

# MBARC Beacon

The Morongo Basin Amateur Radio Club Newsletter



OCTOBER / NOVEMBER 2024 EDITION

[w6ba.net](http://w6ba.net)

[MorongoBasinAmateurRadioClub](https://www.facebook.com/MorongoBasinAmateurRadioClub)



Byran **KF6YGK** mounts the discone antenna providing reception for the OpenWebRX+ SDRs. – Photo by **KO6DAV**

## Paxton Site Maintenance

By Aaron Chesney **KM6IAU** – submitted October 23, 2024

Taking advantage of the cooler weather, Glenn **N6GIW**, Bryan **KF6YGK**, and Aaron **KM6IAU** head to the Paxton repeater site to preform ... [COVER STORY, page 3](#)

## Information At A Glance

### Upcoming Club Meetings

Monthly club meetings have been held on the 3<sup>rd</sup> Thursday at 1800 at [Yucca Valley Church of the Nazarene](#). There is discussion that this may change. **Stay tuned.**

### Local Nets

Net Name	Day & Time
Amateur Radio Emergency Service	<a href="#">MON</a> @ 1915
MBARC Weekly Net	<a href="#">TUE</a> @ 1900
MBARC “Cawfee Tawk”	DAILY @ 1000

### MBARC Linked Repeater System

For more info, see the [2<sup>nd</sup> to last page](#) for detailed diagram of the **MBARC** Linked Repeater System or visit [w6ba.net](http://w6ba.net).

Site	MHz	kHz	T
<b>W6BA</b> Yucca Valley / Paxton Hill	146.790	–	136.5
<b>W6BA</b> Twentynine Palms / Donnell Hill	147.060	+	136.5
<b>WB6CDF</b> Landers / Fire Station	447.580	–	173.8
<b>AD6G</b> Pipes Canyon	446.120	Ø	146.2

### Local VoIP-to-RF Nodes

System	# Node	RF Link
AllStarLink	503088	<b>KM6IAU</b> to <b>W6BA YV</b>
EchoLink	<b>KM6IAU-L</b>	<b>KM6IAU</b> to <b>W6BA YV</b>
EchoLink	<b>WO4ROB-L</b>	<b>WO4ROB</b> to <b>W6BA YV</b>

### Local RF-to-VoIP Nodes

Site	MHz	kHz	T	System	# Node/TG
<b>KD6DIQ YV</b>	145.770	Ø	67.0	AllStar	<a href="#">28855</a>
<b>WB6CDF YV</b>	447.000	–	10	DMR/BM	TS1: TG 3106 TS2: TG 2

<i>President</i> --- Rob Cloutier	<b>WO4ROB</b>
<i>Vice President</i> --- Keith Board	<b>N6GKB</b>
<i>Secretary</i> --- Paul Edwards	<b>AA6SM</b>
<i>Treasurer</i> --- Glenn Miller	<b>N6GIW</b>
<i>Board Member</i> --- Aaron Chesney	<b>KM6IAU</b>
<i>Board Member</i> --- Larry Mollica	<b>AD6G</b>
<i>Repeater Trustee</i> --- Glenn Miller	<b>N6GIW</b>


<i>Editor</i> --- Aaron Chesney	<b>KM6IAU</b>
<i>Photos and Graphics</i> --- Maja Chesney	<b>KO6DAV</b>
<i>Stories</i> --- Aaron Chesney	<b>KM6IAU</b>
Glenn Miller	<b>N6GIW</b>
Judy Cloutier	<b>KK6NWG</b>


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**Your Newsletter, Your Voice.**

If you have material you'd like to share in a future newsletter, [get in touch](#).


 Aaron Chesney **KM6IAU**


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[Aaron@KM6IAU.net](mailto:Aaron@KM6IAU.net)

**President's Message**

Hello radio operators! A big thank you to the Halloween Party Committee and to all who brought food. I had a lot of fun.

This is the month to vote for the 2025 **MBARC** officers & board members. Thank you to all the volunteers who added their name to the ballot. We are attempting to have the next meeting on the last Sunday of the month, in the afternoon before sunset, at the Church of the Nazarene. Keep an eye on the website, Facebook, and your email for details.

