

The Latest

Triangle loop antenna for 2m

Up

Posted by AG6QV Frank

Tags: [2m](#) | [HAM](#)

The January 2023 edition of the QEX magazine includes an article about a horizontally polarized triangle antenna for the 2m HAM band. This looked to be an easy build and since I was able to work some FT8 contacts on my vertical dual band antenna a few weeks back I decided to go ahead and try the build. It started with a trip to the hardware store to purchase a 36" ruler and some nylon screws and nuts. While I was there I also picked up a 36" aluminum strip that was 1/2 inch wide and 1/16 inch thick. My thought was to test the build with two different versions.

The first step was to drill holes for the connectors and screws to attached the mounting wire etc. Then it was off to bending the metal at 60 and 120 degree angles to form a triangle open at one end. The open end are kept at a fixed distance with the nylon screw and nuts. Soldering the feed wire to the connector and the antenna is complete. The version with the small aluminum strip has an SMA connector and the version with the ruler uses an N connector, both female.

Next step was the antenna analyzer. Both version needed a bit of adjustment at the gap but that was easy to do. The analyzer showed that the resonance (low SWR) was a few MHz below the band edge. Increasing the gap 1-2mm moved the resonance up to about 144.2 MHz, right where I wanted it for FT8 operations. The SWR is around 1.2:1 and the antenna has a wide tuning area.

One of the antennas are now mounted about 5 feet above my garage and ready for testing tomorrow evening.

2m triangle antenna

Link to this Post



2m FT8 on January 5th 2023

Up

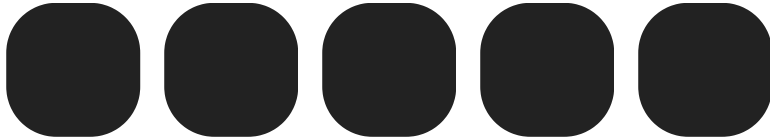
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I found out earlier in the week that there is FT8 activity in the PNW area on the 2m band (144.174 MHz). I made an entry in my calendar to make sure I would at least listen to see if I could hear anyone. It should be noted that I live in a forest with ~100 ft tall trees all around and a hill blocking most traffic to the east. My antenna setup is also far from optimal for 2m SSB as I only have a dual-band vertical placed on a 4 foot pole on the top of my garage.

I tuned in about 30 min before the scheduled time and to my surprise the first station was already calling CQ. After just 3 attempts I was able to make contact and complete the QSO. Another one came in about 30 min later and then traffic increased fast. I was able to make 8 contacts from CN87 and CN88, including one in Canada and I heard a station in CN85 (Oregon) but was not able to make that contact. After an hour or so of good fun I'll return to the HF bands until the next event.

Link to this Post



Hamshack Hotline - Asterisk PBX

Up

Posted by AG6QV Frank

Tags: [HAM](#)

I've been using Asterisk PBX for a long time. It allows us to have multiple phone numbers, including a number in Denmark that all goes to the same phone system. When a fellow HAM pointed me to HamShack Hotline I wanted to expand my existing phone system and enable incoming and outgoing phone calls on the network to and from my HAM shack without adding any new hardware.

The process started by requesting an new truck to be created on the [HamShack Hotline](#) network. This is done by creating a [support ticket](#). The same process is used to obtain a number that can be used with a SIP phone.

A few days later I received an email with my new phone number, my secret password and the endpoint to connect my PBX to. Configuration of the system was to use the IAX protocol (or rather the IAX2 protocol) to connect my Asterisk PBX system to the system operated by HamShack Hotline. This sounds simple but since this was the first time I had to configure this type of connection I needed to do some research and as it turns out a bit of experimentation to get all the setting correct, especially since my PBX system is behind a firewall I needed to configure port forwarding to allow traffic originating from the outside to reach my server.

The first step was to enable port forwarding of the IAX2 protocol and to allow access to the same port from my internal network. The IAX2 protocol uses a single UDP port (4569) for all communication which makes the configuration simple. On the Linux server running the Asterisk PBX software I used these command to enable the port:

firewall.txt

```
sudo firewall-cmd --add-port=4569/udp --permanent sudo firewall-cmd --reload
```

Then it was time to configure the trunk and extensions. Asterisk use a number of different configuration files, all located in /etc/asterisk (the default directory for configuration files) In this case there are two files that require changes: iax.conf and extensions.conf.

iax.conf

```
; HamShack Hotline Configuration ; Extension 12033 should be replaced with your extension ; Replace ***** v
```

extensions.conf

```
; Configure this section to dial ; replace ##### with your extension ; replace <extension> with your own extensi
```

After making these changes to the Asterisk configuration I was able to make calls to the HamShack Hotline system but I could not receive incoming calls. Instead of waiting on someone to call me I tried to call my own extension from another phone on my system. I got the same error but now had a way to debug the system. Enabling IAX debugging on the Asterisk console revealed the problem. As seen in the output below the incoming call was trying to connect to and extension called 's' and my system was only configured with the 12033 extension I was given by HamShack Hotline.

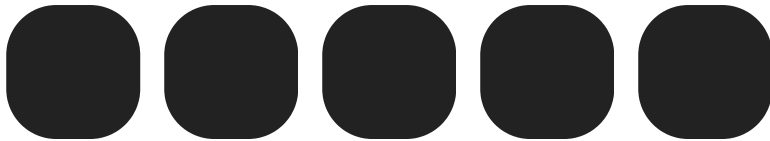
iax.debug.txt

```
Rx-Frame Retry[ No] -- OSeqno: 000 ISeqno: 000 Type: IAX Subclass: NEW Timestamp: 00082ms SCall: 064
```

In order to fix this I added a new extension to my dial plan. This small change made incoming calls working. The hack works since I only have one extension on the HamShack Hotline network and there might be a better way of changing the configuration.

I created a support ticket with HamShack Hotline to verify if there was anything on their end that might fix the issue. I received phone calls from two different support engineers but they were not able to point me to a solution or to make any suggestions to changes I could make to my configuration. Since the system is able to bot make and receive phone calls I can live with the hack on using an extension called s. I'm not the only one with similar problems. I found this [discussion](#) about the topic but the suggested fix does now work and I already have that setting on my system.

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