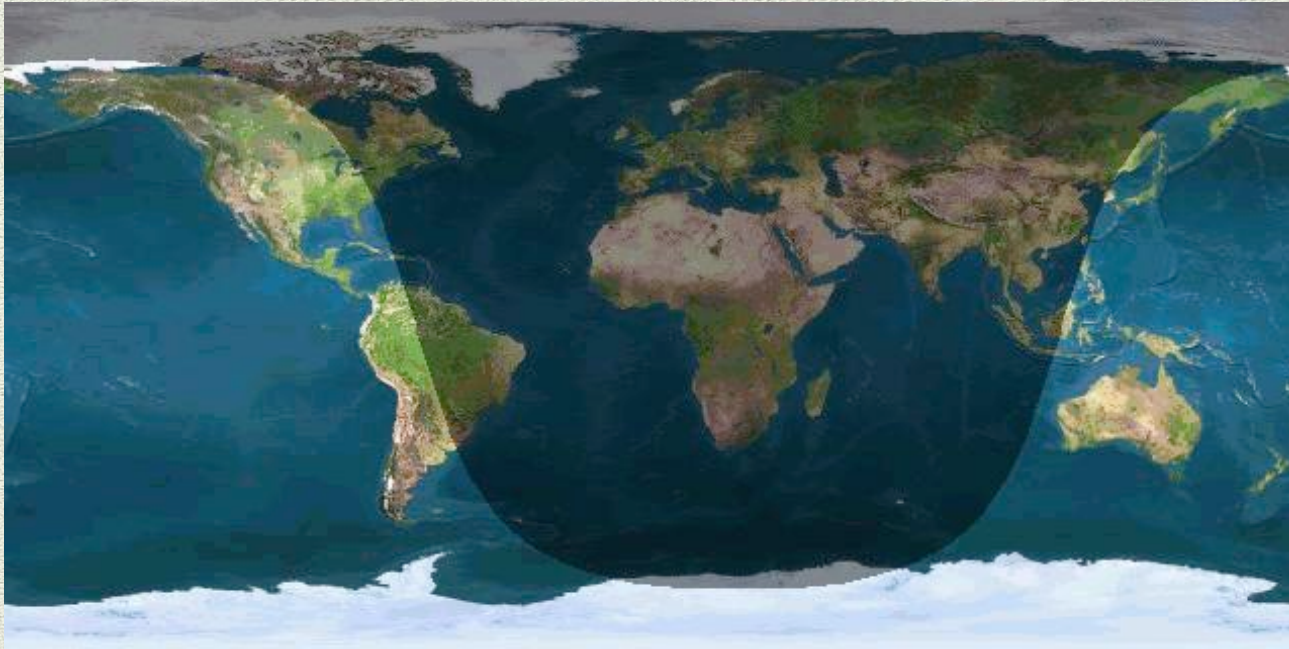
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The ARRL in the past has offered online classes on antenna modeling and antenna design.

Watch <http://www.arrl.org/online-course-catalog> for future class offerings.

Station & Time Management



Station Operation Essentials

- ◆ A quiet room
- ◆ Good lighting
- ◆ A very comfortable chair
- ◆ A small refrigerator to keep you hydrated
- ◆ A map of the world
- ◆ Clocks set to GMT and your local time
- ◆ A timer

Station Operation

- ◆ Grey Line software and a good time base.

<http://dx.qsl.net/propagation/greyline.html>

<http://www.xericdesign.com/earthdesk.php>

- ◆ ARRL, ICOM, and other offer nice band plan and related resources.

<http://www.arrl.org/band-plan>

http://icomamerica.com/en/amateur/amateurtools/2016_BandPlan.pdf

- ◆ Grid Square Locators

http://www.levinecentral.com/ham/grid_square.php

- ◆ DX Zone Maps

http://www.icomamerica.com/en/amateur/amateurtools/2013_itu_cq_worldmaps.pdf

Radio Control

- ◆ Radio control software is often provided by its manufacturer.
- ◆ **Ham Radio Deluxe** gives you radio control, logging, and digital modes all in one package.
<http://www.hrdsoftwarellc.com>
- ◆ **Commander** is a free application that controls up to 3 transceivers, switching between them manually or automatically based on frequency, and displaying frequency-dependent settings for devices like tuners and amplifiers.
<http://www.dxzone.com/cgi-bin/dir/jump2.cgi?ID=4541>

