



Connecting to the 11 Cats Network

KM5Y

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Introduction

Thank you for your interest in participating in our 11 Cats nets! We host a variety of nets on a weekly basis. For our current net schedule please refer to <https://www.11cats.org/amateur-radio/>. Our goal is to provide a friendly venue for licensed ham radio operators to communicate using the English language.

Our network is based on Allstar with EchoLink, IRLP and our urf311.11cats.org server supports D-Star, D-Star Terminal Mode, Yaesu System Fusion (YSF), Digital Mobile Radio (DMR), M17, MXDN, and P25.

We stream to Broadcastify <https://www.broadcastify.com/listen/feed/42257> as well. A web browser based player is located on <https://www.11cats.org>, scroll down to “Ways To Connect” and press the play button on the 11CATS Live Feed.

11 Cats Etiquette

Our motto is freedom of speech with respect for other opinions, while complying with FCC Part 97 Amateur Radio Service Rules, of course. Please be polite at all times. When there’s a talking point you want to touch on, follow the net controller instructions on comments. Some net controllers will permit comments directed through net control, others will ask that you write down the points you want to make and then make them when it is your turn.

In addition, the usual rules of sane civil discourse apply:

- Treat others as you want to be treated.
- Listen to others without interrupting them.
- Sarcasm can help make a point, but don't forget that it can be misinterpreted.
- Keep your personal information private.
- Remember that what has been said, can not be unsaid.
- Lastly, don't forget about the 3 minute time out timer. We want to hear everything you have to say, so all you have to do un-key every couple minutes to allow a system reset.

Network Voice Traffic Priority

1. Emergencies (we will do our best to relay and assist)
2. Scheduled Net (the net scheduled for the current time slot)
3. Ad-Hoc “Pop-Up” Nets (may or may not have a net controller)
4. General QSOs (no time limit, just give up the channel to higher priority traffic)

Voice Quality

All licensed ham operators are welcome on our network. Everyone appreciates perfect subjective “in the room” 59 quality, however everyone is learning (including us!) so for the audio comfort of net listeners, during a scheduled net, we ask for a minimum subjective evaluation by our net controller “signal report” of at least to participate (Readability and Signal Strength). Please do not be offended by the net controller stating that you are less than 47, we’ve all been there at one time or another! Time permitting they will help you adjust your settings to acceptable quality. This may involve you adjusting your microphone gain, staying that “just right” distance from your microphone, no background noise, a stable internet connection, etc.

In general, all our participants appreciate:

Good Fidelity

No Background Noise

No Echo

Connections

There are a lot of ways to “get it done” and all of them require an internet connection. We’ll start off with general connection specifications, then illustrate examples ranging from Radio Only, Hotspots, Microsoft Windows, Apple MacOS, Apple IOS, Google Android and Debian Linux.

General connection specification

(Note: Conference servers will be disconnected without prior permission, and please be diligent by removing secondary connections from your end).

The following protocols are bridged at our hub (please do not bridge them together on your end). The order is alphabetical and not intended as an endorsement of one protocol over another.

AllStar Nodes

Connect to 559385 or 559386 using AllStarLink authentication (<https://www.allstarlink.org>). Non-standard port UDP 4573 is in use.

DMR

MMDVM Server address is urf311.11cats.org (or xlx311.11cats.org , both DNS names resolve to the same IP address). You will need your callsign and numeric DMR ID id (<https://www.radioid.net/>). Standard UDP port 62030. TS 1, Talk Group 4001 is 11 Cats (Module A), Private call 4000 to disconnect, group call to 4001 to connect. If you are cross mode, route to 4001.

D-Star

Set your gateway urf311.11cats.org (or xlx311.11cats.org , both DNS names resolve to the same IP address), similarly the reflector name is URF311 (or XLX311), three modules configured, Module A is 11 Cats Network, Module B is administrative and Module C is for testing. Standard UDP ports 12345 - 12346 (Icom Terminal presence and request port), 20001 (DPlus protocol), 30001 (DExtra protocol), 30051 (DCS protocol), 30062 (CCS port) and 40000 (Icom Terminal DV port) are in use. D-Star callsign registration is at (<https://regist.dstargateway.org>).