This is a big month for celebrations:


- \* Sun, 03 Nov – End DST. (“Fall back” one hour.)
- \* Tue, 05 Nov – U.S. General Election Day
- \* Sun, 10 Nov – USMC 249th Birthday
- \* Mon, 11 Nov – Veterans Day
- \* Wed, 20 Nov – Joe Walsh’s 77th Birthday
- \* Sun, 24 Nov – **MBARC** voting meeting
- \* Thu, 28 Nov – Thanksgiving


Please study for your next license so you can take the exam on Saturday afternoon, 25 January 2025, at the Yucca Mesa Community Center.

Please schedule time to check in on the 7 PM Tuesday net, and if you can, please join us on the “*Cawfee Tawk*” net everyday from 1000 to 1100 AM.

Take care of yourself and enjoy each day. If you're not having fun, then you're doing something wrong.

This is **WO4ROB**  
 Rob from Joshua Tree


[760-401-6666](tel:760-401-6666)


[WO4ROB@gmail.com](mailto:WO4ROB@gmail.com)



## COVER STORY, continued

... maintenance tasks on several systems.

Among those tasks were:

- \* A test of the repeater system's battery backup,
- \* A modification to the AREDN system which would increase stability during remote diagnostics,
- \* Combining weather station measurement apparatuses onto a single mast,
- \* Moving a yagi which is used for remote management,
- \* Moving a wide-band discone antenna which provides reception for the publicly-accessible OpenWebRX+ and array of SDR receivers.

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## Club Repeaters

By Glenn Miller **N6GIW**, Repeater Trustee – submitted September 30, 2024

Our club repeaters have been fairly quiet. Please try to get on the air and participate in our club nets: Tuesdays at 1900 hours on the Yucca Valley repeater on 146.790 (linked to 29 Palms 147.060), and the Cawfee Talk net daily on either repeater at 1000-1100 hours. We'd like to hear from you. You do not need a subject to talk about to just say hello.

There is still some work to be done at the Yucca Valley repeater building. The fascia board and exterior walls of the building need paint, and a couple of antennas need to be remounted.

*Editor's note: The antennas have been remounted since the submission of this article. The original text is included but the strike-through was added.*

A while back, I changed our repeater in Yucca Valley and closed down all scheduled announcements. I thought this

would make the repeater more quiet, easier to monitor, and less likely to interfere with conversations. I have come to prefer the new plan and intend to leave it this was for the foreseeable future. Comments are welcome.

A big thanks goes to all who have helped with repeater projects, especially our repeater committee members:

- \* Chris **WB6CDF**
- \* Larry **AD6G**
- \* Bryan **KF6YGK**

Helpers:

- \* Perry **KN6WTI**
- \* Frank **KD6RNS**
- \* Keith **N6GKB**

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## Club History – SEPTEMBER 1995

By Glenn Miller **N6GIW**, submitted on September 30, 2024

Here is some information from the MARC GRAM for September 1995.

The bulletin editor was Charlotte Miller **KD6CQP** (now **K6EEF**).

Club President at the time was **N6GIW**. First VP was Jules **KD6QKX**, VP Stan

**WB6QFE**, Sec. Mary **KE6ACR**, and Treas. Randy Whitney. Additionally, there were nine people on the board of directors.

During that period there was a fire in Cabazon, and ARES was contacted for radio communications support on

August 5, 1995, at 1300 hours. Net control was established on the Yucca Valley repeater to provide support for a possible evacuation in Morongo Valley. The threat diminished and operators were released at 1510 hours.

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# Software-Defined Radio (SDR) in the Morongo Basin

