

iaxRpt, DVSwitch Mobile, and Zoiper Repeater Access

January, 2019 – PCs, Android, and Apple devices are included in this writeup.

May, 2019 – iaxRpt for Android has been updated and renamed DVSwitch Mobile.

Repeater controllers at the Purple Woods site consist of a PC that can be accessed remotely through the internet by using iaxRpt / DVSwitch Mobile or Zoiper client software. On the internet side, the controllers are called nodes. Your client computer can be:

- a Windows PC or a Linux or MAC computer running Windows emulation software
- an Android device such as a cell phone or tablet, or
- an iOS device such as an iPhone or iPad

We recommend that you run iaxRpt or DVSwitch Mobile software wherever possible, for example on Windows or Android devices, and run Zoiper software on iOS devices where iaxRpt is not available. iaxRpt or DVSwitch Mobile has a Push To Talk function, where Zoiper does not. In addition, Zoiper is not always successful on some Android products.

Availability

iaxRpt – runs on Windows and Linux devices.

DVSwitch Mobile – runs on Android devices.

Zoiper – runs on Windows, Linux, MAC, Android, and iOS devices.

Setting up your Windows computer with iaxRpt

You can use the following procedures to:

- download and install iaxRpt on your PC,
- set up the program options, and
- talk through the repeater from your PC.

To download and install iaxRpt

iaxRpt for Windows is a push to talk radio dispatch client that allows a full duplex voice connection to Allstar. It allows voice communications with any host controller (node) it is connected to and has the ability to send DTMF-like commands.

1. Download the program from:

<http://lists.hamvoip.org/pipermail/arm-allstar/2019-March/011590.html>

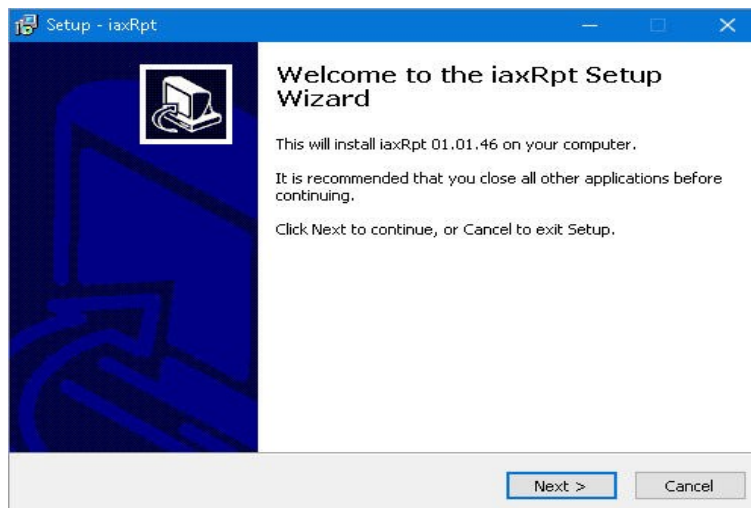
or

https://wiki.allstarlink.org/wiki/Setup_IAXRPT_use

These locations have the latest version of the program.

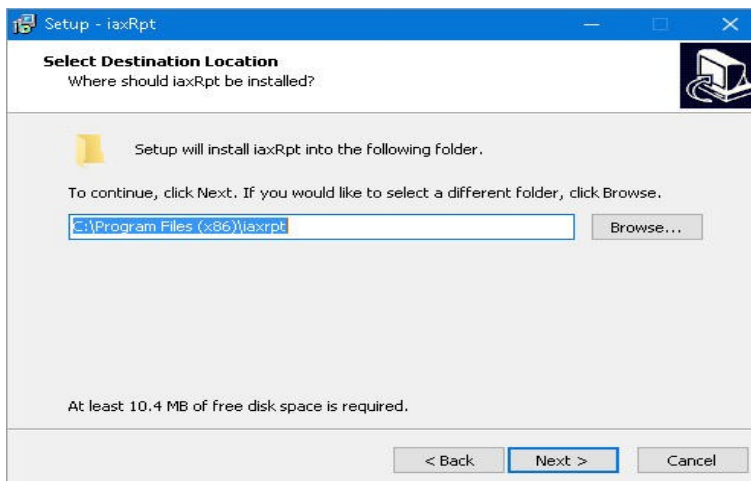
2. If you download the zipped version of the program, you must unzip it before installing it. This is not necessary if you download the .exe version. Double click the .exe file to install it.
3. Depending on your operating system, a window may appear asking you to allow the app to make changes to your PC.

When you click **Yes**, the Setup Wizard appears.



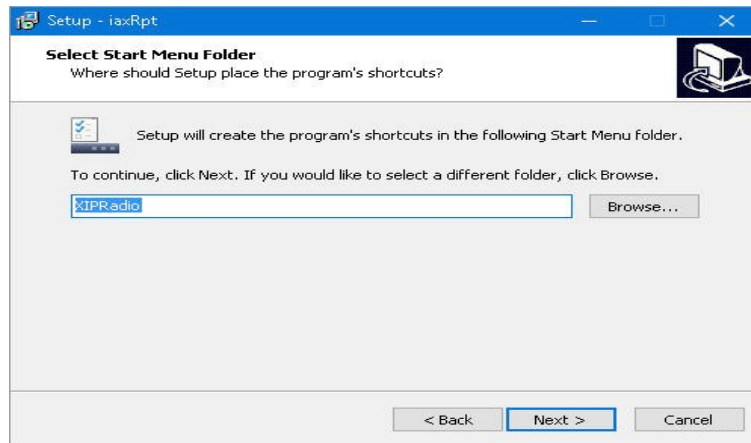
4. Click **Next**.

The Select Destination Location window appears.