Radio Programming Software

- ◆ Radio Programming software is often provided by its manufacturer.
- ◆ CHIRP is a decent free programmer
<http://chirp.danplanet.com/projects/chirp/wiki/Home>
- ◆ RT Systems is the best commercial software
<https://www.rtsystemsinc.com>

Radio Frequency Resources

- ◆ The ARRL offers Travel Plus for Repeaters
<http://www.rtsystemsinc.com/TravelPlus-s/2181.htm>
- ◆ The ARRL offers the Net Directory in print, as well as an online searchable version.
<http://www.arrl.org/arrl-net-directory-search>
- ◆ Radio Reference is one of my favorite resources for finding frequencies to scan.
<https://www.radioreference.com>
- ◆ Chicago Area Radio Monitoring Associations (aka CARMA) is another great resource.
<http://www.carmachicago.com/>

Operating Modes

DigiPan: stands for "Digital Panoramic Tuning" and brings the ease and simplicity of PANORAMIC reception and transmission to PSK31 and PSK63 operation.

<http://www.digipan.net/>

MMRTTY: with Windows: <http://hamsoft.ca/pages/mmtty.php>

TRUTTY: A program for amateur radio digital communications via a sound card. Supported modes are RTTY (Baudot code), ASCII (7 or 8 bits), PSK31 (BPSK and QPSK), BPSK63, QPSK63, BPSK125, AMTOR-FEC (SITOR-B, NAVTEX), MultiFSK-16, MultiFSK-8. HF-PACKET and UHF-PACKET (AX25) are supported in KISS-TNC emulation mode. SELFEC SITOR, AMTOR-ARQ (SITOR-A) and DTMF-code decoding is also possible.

<http://www.dxsoft.com/en/products/truetty/>

MMSSTV By JE3HHT Makoto Mori: Slow Scan TV with Windows and Soundcard. For WinXP - Vista - Win7

<http://hamsoft.ca/pages/mmsstv.php>

MultiPSK 4.31.4 / Clock 1.11 / Multicom 1.1 / Multidem 2.5.1

The Swiss-Army-Knife of multi-mode software! Operating screen very congested! Practice is needed to use efficiently. http://f6cte.free.fr/index_anglais.htm

MixW: MixW is a multi mode multi functional software for every day logging and Contests. It has many useful features that make your QSO logging process almost a 100% automatic procedure.

<http://mixw.net>

MultiPSK

Phase Shift Keying modes: **BPSK:** BPSK31-63-125-250 / CHIP (64/128) / PSK10 / PSKFEC31 / PSKAM10-31-50, BPSK with SSTV: PSK63 F - PSK220F + DIGISSTV "Run", QPSK: QPSK31-63-125-250, 8PSK: VDL2, MPSK: MT63, PACKET BPSK1200-250-63-31 + APRS+ DIGISSTV "Run", MIL-STD-188-110A – 4285, HFDL, EPIRB-ELT-PLB beacons, ARGOS (beacons/satellites), AUTEX, ORBCOMM

On-Off Keying Modes: CW / CCW-OOK / CCW-FSK / QRSS

Amplitude modulation mode: APT faxes (NOAA satellites)

Frequency Shift Keying modes: PACKET: 110-300-1200 bauds + APRS+ DIGISSTV "Run", PACTOR 1 / AMTOR FEC-Navtex / AMTOR ARQ / SITOR A, ASCII / RTTY 45-50-75-100-110-150-200 / SYNOP + SHIP / IEC 870-5, 1382 / BIIS / GMDSS DSC / ATIS / ACARS (VHF) / DGPS / NWR SAME / ARQ-E / ARQ-E3

Multi Frequency Shift Keying modes: MFSK8 / MFSK16/32/64 (+SSTV), OLIVIA / Contestia / RTTYM / VOICE, THROB/THROBX, DominoF / DominoEX / THOR, PAX / PAX2, Automatic Link Establishment (see <http://www.hflink.com>) MIL-STD-188-141A+ , ARQ FAE / ALE400 + ARQ FAE, , DTMF, SELCAL, JT65 (A B and C), LENTUS, COQUELET

