

# ***Santa Clara County ARES/RACES***

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## **WIFI / MESH NETWORKING INFORMATION**

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### **Presentations**

- [Amateur Radio Data Networking in Event/Incident Communications](#) (PDF - 4.9 MB) Presented to SPECS on 01/31/2015, by Michael Fox, N6MEF
- [Introduction to Mesh Networks for Amateur Radio](#) by Tim Howard, KE6TIM, 02-Mar-2015 (PDF - 2.1 MB)
- [Basic Outdoor WiFi Network Planning](#) by Michael Fox, N6MEF, 16-May-2014 (PDF - 3.6 MB)

### **Documentation**

- [Mesh Client and Server Handbooks](#) (PDF) by Jim Oberhofer, KN6PE, Cupertino ARES/RACES
- [Device-to-Device Linking with BBHN Software on Ubiquiti Radios](#) (PDF - 2 MB) by Michael Fox, N6MEF, 04-May-2015
- [Power Options for Field WiFi Stations](#) (PDF - 1.7 MB) by Michael Fox, N6MEF, 04-Jun-2015
- [WiFi Free Space Path Loss](#) (PDF - 67 kB) by Michael Fox, N6MEF, 24-Apr-2015
- [WiFi Part 15 Power Limits](#) (PDF - 86 kB) [[Excel Version](#)] by Michael Fox, N6MEF, 24-Apr-2015

### **Training**

- [Workshop: Introduction to WiFi Networking](#)

### **Resources**

#### **Mesh Software**

There are currently two software development efforts working on mesh networking software for hams. Be sure to read about hardware compatibility on the web site of the software you plan to use before you purchase any equipment.

#### **Broadband HamNet (BBHN)**

The original mesh software for hams. Most hams in Santa Clara County currently use this software.

## [Amateur Radio Emergency Data Network \(AREDN\)](#)

Some of the BBHN developers saw things differently from the rest of the group so they started their own software development effort.

## Application Resources

### [Asterisk](#)

Open source IP phone system

- [Setting up Asterisk on Raspberry Pi for Broadband Hamnet](#) (YouTube)
- [Asterisk: The Definitive Guide](#) -- O'Reilly Media

### [Pidgin](#)

Open source Instant Messaging system

## Network Design/Planning Resources

### [Frequency Allocation Charts by KB9MWR](#)

Shows the overlaps between Amateur, Part 15, and other frequency allocations.

### [Ubiquity Wireless Link Calculator](#)

Basic link analysis with pull-down menus for Ubiquity radios.

### [MikroTik Wireless Link Calculator](#)

Basic link analysis for generic radios/antennas

### [LigoWave Wireless Link Calculator](#)

Basic PTP and PTMP link analysis with pull-down menu for LigoWave radios plus custom option.

### [3-D Fresnel Zone Calculator](#)

Generates a KML file for viewing with Google Earth.

### [Antenna Placement Calculator](#) (.xlsx - 14 kB)

Calculates several parameters of interest when mounting antennas. By Michael E. Fox, N6MEF

### [HeyWhatsThat](#)

Variety of tools to look at panoramas from a specific point, coverage from a specific point, and path profiles between two points, including first Fresnel zone.

### [Radio Mobile Online](#)

Full Longley-Rice propagation modeling software. Can export path information to Google Earth to visualize line-of-site and Fresnel zone.

### [802.11n Primer](#) (Fluke Networks)

### [Wireless Networking in the Developing World](#)

An excellent read! Covers a wide gamut of subjects.

## User Group and Technical Support

### [Santa Clara County ARES/RACES Mesh Network Users Group - scc-mesh](#)

This Yahoo group is available for users in Santa Clara County to discuss and get help on mesh networking issues specifically related to WiFi and mesh networking in Santa Clara County. This is NOT a general discussion group for all ham

users. *Click above and follow the instructions to join.*

[BBHN Forums](#)

Discussion and support forums on the Broadband-Hamnet web site.

[AREDN Forums](#)

Discussion and support forums for the AREDN web site.

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If you have Mesh Networking Information that you would like to have included here,  
please contact the [Webmaster, Phil Henderson](#)

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[Web Site Home Page](#)

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