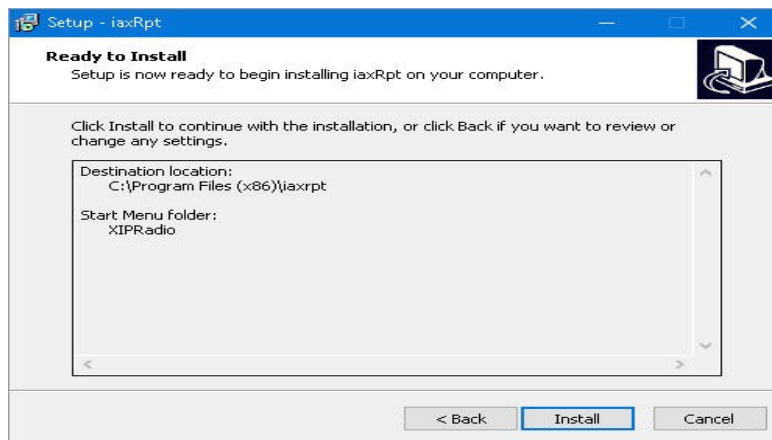


5. Click **Next** to select the default location.

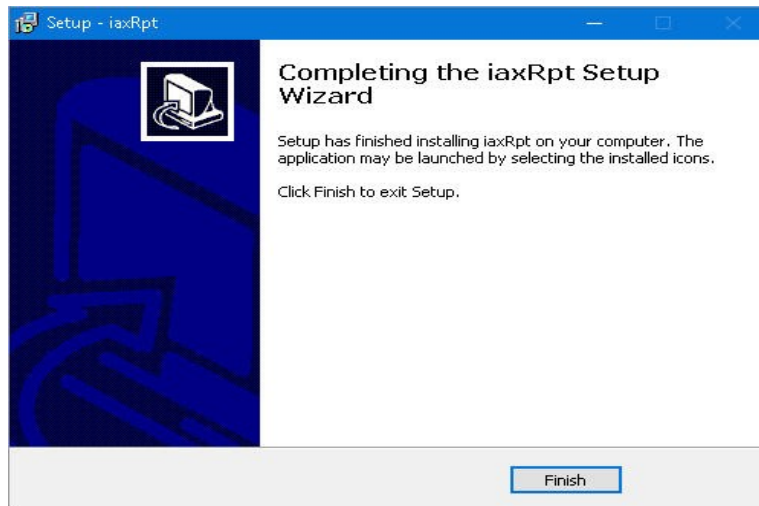
The Select Start Menu Folder window appears.



6. Click **Next** to select the default folder.
The Ready to Install window appears.

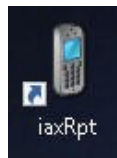


7. Click **Install**.
The program installs and the Completing the iaxRpt Setup Wizard window appears.



8. Click **Finish**.

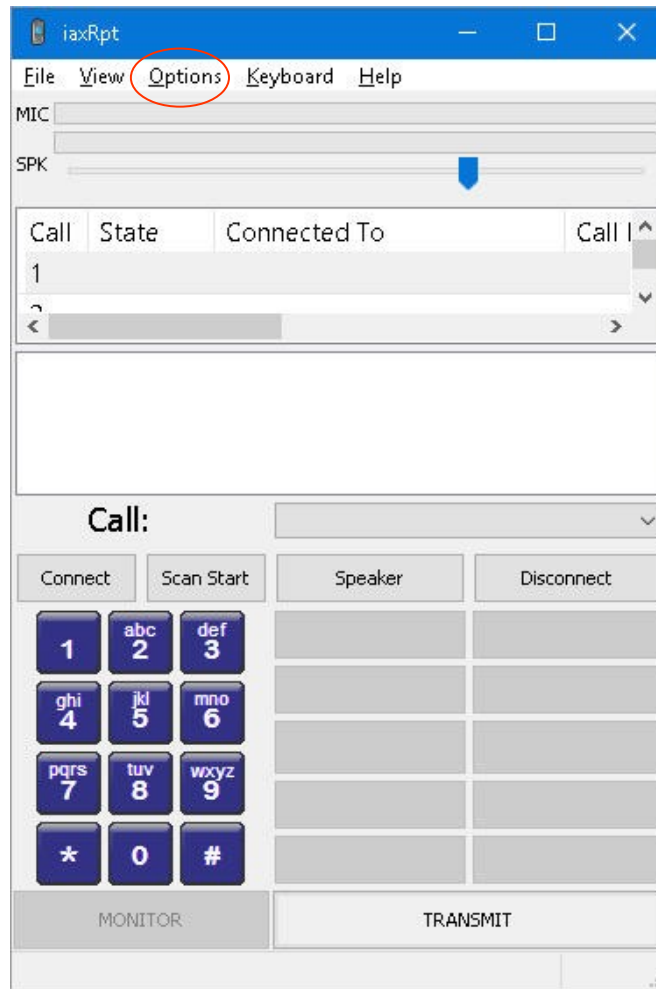
An iaxRpt shortcut appears on your desktop.



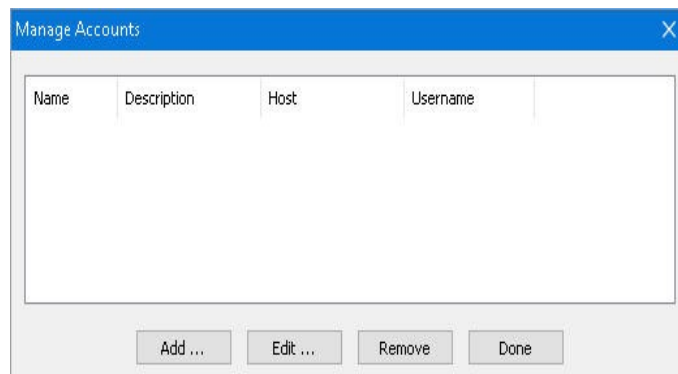
To set up the program options

You must add an account and set up the options to access the host controller PC. The controller for VE3NAA is used in this example.