## A Multipart Series: Part 1

By Aaron Chesney *KM6IAU* – submitted October 25, 2024

### 1.0. Preface

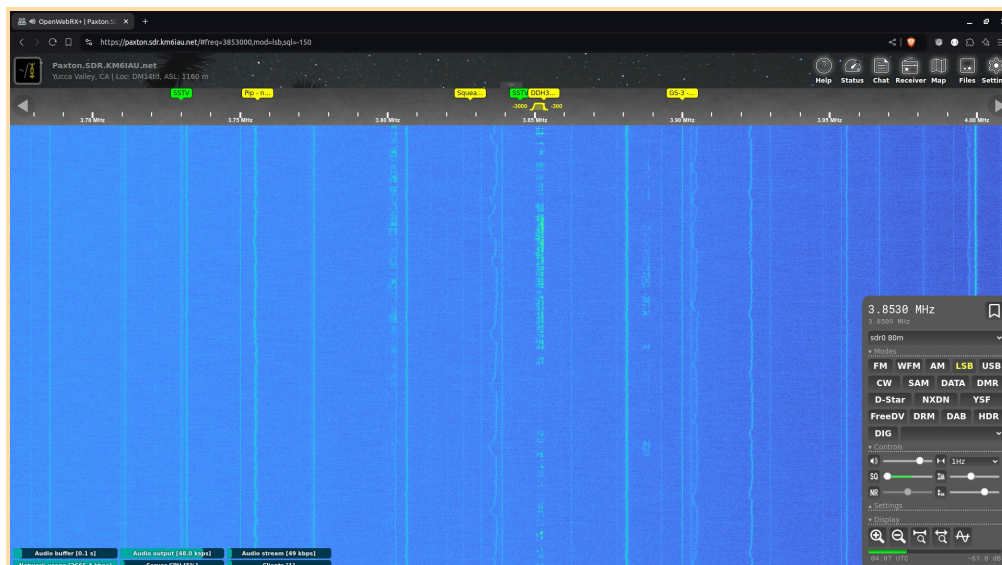
I originally thought I'd provide a short write-up about how to use the OpenWebRX server at Paxton. As I began writing, I considered how to include sufficient information for hams that were unfamiliar with SDR, its value, and its limitations. I made considerable effort to be accurate, concise, and provide examples. I prefer not needing to dig deep on a first approach to a new subject – I only have so-much focus. I think many can relate. So I decided this might be more digestible as a multipart series. I hope you find value in this approach – and in this series.

### 1.1. Introduction

Software-defined radio (SDR) is a type of radio where its various components (e.g. mixers, filters, amplifiers, modulators/demodulators, detectors, etc.) are implemented in digital software rather than in analog circuits.

This approach has both benefits and drawbacks, depending on the application. SDR may be cost-prohibitive where conventional, “hardware-defined” radio meets the need. (*Pardon the expression.*) For instance, there's no need for an SDR to listen to the repeater. Even a cheap, \$20 handheld radio is vastly better suited for that job. SDR, however, excels at versatility. This makes SDR ideal for people that want to explore radio with a great deal of flexibility.

Speaking for myself, I was fascinated when I first sat down at an HF radio. That particular radio had a “waterfall” display. A waterfall display is a type of display that shows signals (or lack thereof) on a chunk of band around the



Screenshot of OpenWebRX+, a web-based SDR application. The vast blue area is called a “waterfall”. A portion of the 80-meter band is zoomed-in, spanning from left to right. In the waterfall, several LSB transmissions can be seen.

narrow portion to which you're currently listening.

*Watching the waterfall, rolling the dial through the band, and listening to how the sound changed as I tuned and changed modes... Its like the difference between the written portion of the driver's license test and actually feeling the pavement through the steering wheel as you drive down the open road.*

I think many hams have had a similar first experience, where someone showed them radio beyond the Push-To-Talk of a handheld radio. I think many hams also encounter hurdles diving into radio for a myriad of reasons: cost of equipment, fear of messing something up, or fear of doing something they shouldn't.

When I first started out with SDR, it was a matter of chasing that first thrill of radio discovery. For me, SDR made that first experience **repeatable – and expandable**.

I realized others could also have the benefit of such an experience. I saw other web-based SDRs and recognized

that this would be a good way to eliminate those barriers for others and share radio with the Morongo Basin.

*The greater topic of SDR is much bigger than merely listening and watching waterfalls. This series however, as its title indicates, is about SDR in the Morongo Basin – at least at its current state, that of which I'm aware.*

### 1.2. Local-only vs. Web-based

Below, I'm going to use the word “application” to describe the chunk of software which provides a graphical user interface for the SDR. The applications discussed here include both the GUI (graphical user interface) and the smaller pieces of software which actually do the grunt-work of tuning and demodulating the signal samples.

An SDR without software doesn't do much. Folks new to SDR might buy a \$35 [RTL-SDR](#), install the device drivers, and install an application on their computer like SDR# (“SDR Sharp”),



GQRX, or some other application [from a big list](#). Those applications generally provide essential functionality: tuning, mode selection, gain adjustment, bandwidth adjustment, squelch control, and noise reduction. Most provide a waterfall display. Some even decode digital signals, depending on the application, the digital mode, or other limitations. Their interface is, in my opinion, at least “fair”, again depending on the application. Most of those applications only provide an interface locally, working just fine without internet. This certainly has appeal, but inhibits sharing the resource. Obviously.