EchoLink Conference Rooms

Connect to *11CATS* (186343) and *11CATS2*(210595) using EchoLink authentication (<https://echolink.org>) Standard UDP ports 5198 and 5199 and TCP 5200 in use.

IRLP

Connect your IRLP node to either one of our experimental IRLP nodes, 0107 or 0112 (*11CATS* and *11CATS2* respectively).

M17

Set your gateway to urf311.11cats.org (or xlx311.11cats.org , both DNS names resolve to the same IP address) and connect to port 17000.

NXDN

Set your gateway to urf311.11cats.org (or xlx311.11cats.org , both DNS names resolve to the same IP address) and connect to port 41400.

P25

Set your gateway to urf311.11cats.org (or xlx311.11cats.org , both DNS names resolve to the same IP address) and connect to port 41000.

YSF

Server is URF311, (or XLX311), YSF registration id is 00311, address is urf311.11cats.org (or xlx311.11cats.org , both DNS names resolve to the same IP address), DG 10 is 11 Cats (URF311 Module A), standard UDP port (42000).

Examples

The order is alphabetical and not intended as an endorsement of one software and/or hardware package over another.

Android

Allstar

<https://play.google.com/store/apps/details?id=org.dvswitch>

EchoLink

<https://play.google.com/store/apps/details?id=org.echolink.android>

DV (Digital Voice) Software

If you have a Kenwood D75, check out <http://www.pa7lim.nl/bluedv-connect/>

Apple iPhone & iPad (IOS)

Allstar

<https://repeaterphone.com> supports Allstar authentication and Echolink.

EchoLink

<https://apps.apple.com/us/app/echolink/id350688562>

OpenSpot

The SharkRF app is available in the Apple App Store

Apple MacOS

Allstar

<https://apps.apple.com/us/app/transceive/id1529395199?mt=12>

EchoLink

<https://apps.apple.com/us/app/echoham/id873302145?mt=12>

A web only application is available as well: <https://webapp.echolink.org>

DV Software

There are a lot of options available, consider taking a look at <https://github.com/nostar/DroidStar>.

Hotspots

Hotspots range from being able to use a VHF/UHF radio hosting a AllStar node and connecting node to node to being able to use software application and/or a digital capable radio to connect to a wide variety of networks via digital modes.

OpenSpot 4 Pro / Hotspot with vocoder

The OpenSpot 4 Pro (<https://www.sharkrf.com/>) has a hardware vocoder chip installed. Using it gives you the ability to use the SharkRF application (<https://www.sharkrf.com/products/sharkrf-link-app/>) as a transceiver. SharkRF provides software for Microsoft Windows, Apple iPhone and iPad (App Store), Apple Mx series computers (iPad emulation, or you can use the Beta App), Linux, and Android.

Also, you can use most digital capable radios described in the next section.

OpenSpot / Hotspot without vocoder options

Please refer to (<https://manuals.sharkrf.com/openspot4/en/setting-up-your-transceiver.html#page-top>) for the OpenSpot 4 or (<https://www.sharkrf.com/products/>) for legacy devices.

PI-Star

Pi-Star (<https://www.pistar.uk/index.php>) is a software image built initially for the Raspberry Pi (produced by the Raspberry Pi Foundation). The design concept is simple, provide the complex services and configuration for Digital Voice on Amateur radio in a way that makes it easily accessible to anyone just starting out, but make it configurable enough to be interesting for those of us who cant help but tinker.

SHARI

SHARI (SA818 Ham Allstar Radio Interface) is a ham construction project designed by N8AR that implements a Raspberry Pi hosted Allstar node using a NiceRF SA818 embedded UHF (420 – 450 MHz) or VHF (144-148 MHz) radio module. Please refer to <https://kits4hams.com/> for all options.