1. Double click the **iaxRpt** shortcut on the desktop.
The iaxRpt main window appears.

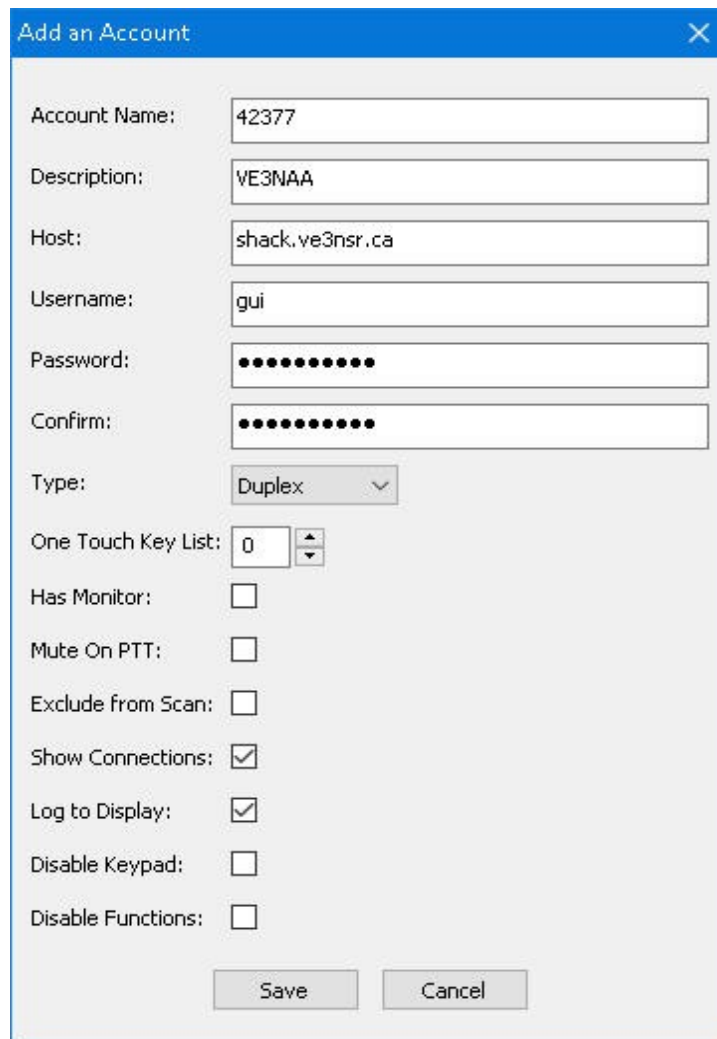


2. Click **Options > Accounts**.
The Manage Accounts window appears.

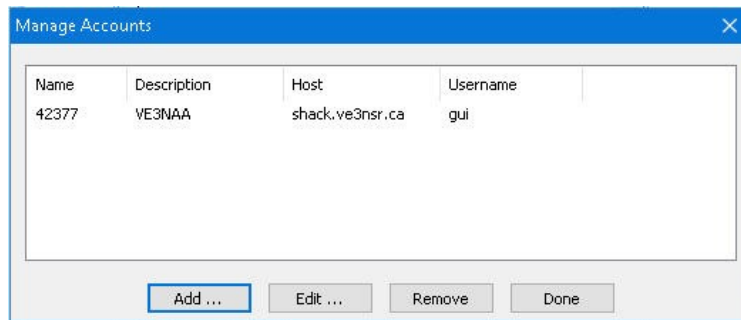


3. Click **Add ...**

The Add an Account window appears.



4. Fill in the fields as above for VE3NAA. Contact an NSARC repeater committee member for the **Password**. Select **Duplex** as the type. Click **Save**.
The Manage Accounts window appears.



5. Click **Done**.

The iaxRpt main window appears with **VE3NAA** in the Call drop-down box.

You can exit the program or continue to use it from here.

To add the controller for VE3OSH, repeat the above procedure and add a second account. Fill in the fields on the **Add an Account** window as follows:

Account Name: **27838**

Description: **VE3OSH**

Host: **shack.ve3nsr.ca** (same as VE3NAA)

Username: **gui** (same as VE3NAA)

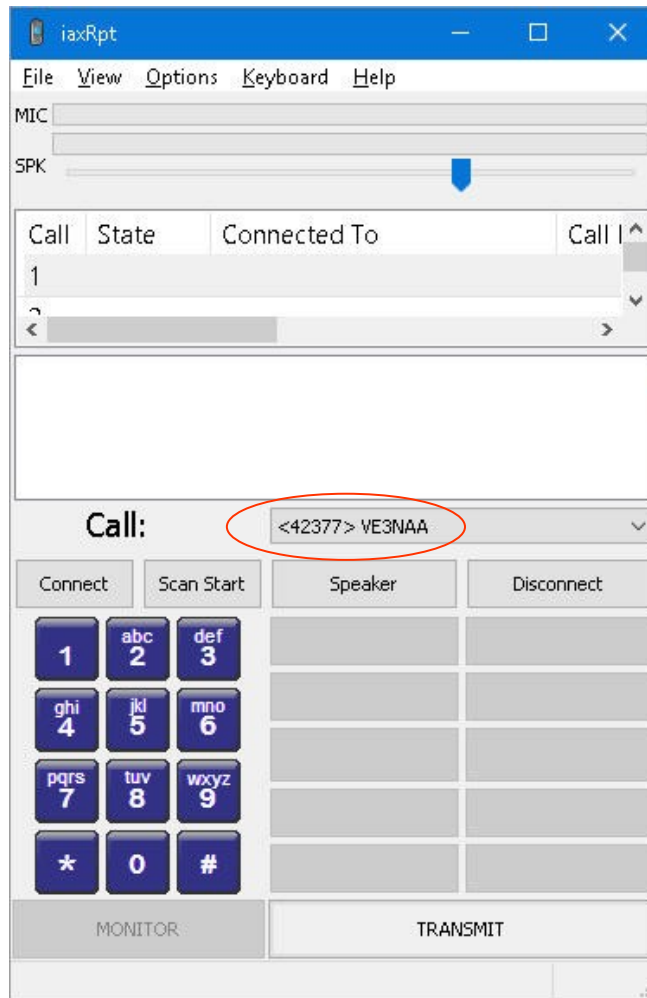
Password: (same as VE3NAA)

Type **Duplex** (same as VE3NAA)

To talk through the repeater from your PC

You can select the node, use PTT, and set up the sound levels as follows:

1. If the program is not running, double click the **iaxRpt** shortcut on the desktop.
The iaxRpt main window appears with **VE3NAA** in the Call drop-down box.