If the goal is to provide a service to others, a web-based application is ideal. There are a few; OpenWebRX is one example of such. (*OpenWebRX+ (note the plus) is a fork of OpenWebRX (no plus) which – long story short – includes more features. It’s the version I’ve set up for Paxton. For simplicity’s sake, I’ll just use “OpenWebRX” to describe both where distinction is unnecessary.*)

### 1.3. Considerations

Despite the chief benefit of a web-based application, there are some limitations to be aware of. I’ll start with perhaps the biggest first: something I’ll call “demand collisions”.

SDRs, or any radio for that matter, have a limit of how much radio spectrum they can listen to at a time. For instance, a typical handheld FM ham radio listens to roughly 15KHz of band. By contrast, the \$35 RTL-SDR can receive 2.4MHz of band. (*Actually more, but that’s another discussion.*)

“Okay, so, 160 times more. What is the limitation?” Imagine a single handheld FM ham radio. Ignore fancy radio magic tricks; we’re just focusing on the fundamentals. Imagine that single radio shared by two listeners who each want to

listen to a different frequency at the same time. It would be impossible. One listener takes control of the radio, changes to their desired frequency. Then the other listener takes it back and does the same. This is a demand collision.

Now, expand that concept to multiple listeners wanting to listen on not just different frequencies, but entirely different bands. Sure, the SDR’s 2.4MHz of receive can easily accommodate all listeners listening in the 80-meter band, or all listeners listening in the 40-meter band. Either ham radio band individually fits entirely within 2.4MHz, after all. *But not both bands at the same time.*

OpenWebRX uses “profiles” to set limits in an SDR’s active configuration. So you might, for instance, have two SDRs connected to your computer. SDR #1 is configured to cover only the 80-meter band, and SDR #2 is configured to cover only the 40-meter band. Now, many users can listen anywhere they like around 80-meters and also many users can listen anywhere they like around 40-meters... all without disrupting each other. Incidentally, this is exactly how [another common web-SDR platform](#) provide access to multiple bands – they use multiple SDRs, each pre-configured to their own band or chunk of band.

Another problem arises out of our attempt to mitigate the first, however. This problem is more nuanced. Sometimes listening is hindered by plethora of phenomena, some being especially notorious of the inexpensive SDRs. (*I believe the RTL-SDR v4 is hands-down the best general-purpose SDR you can get for \$35, but let’s manage our expectations!*) Sometimes those problems can be worked-around by changing the center-frequency a bit, or changing the sampling rate. The effect is that you’ve shifted the problem away from where

you’re trying to listen. Unfortunately, this manner of adjustment is impractical to implement in profiles as it would essentially negate how we used profiles to mitigate demand collisions.

Lastly (for this writing) on the topic of considerations, a local-only application is generally more responsive as compared to the web-based alternative, and usually produces higher quality audio. The local-only application has access to the uncompressed data with zero network latency, making it more responsive.

2.4MHz of listening means 2.4 million samples per second (or MS/s, megasamples per second). The RTL-SDR’s sample size is 8 bits.

$$\frac{2.4 \text{ M samples}}{\text{second}} \times \frac{8 \text{ bits}}{\text{sample}} = \frac{19.2 \text{ M bits}}{\text{second}}$$

... not including network and protocol overhead.

This is an enormous data rate which can quickly saturate an internet connection. Web-SDRs overcome this limitation by sending compressed audio rather than the *entire chunk* of radio spectrum. Audio compression has a small but negative impact on quality and latency. It also means that more demand is placed the web-SDR’s CPU.

When I tried this with a Raspberry Pi 3B+, it would just crash with more than 2 listeners. Bear in mind that SDR is a lot to ask of a Raspberry Pi in general, local or not. Newer versions of the Raspberry Pi are more capable, but a mid-tier PC would run circles around the best Pi’s computational power.