Base band modes: POCSAG, AIS, Packet 9600 bauds (G3RUH)

Hellschreiber modes: FELD HELL / FM HELL(105-245) / PSK HELL / HELL 80

Graphic modes: HF FAX / SSTV / PSK SSTV modes (mentioned above) / MFSK16 SSTV (mentioned above),

PPM (by positioned pulses) modes: mode S (ADS-B included)

DSP modes: Filters / Analysis / Binaural CW reception, RTTY, CW, BPSK31, BPSK63 and PSKFEC31 Panoramics,

identifiers: Video ID / RS ID / Call ID, TCP/IP digital modem, Integered SDR demodulator/modulator

Propagation, Beacons, and Solar Cycle

WSPR implements a protocol designed for probing potential propagation paths with low-power transmissions. Normal transmissions carry a station's callsign, Maidenhead grid locator, and transmitter power in dBm

<http://physics.princeton.edu/pulsar/K1JT/wspr.html>

JT65-HF Amateur Radio software for reception/transmission of JT65A protocol w/ an emphasis upon its usage in the HF Amateur Bands.

<http://sourceforge.net/projects/jt65-hf>

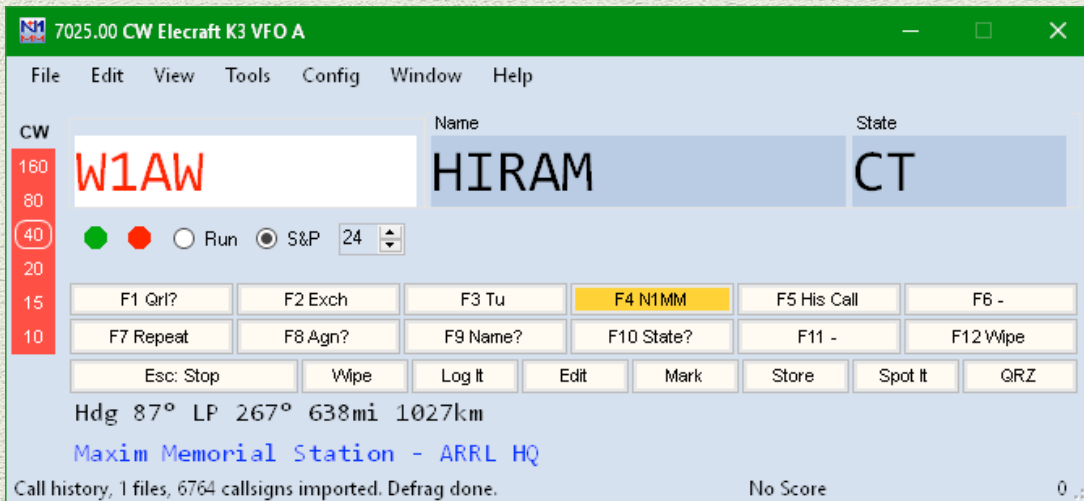
WSJT ("Weak Signal Communication, by K1JT") offers specific digital protocols optimized for meteor scatter, ionospheric scatter, and EME (moonbounce) at VHF/UHF, as well as HF skywave propagation. The program can decode fraction-of-a-second signals reflected from ionized meteor trails and steady signals 10 dB below the audible threshold.

<http://physics.princeton.edu/pulsar/K1JT>

Logging, Log Analysis, Conversion

- ♦ Most modern logging software can log QSOs and export in many formats, making the need for log conversion utilities less important. Most even integrate with computer control of radios and antenna rotators.
- ♦ We all know and love N3FJP's logging software (see next slide).
See: <http://www.n3fjp.com>
- ♦ N1MM's is another very popular logger. (see slide after that)
See: <https://n1mm.hamdocs.com/tiki-index.php>
- ♦ ARRL's Logbook of the World is a must. See: <http://www.arrl.org/logbook-of-the-world>
- ♦ There are a number of programs for analyzing logs from ARRL and other contests See: <http://tinyurl.com/39pjtx>
- ♦ EI8C offers Log-View. See: <http://www.mapability.com/ei8c/logview/index.php>

Logging Programs (N3FJP)



Tom N1MM (and other developers) have created N1MM Logger+, which is a world class ham radio contest logging software package. It is used by a big majority of DX'ers and contesters. It supports CW, phone and digital modes. The program can be used with all versions of Windows.