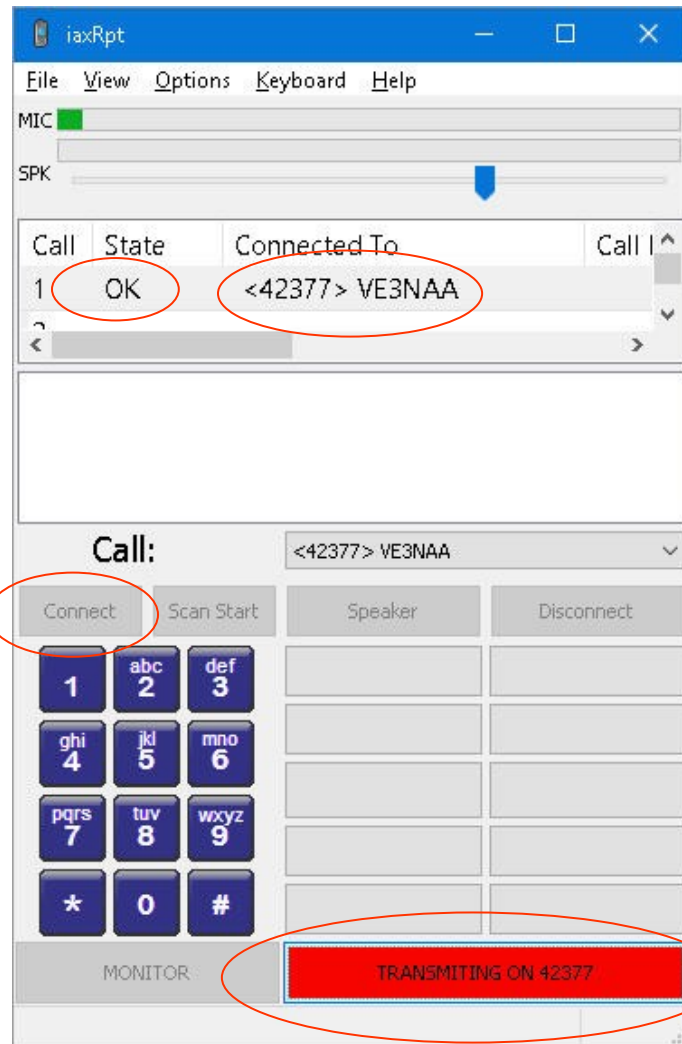


2. Select a node from the Call drop down list.

Note: There is only one node shown in this example (VE3NAA).

3. Click **Connect** to connect to the host controller.

The host connects and is displayed in the Connected To field. The State field displays **OK**. If **OK** is not displayed, check the status in the lower left of the iaxRpt main window to see if you are connected.



4. To talk, click and release **TRANSMIT**, speak through the computer's microphone, and then click and release **TRANSMIT** again to drop the repeater.
The **TRANSMIT** key turns red when the PTT function is active.
You can also press and hold the computer's **Ctrl** key for PTT.
5. If necessary, set up the speaker volume with the **SPK** slider. To set up microphone inputs and levels, click **Options > Devices**, and then set up your **Input Device** and/or **Microphone Audio Input Level** slider. Click **Save** and Then click **Done** to save the settings.
6. Click **Disconnect** or exit the program to disconnect from the host controller.
7. To connect to another host, select it in the Call drop-down box and then click **Connect**. You cannot connect to more than one host at a time, but you can link them as shown in the section **Allstar Link Nodes, including VE3OSH and VE3NAA**.

Setting up your Android device with DVSwitch Mobile

You can use the following procedures to:

- download and install DVSwitch Mobile on your Android device,
- set up the program options, and
- talk through the repeater from your Android device.

To download and install DVSwitch Mobile

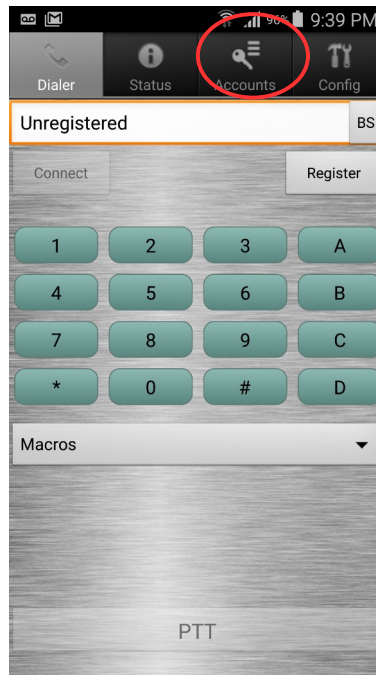
Android DVSwitch Mobile is a push to talk radio dispatch client that allows a full duplex voice connection to Allstar. It allows voice communications with any host controller (node) it is connected to and has the ability to send DTMF-like commands. Android DVSwitch Mobile is an update of Android iaxRpt. It can be used on various Android devices including network radios.

1. Download and install the program from the Google Play Store.
The program downloads and installs on your device.
2. Select **OPEN** to open the program.
The main window or Dialer tab opens.



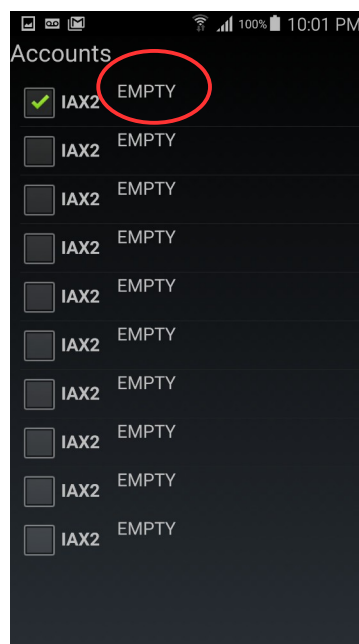
To set up the accounts

You must set up the accounts to access the host controller PC. Accounts for VE3OSH and VE3NAA are shown in the following examples.

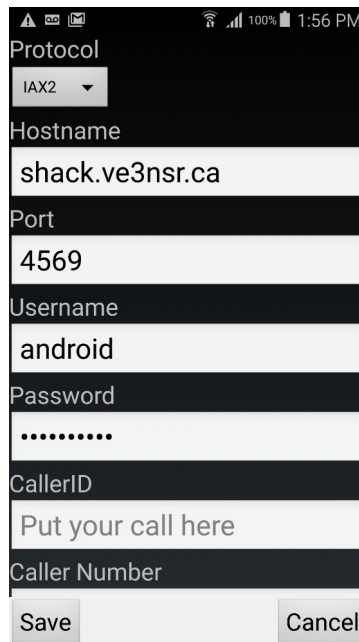


1. Select the Accounts tab.

The Accounts window appears. At this time, all entries are empty.