*In the next part – in the next edition of **MBARC Beacon** – we begin with the fun stuff: using the SDR at Paxton! **Stay tuned.***



# MBARC Halloween Party

By Judy Cloutier **KK6NWG**, Party Committee Chair – submitted October 28, 2024

On October 26th we had our yearly Halloween party. Twenty people attended. Many people dressed up in costume. We ate, danced, talked and had a lot of fun. Prizes were given to the best costume (**KF6BIG** Roger), the worst costume (**AD6G** Larry), and the most original costume (**AE6SG** Manuel). We are looking forward to next year's Halloween party. I am **KK6NWG** Judy. ---



Rob **WO4ROB** and Judy **KK6NWG** adorably sing, "Peanut Butter Jelly Time". – Photo by **KOD6AV**

Event collage. Center: Costume contest participants. – Arranged by **KO6DAV**



Group photo. Chris **WB6CDF** pulls triple duty in the back row, filling-in for Glenn **N6GIW**'s and Bryan **KF6YBK**'s early departure. Manuel **AE6SG** receives the loving gaze of his better half, Irene **KI6WTJ**. – Timer-based photo by Maja **KO6DAV**



# Meeting Minutes – SEPTEMBER 2024

Submitted by Glenn Miller **N6GIW**, Acting Secretary, on October 21, 2024, on behalf of Paul Edwards **AA6SM**, Club Secretary

The meeting was called to order by President Rob at 1800 Hrs.

After introductions, Keith read the minutes of the previous meeting.

Our next meeting will include the nomination of officers for 2025, and a Halloween party on October 26th from noon to 3pm at the Yucca Mesa Community Center. It will be a pot luck.

Rob will be out of country for six months in 2025, and will not be available for President. We need new nominees for President and V. President.

Rob presented the new banner and business cards for the club. Some misprinted banners were given away to members.

The Orchid Festival at Gubler’s will be held on October 5th and 6th. We need someone to represent the club and set up a table at the festival.

Rob had to leave the meeting at 1830 hours.

The Great Shakeout exercise will be next month.

After the 50/50 drawing, the meeting was adjourned by V. P. Keith **N6GKB** at 1854 hours.

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# Meeting Minutes – OCTOBER 2024

Submitted by Paul Edwards **AA6SM**, Club Secretary, on October 28, 2024

The President Rob **WO4ROB** opened the meeting at 1200.

Introductions were made of all who were present.

The treasurer’s report was sent by Glenn **N6GIW** with the following reported:

Starting balance:	\$ 2888.93
Expenses:	\$ 210.51
Balance:	\$ 2678.42
Incoming revenue:	\$ 750.00 from Gubler/Orchid Festival; \$ 60.00 from dues.

Nominations for the 2025 club officer positions:

President	Manual <b>AE6SG</b>
Vice-President	Larry <b>AD6G</b>
Secretary	Paul <b>AA6SM</b>
Treasurer	Glenn <b>N6GIW</b>

At large board positions (select two):

Aaron **KM6IAU**  
Judy **KK6NWG**  
Bryan **KF6YGK**

*\*It was noted that 11 members are delinquent on their dues.*

The Secretary Paul **AA6SM** read the minutes of the September 2024 meeting.

Keith **N6GKB** described our role during the Orchid Festival. Gubler’s revenue sharing gained the club a \$750 donation.

*\*Elections will be held during the November meeting. Additional nominations will be accepted until that point.*

A 50/50 drawing was conducted by the Vice-President. A total of \$36 was collected.

The meeting was adjourned at 1230 by Rob **WO4ROB** in favor of the annual Halloween party.

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# Member-Provided Resources

If you’d like to include your links here, [get in touch](#).

## Member Websites

- \* [Aaron \*\*KM6IAU\*\*](#) has a pool of publicly-accessible, OpenWebRX servers, or “Web SDRs”. You can reach them here: <https://sdr.KM6IAU.net/>
- \* [Chris \*\*WB6CDF\*\*](#) has a publicly-accessible webcam atop Paxton Hill. <http://WB6CDF.com/paxton-cams.htm>  
More resources are available at his site, [WB6CDF.com](#).