Radio Only (no computer required)

D-Star Terminal Mode (IC-705, IC-9700)

The IC-705 and IC-9700 have built in WiFi. The ICOM HT's with D-Star that support terminal mode have to connect to an Internet connected Microsoft Windows notebook to supply a connection to the HT. If you have a notebook computer available consider using EchoLink or AllStar capable software applications to connect to us.

Using an IC-705 for example:

Connect to a local WiFi network that allows devices to open inbound ports or manually forward UDP Port 40000 from your router that has a public Internet address to your radio IP address and set your local DHCP server to make sure your radio always gets the same IP address.

In Menu, DV Gateway, Internal Gateway Settings:

1. Configure the DV gateway to urf311.11cats.org (or xlx311.11cats.org , both DNS names resolve to the same IP address)
2. Set Terminal Mode Callsign, if you don't have an unused callsign, add an eighth letter suffix to yours at (<https://regist.dstargateway.org>) for example, if your normal D-Star call is AB8CDE Z (don't forget the space is required), then find an unused suffix, such as AB8CED Y.
3. Set Gateway Type to Global
4. Set UDP Hole Punch to ON if your router has PnP enabled
5. Go up one menu level (the curved arrow in the lower right of the screen) and make sure Gateway Select is set to use Internal Gateway (WLAN)
6. Tap <<Terminal Mode>> to put the radio into terminal mode. FYI - When you want to exit terminal mode that menu position will have <<Normal Mode>> to select.
7. Tap to the right of the TO (on the right side of DV on the screen), in the "TO SELECT" menu scroll to find "Direct Input (RPT)" and enter (no quotes): "/URF311A"
8. Key MIC once to connect, you should see a magenta up arrow and a green down arrow appear in the upper left part of your radio screen with no red X's.
9. Listen to make sure the channel is clear then state your callsign to test.
10. To exit <<Terminal Mode>> press the Menu button below the screen to the left, tap "DV GW" and select <<Normal Mode>>

Linux

Allstar

Please take a look at <https://github.com/nostar/DroidStar>, for security reasons we only support Allstar authentication which DroidStar does not do. However, you could build an AllStar node then use it to connect to us and use DroidStar or other applications like it to connect to your node.

DV Software

There are a lot of options available, consider taking a look a <https://github.com/nostar/DroidStar> and http://dvswitch.org/DVSwitch_install.pdf

EchoLink (Q-tel)

<https://kd9cpb.com/qtel>

A web only application is available as well: <https://webapp.echolink.org>

OpenSpot Pro

<https://www.sharkrf.com/products/sharkrf-link-app/>

Microsoft Windows

AllStar

Please review [Setup/Download IAXRpt – AllStarLink Wiki](#), for security reasons we only support Allstar authentication which IAXRpt does not do. However, you could build an AllStar node then use it to connect to us and use IAXRpt to connect to your node.

Zoiper is another option [Download Zoiper 5, a free VoIP softphone:: Zoiper](#), for security reasons we only support Allstar authentication which Zoiper does not do. However, you could build an AllStar node then use it to connect to us and use Zoiper to connect to your node.

Digital Voice Software

There are a lot of options available, consider taking a look at <https://github.com/nostar/DroidStar> and <http://www.pa7lim.nl/peanut/>

EchoLink

EchoLink is a great and easy way to connect to our EchoLink Conference Server. Please review [Introducing EchoLink](#), it will describe the system to you. Then follow the instructions on [Download EchoLink](#), run the software to register your callsign and then follow the instructions to validate your callsign at <https://echolink.org/validation/>

A web only application is available as well: <https://webapp.echolink.org>

OpenSpot Pro Client

<https://www.sharkrf.com/products/sharkrf-link-app/>

Yaesu FT3/FT5 with PC connection kit

<https://www.yaesu.com/> is a good place to get started.