2. Select the text of the first line (**EMPTY**), not the check box.
The Accounts Entry page appears.



Protocol
IAX2

Hostname
shack.ve3nsr.ca

Port
4569

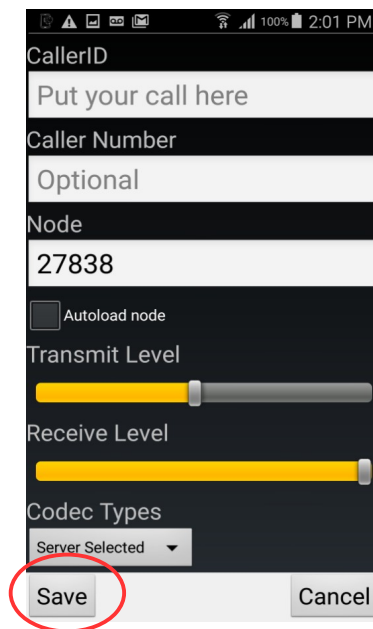
Username
android

Password
.....

CallerID
Put your call here

Caller Number

Save Cancel



CallerID
Put your call here

Caller Number
Optional

Node
27838

Autoload node

Transmit Level
[Slider]

Receive Level
[Slider]

Codec Types
Server Selected

Save Cancel

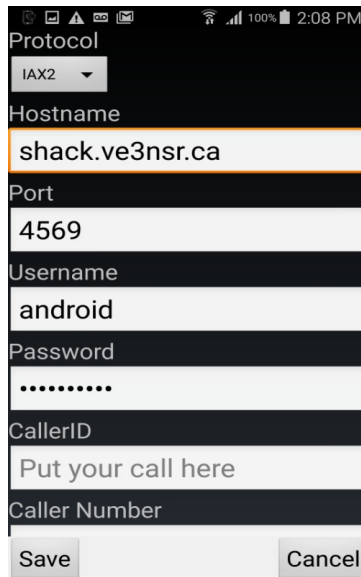
3. Fill in the fields as above for VE3OSH. Contact an NSARC repeater committee member for the **Password**. After scrolling down, adjust the Transmit Level about half way as shown.

4. Select **Save**.

The Accounts window appears, showing your entry on the first line.

5. Select the text of the second line (**EMPTY**).

The Accounts Entry page appears.



Protocol
IAX2

Hostname
shack.ve3nsr.ca

Port
4569

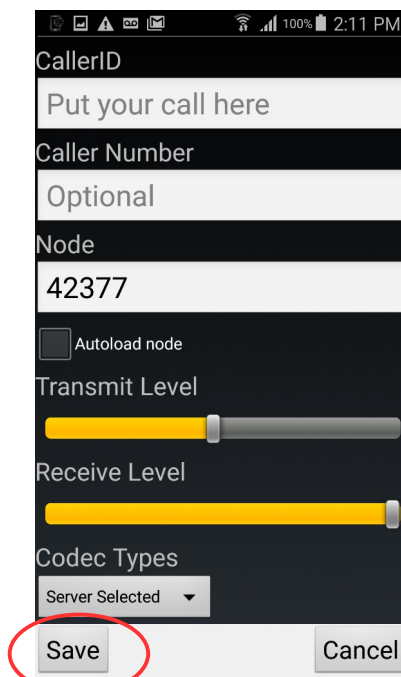
Username
android

Password
.....

CallerID
Put your call here

Caller Number

Save Cancel



CallerID
Put your call here

Caller Number
Optional

Node
42377

Autoload node

Transmit Level
[Slider]

Receive Level
[Slider]

Codec Types
Server Selected

Save Cancel

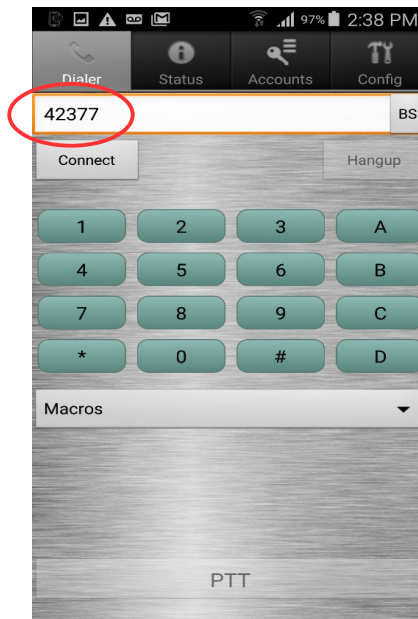
6. Fill in the fields as above for VE3NAA. The **Password** is the same as for VE3OSH. After scrolling down, adjust the Transmit Level about half way as shown.

7. Select **Save**.

The Accounts window appears, showing your entry on the second line.

8. Select the back arrow on the lower left of the Android screen. (Some versions of Android may have the back arrow on the lower right of the device.)

The Dialer tab appears.



Note: Because the second line of the Accounts window was checked after you completed the Accounts entry page for VE3NAA, the node number 42377 appears on the top line of the Dialer tab. Node 27838 is for VESOSH. Node 42377 is for VE3NAA.

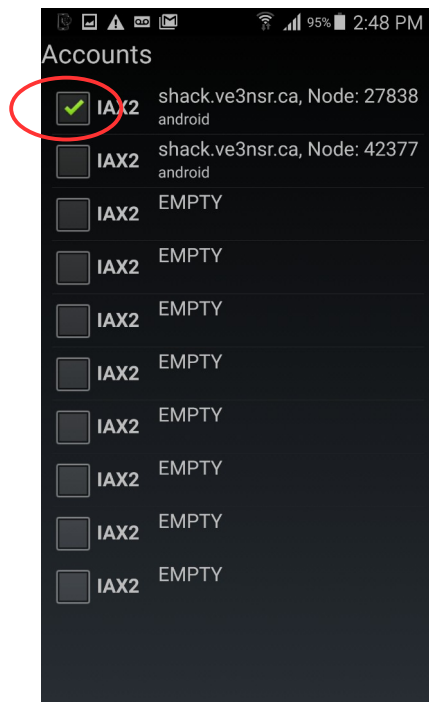
To talk through the repeater from your Android device

You can select the node, use PTT, and set up the sound levels as follows:

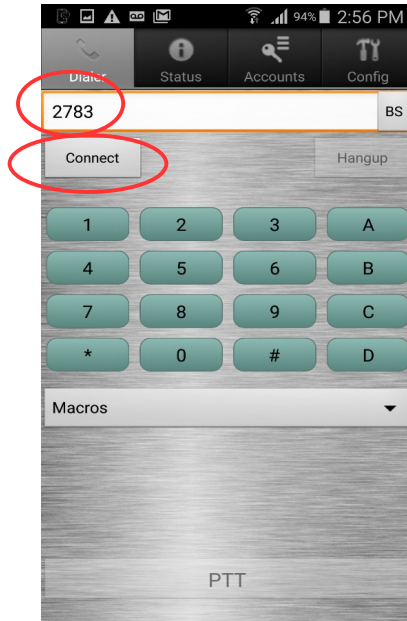
1. Make sure your Wi-Fi is on and connected. If the program is not running, select the **DVSwitch Mobile** app from the list of apps on your Android device.
The main window or Dialer tab opens with the last selected node number on the top line.