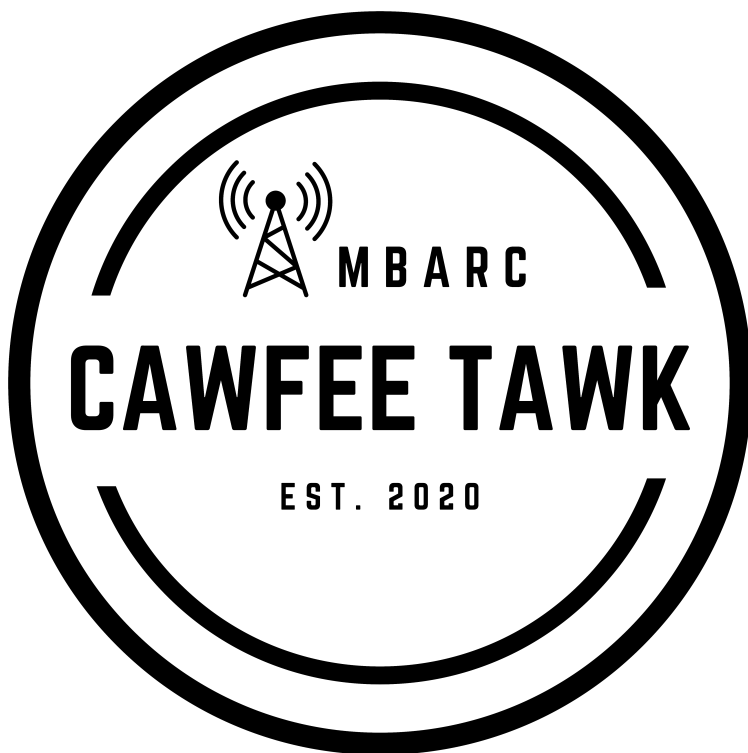
- \* [Rob \*\*WO4ROB\*\*](#) has collected and organized his hobby notes on his personal website, [WO4ROB.com](#).

## YouTube channels

- \* [Ken \*\*W6BZY\*\*](#) has put together some helpful YouTube videos about Linux, Raspberry Pi, and amateur radio: <https://youtube.com/@Kensownvids>
-