The program's features are continually changing, and the manual may sometimes lag a little behind the code. When this happens you should consult the release notes for information on the newest features of the program that may not be in the manual quite yet.

Logging Programs (DXKeeper)

DXKeeper by Dave Bernstein AA6YQ logs QSOs, tracks award status, generates QSL cards & labels, addresses envelopes, uploads QSOs to eQSL.cc & LotW, and downloads progress info from eQSL.cc and LotW. It can reference the RAC, Hamcall, and QRZ callbooks as well as the QRZ.com web site to fill in data when logging, or to update already-logged QSOs. DXKeeper automatically interoperates with all members of the DXLab Suite, including Commander (transceiver control and bandspread for Alinco, Elecraft, FlexRadio, Icom, Kachina, Kenwood, TenTec, Yaesu), DXView (world map, rotator control), WinWarbler (PSK, RTTY, CW, Phone) and SpotCollector (DX and WWV spots). It also interoperates w/ MMTTY, MMVARI, MMSSTV, MultiPSK, MixW, DX Atlas, and Ham Radio Deluxe.

The screenshot shows the DXKeeper 8.8.6 interface. The title bar reads "DXKeeper 8.8.6 [CC,PF,DXV,SC] - AA6YQ.mdb : 18357 QSOs". The main window has several tabs: "Log QSOs", "QSL", "Check Progress", "my QTHs", "Import QSOs", and "Export QSOs". The "Log QSOs" tab is active, showing a form for logging a QSO. The form is titled "QSO: Rwanda (1:55)". The fields are filled with the following information:

call	9XOTL	name		QTH	
mode	CW	via		tx freq	14.00781
sent	599	rcvd	599	bx band	20M
power	1500	code	454	rx freq	14.00697
		DXCC	9X	begin	2010-07-28 00:49:39
		entity	Rwanda	end	2010-07-28 00:51:34

Below the form is a toolbar with buttons: New, Save, Undo, CBA, Delete, Report, Plot, 18357, Adv, RAT, Capture, Config, Help. Below the toolbar is a table of QSOs:

Call	DXCCPrefix	Starting UTC	Mode	Freq	Freq RX	RST S	RST R	CQ
UA3YFL	UA	2010-07-24 03:21:40	CW	14.010	14.010	599	599	16
RU3DX	UA	2010-07-24 03:22:06	CW	14.010	14.010	599	599	16
RA3DUO	UA	2010-07-24 03:23:02	CW	14.010	14.010	599	599	16
YU2AX	YU	2010-07-24 03:24:35	CW	14.010	14.010	559	599	15
9XOTL	9X	2010-07-28 00:49:39	CW	14.008	14.007	599	599	36

At the bottom, there is a "Sort" section with radio buttons for "UTC", "Call", and "Adv". The "Filter" is set to "None". Below the filter are several buttons: Call, DXCC, Date, Since, Sel, LotW, Broke.

iOS and Android Applications

- ◆ Echolink (All)
- ◆ Ham Radio Reference (iOS & Windows mobile)
- ◆ Ham Square (All)
- ◆ HF Beacon (iPhone)
- ◆ Morse Code Trainer (Android)
- ◆ MUF Predictor (Android)
- ◆ QRZ Call Sign Search (All)
- ◆ Shortwave Radio Schedule (Android)
ShortWave Broadcast Schedule (iOS)

Mobile Operation, APRS, and GPS

[MacAPRS](#) - Macintosh automatic position reporting system, developed by Bob Bruninga, WB4APR, to track boats and vehicles using GPS and packet radio. MacAPRS was written by Keith Sproul, WU2Z and Mark Sproul, KB2ICI

[UI-VIEW](#) ^{pop} - UI-View is an APRS client that runs on Windows. This application differs from most APRS software in that it isn't designed just to be used with TNCs in terminal mode. UI-View also supports TNCs in KISS mode, AGWPE host mode and BPQ host mode

[UI-Point 32](#) - Add-on for UI-View32 that allows you to plot APRS stations on Microsoft MapPoint 2002 maps.

[D-PRS](#) - D-PRS converts these position reports from remote D-STAR radios to an APRS format. Windows .net application

<http://www.aprs.org>

“So What is Your
Favorite Software”

??? *Questions* ???