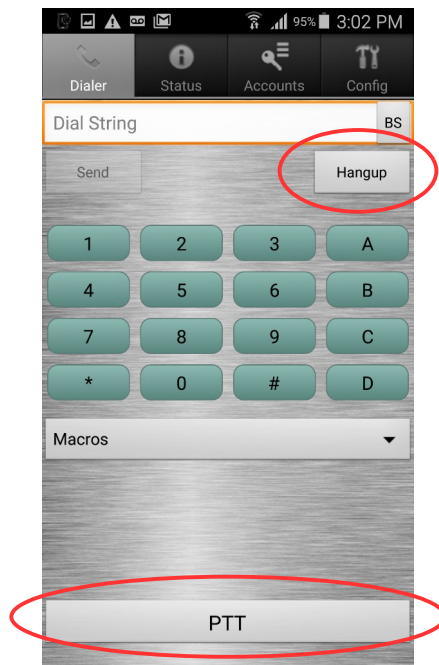
2. To select a node, select the Accounts tab, and then select the check box on the line for the desired node.



3. Select the back arrow on the bottom of the Android screen.
The Dialer tab appears, showing your selected node.



4. Select **Connect** to connect to the host controller.
The host connects. The PTT and Hangup buttons are highlighted.



5. To talk, select and release **PTT**, speak through the Android microphone, and then select and release **PTT** again to drop the repeater.

The **PTT** key turns red when the PTT function is active.

6. To set up the microphone levels, select the Accounts tab, and then the Accounts Entry page for the node. The **Transmit Level** for that node is at the bottom of the page. Move the slider as necessary. Select **Save** to save the settings.

Hint: A setting of about 60% may be suitable if the microphone is placed on a desktop, A setting of 50% may be better if the microphone is closer to the mouth. Android phones have automatic gain control built in to the microphone circuit.

7. Select **Hangup** to disconnect from the host computer.

8. To connect to another host, check it on the Accounts tab, select the back arrow, and then select **Connect**. You cannot connect to more than one host at a time, but you can link them as shown in the section **Allstar Link Nodes, including VE3OSH and VE3NAA**.

Setting up your iOS device with Zoiper

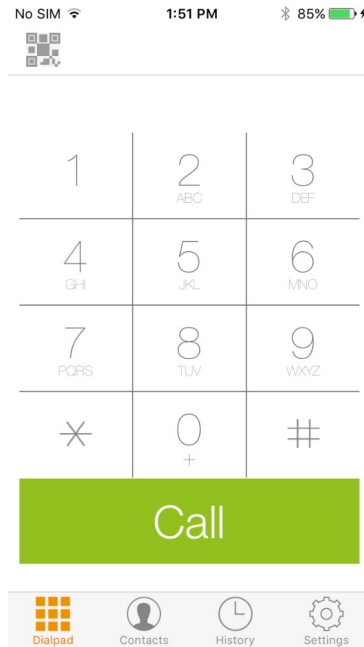
You can use the following procedures to:

- download and install Zoiper on your iOS device,
- set up the program options, and
- talk through the repeater from your iOS device.

To download and install Zoiper

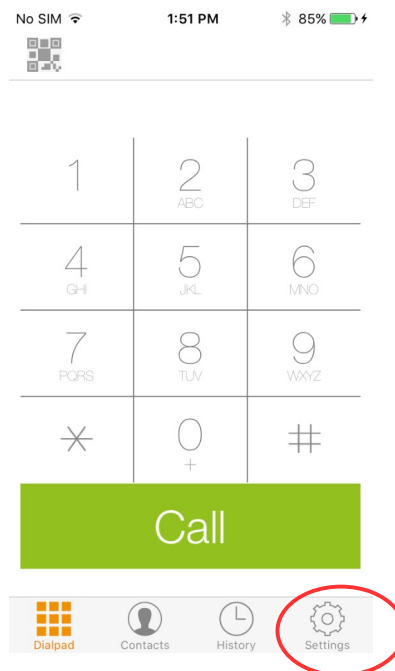
Zoiper is a radio dispatch client that allows a full duplex voice connection to Allstar. It allows voice communications with any host controller (node) it is connected to and has the ability to send DTMF-like commands.

1. Download and install Zoiper Lite from the App Store.
The program downloads and installs on your device.
2. Select **OPEN** to open the program.
You are asked if you want Zoiper to send you notifications.
3. Select **Don't Allow**.
You are asked whether Zoiper may access the microphone.
4. Select **OK**.
You are asked whether Zoiper may access the camera.
5. Select **Don't Allow**.
You are asked whether Zoiper may access your contact list.
6. Select **Don't Allow**.
7. Dismiss the **Camera Access Denied** notice.
The Dialer tab opens.



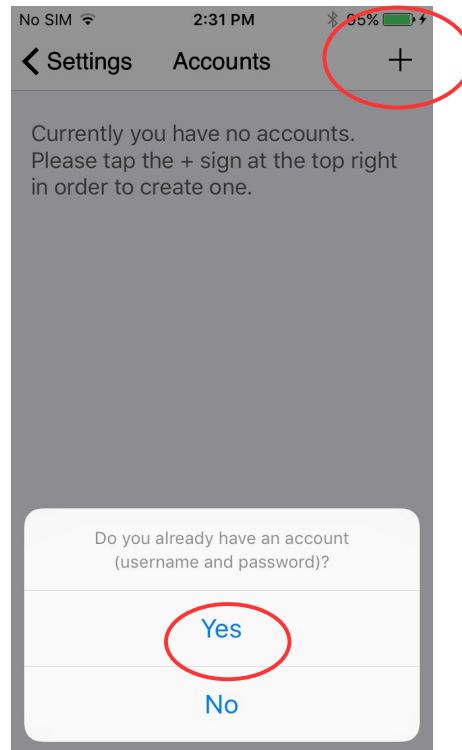
To set up the account

You must set up the account to access the host controller PC.