DON'T MAKE ME USE  
MY RADIO VOICE



**HAM RADIO**  
THE ORIGINAL  
SOCIAL NETWORK

MAY THE  
**MORSE**  
BE WITH YOU

**MBARC**  
.....

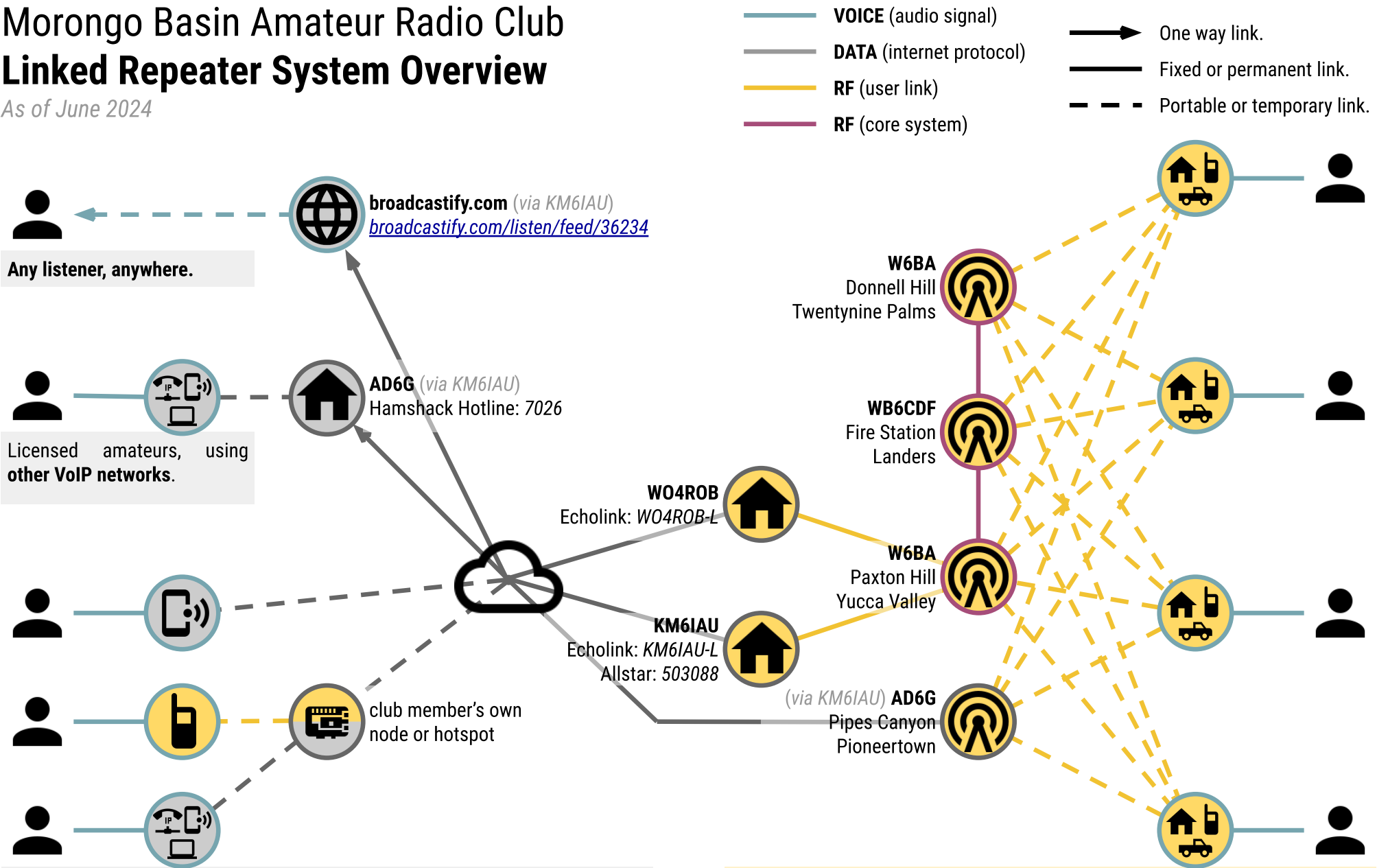




# Morongo Basin Amateur Radio Club

## Linked Repeater System Overview

As of June 2024



Licensed amateurs **with** club membership, using **Allstar\*** or **Echolink\*\***.

Please use restrictive access means, such as PL tone and low-gain antenna for RF links, or password access for IP links. Do not link-in broad-access systems, such as other repeaters or reflectors, where such linking could transmit onto our club's system. Thank you.

Licensed amateurs **with or without** club membership, using **RF**.

Please do not link-in broad-access systems, such as other repeaters or reflectors, where such linking could transmit onto our club's system. Thank you.

\* Allstar access needs to be manually set up. Contact [linkrequest@W6BA.net](mailto:linkrequest@W6BA.net) to submit your request.  
\*\* Echolink access may need to be manually set up. Contact [linkrequest@W6BA.net](mailto:linkrequest@W6BA.net) to submit your request.

Calendar – NOVEMBER 2024

SUN	MON	TUE	WED	THU	FRI	SAT
Oct 27	Oct 28	Oct 29	Oct 30	Oct 31	1	2
	1915 – ARES net	1900 – Club net ctrl: Glenn N6GIW				
3	4	5	6	7	8	9
	1915 – ARES net	1900 – Club net ctrl: Aaron KM6IAU				
10	11	12	13	14	15	16
	1915 – ARES net	1900 – Club net ctrl: Keith N6GKB				1300 – Club mtg, <a href="#">Yucca Valley Church of the Nazarene.</a> <i>Tentative at time of publication.</i>
17	18	19	20	21	22	23
	1915 – ARES net	1900 – Club net ctrl: Fred WO6C				
24	25	26	27	28	29	30
	1915 – ARES net	1900 – Club net ctrl: Larry AD6G				

KD6DIQ AllStarLink  
Node#28855 Schedule

YV: 145.77MHz, Øshift, ☐67.0Hz

EVERYDAY

0000 – 0100 WIN System #2560  
2200 – 2400 WIN System #2560

SUN

No additional program, system open.

MON

0400 – 0730 East Coast Refl. #45225  
1000 – 1300 Alaska Morning #29332

TUE

0400 – 0730 East Coast Refl. #45225  
1000 – 1300 Alaska Morning #29332  
1700 – 1900 East Coast Refl. #45225

WED

0400 – 0730 East Coast Refl. #45225  
1000 – 1300 Alaska Morning #29332  
1700 – 1900 East Coast Refl. #45225

THU

0400 – 0730 East Coast Refl. #45225  
1000 – 1300 Alaska Morning #29332  
1700 – 1900 East Coast Refl. #45225

FRI

0400 – 0730 East Coast Refl. #45225  
1000 – 1300 Alaska Morning #29332  
1830 – 2400 WIN System #2560

SAT

0400 – 0730 East Coast Refl. #45225  
1000 – 1300 Alaska Morning #29332  
1700 – 1720 Newsline  
2000 – 2200 East Coast Refl. #45225