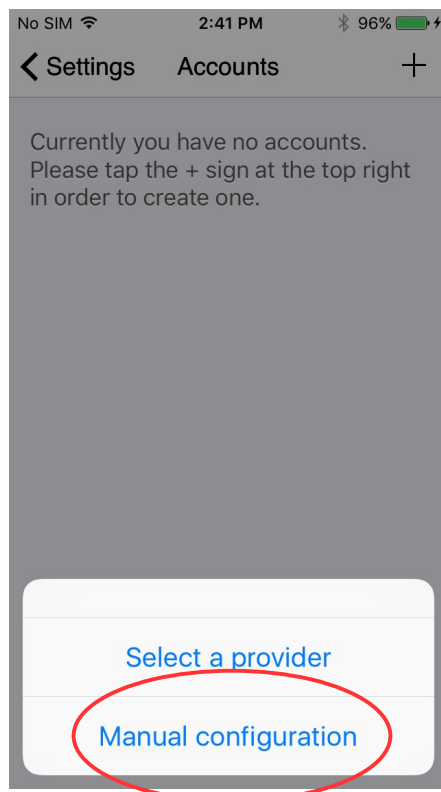


1. Select **Settings** on the Dialer tab, then select **Accounts**.
The Accounts tab appears. You are reminded that you have no accounts.

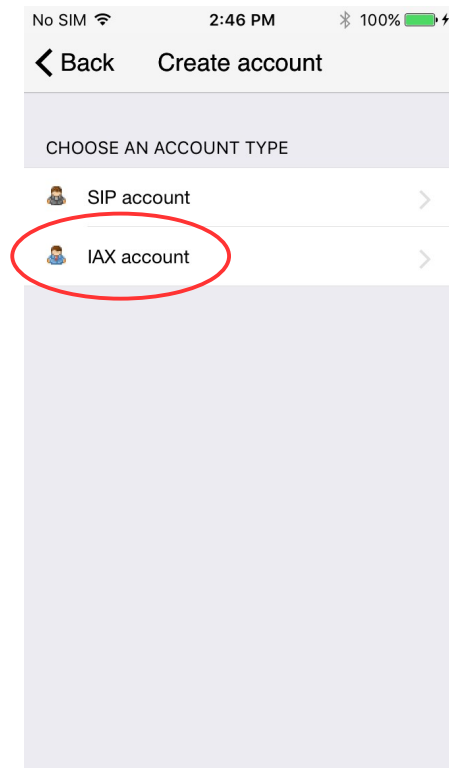
2. Select **+** at the top right to create an account.
You are then asked if you already have an account.



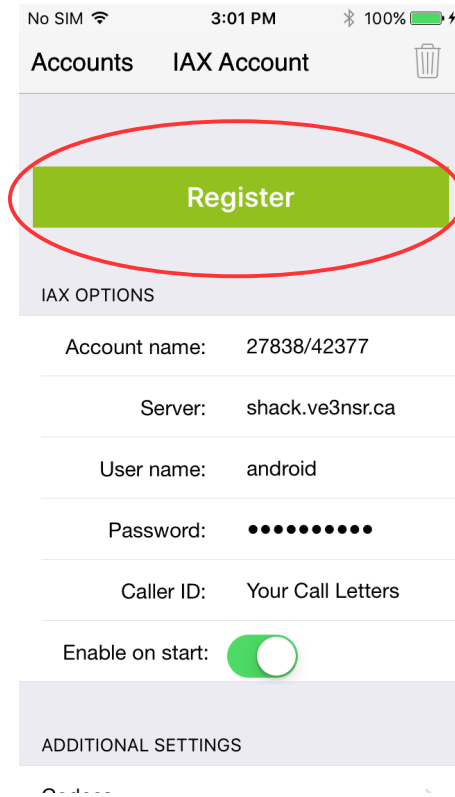
3. Select **Yes**, you already have an account (username and password).



4. Select **Manual configuration**.
The Create account tab appears



5. Select **IAX account**.
The IAX Account tab appears.

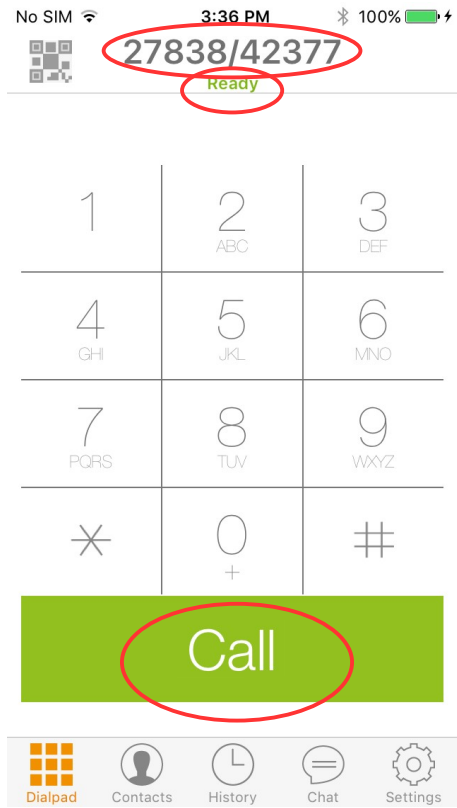


6. Fill in the fields as above. Contact an NSARC repeater committee member for the **Password**.
7. Select **Register**.
After a few minutes, the account registers and Registration Status is OK.
8. Select **Accounts** in the upper left.
There is a green check mark beside your new account.
9. Select **Settings**, then select the **Dialpad** in the lower left corner of the Settings tab.
The Dialer tab appears.

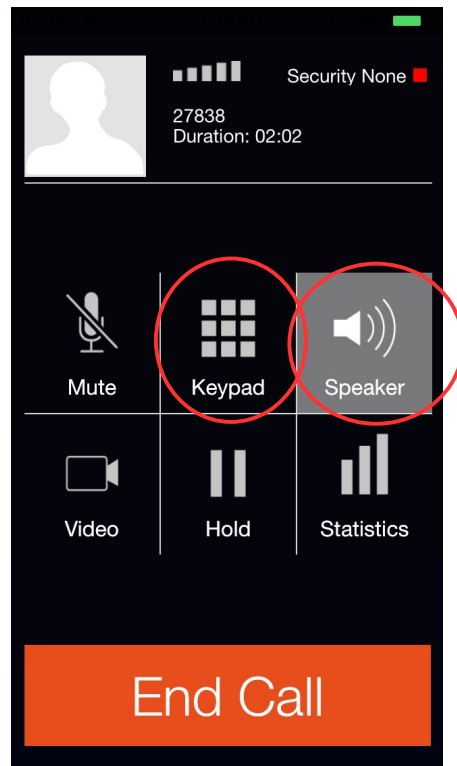
To talk through the repeater from your iOS device

You can dial the node and talk as follows:

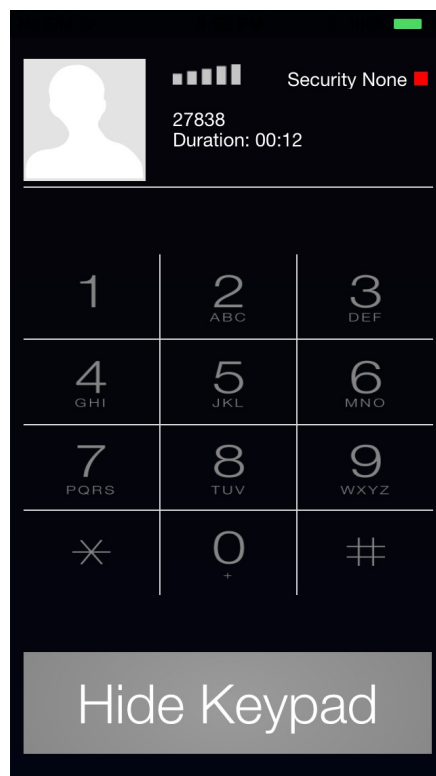
1. Make sure your Wi-Fi is on and connected. If the program is not running, select the **Zoiper** app from the list of apps on your iOS device.
The Dialer tab opens with the two available node numbers on the top line. The status is Ready.



2. Dial **27838** for VE3NSR or **42377** for VE3NAA, and then select **Call**. The following tab appears.



3. Select **Speaker** so it is shaded if you are not using earphones, then select **Keypad**.
Hint: If you select **Speaker** quickly, you can hear the “Node connected” signon notice.
The DTMF-style keypad appears.



4. There is no PTT key.
Press ***99** to turn PTT on and then talk. Press **#** to turn PTT off.
For DTMF-style commands, simply press the keys, for instance, ***80** to receive the cw identifier. There is no Send key.
5. To disconnect from the node, select **Hide Keypad**, and then select **End Call**.
6. To connect to another host, dial it on the Dialer tab and then click **Call**. You cannot connect to more than one host at a time, but you can link them as shown in the section **Allstar Link Nodes, including VE3OSH and VE3NAA**.

Initiating controller functions

You can control the same functions using the iaxRpt, DVSwitch Mobile, or Zoiper keypad as you can using DTMF tones from a transceiver. A list of functions follows. Not all functions are in service at the time of writing. The NSARC repeater committee can activate additional functions as required.

- While connected to a host repeater controller, click (for example) ***81** on the iaxRpt, DVSwitch Mobile, or Zoiper numbered keys. *Then, on an Android DVSwitch Mobile device only, press **Send**.*

The controller returns the local time as a voice message through the internet and through the repeater.

Note: iaxRpt, DVSwitch Mobile, and Zoiper send code, not actual DTMF tones.

Activated functions include:

*70	Local connection status
*80	Force system ID
*81	Say system time
*925	Playback of NSARC announcement
*926	Playback of welcome notification
*972	Parrot the next transmission only

Using Allstar

There are at least three ways to access remote repeaters using Allstar:

1. Link nodes using DTMF tones from a transceiver. This ties up both the local and remote repeater.
2. Link nodes using the iaxRpt, DVSwitch Mobile, or Zoiper keypad. This ties up both the local and remote repeater.
3. Create an account on **allstarlink.org** to access remote repeaters using their Allstar web transceiver. This ties up the remote repeater only. You need a photo of your Amateur license to join this free service. You also need Java installed on your computer.

Note: The Edge browser in Windows 10 does not support Java.

Before using a transceiver or computer to link or disconnect nodes, state your amateur radio call and your intentions over the air.

Allstar Link Standard Commands

This section contains the mandatory command codes and suggested command codes for Allstar Link.

Mandatory Command Codes

These are the mandatory command codes which all Allstar Link nodes must support to provide command code consistency to the users.

- *1node Disconnect link
- *2node Connect link in monitor mode
- *3node Connect link in transceive mode
- *4node Enter command node on a remote node
- *70 Local connection status
- *99 DTMF phone key (Assert PTT from phone portal. Note: # releases PTT)

Notes:

- node is an Allstar Link node number.
- Node number zero (0) is shorthand for the last node operated on by a previous command.
- Monitor mode means listen to a node, but do not send any audio to it.
- Command mode means send all received DTMF digits to the node number specified (bypassing the local command decoder). Send # to exit command mode, and restore local command decoding.

Optional Command Codes

- *80 Force system ID
- *81 Say system time
- *980 Say app_rpt software version
- *75 Link Connect (Local monitor only)

- *72 Last active node (System wide)
- *73 System wide connection status
- *71 Disconnect all links (macro)
- *74 Reconnect all links (macro)

Allstar Link Nodes, including VE3OSH and VE3NAA

Go to **stats.allstarlink.org** or Google **allstar link active nodes** to obtain a list of Allstar nodes, frequencies, callsigns, and locations. You can link to these nodes using a computer or a transceiver and the mandatory command codes above. If you are on VE3OSH and you want to link to VE3NAA, press *342377 where *3 is the command to connect the link, and 42377 is the VE3NAA node. To disconnect, press *142377. To disconnect from all nodes, press *71.

Troubleshooting

- If you shrink iaxRpt to the bottom of the PC screen, it may not be recoverable and you cannot open a second instance of the program. You may then need to restart your computer.
- laxRpt does not work properly if installed on a drive other than the C drive on a PC. Symptoms include not finding the configuration file, causing the level sliders to return to their leftmost position at exit. The speaker and microphone levels would then be very low when you open the program again.
- Zoiper may not work on all Android devices, even with the latest Android software release.

Receiving VE3OSH audio through the internet

To listen to VE3OSH traffic, use any computer to go to:

<https://www.broadcastify.com/listen/feed/29439/web>

If necessary, click or touch the play icon (forward arrow). You may need to enlarge the screen to see the icon. The audio is delayed about one minute from live traffic.