# The BEACON

WEST MOUNTAIN RADIO

# Epic
## PWRgate

WEST MOUNTAIN RADIO

*Epic PWRgate*

SOLAR PANEL

BATTERY    OUT    POWER SUPPLY

SUSPEND

## 12 volt Backup Power System
★
## Solar Input for Charging

6 Meters anyone?
Coax and mast not included.Neither are the mountains.

Locating Noise and reducing Noise

This article will consider a way to locating sources of noise. A follow up article will consider reducing the noise reception when operating.

Noise is easily generated by a variety of electronic devices. Switching power supplies are noise producing, especially the wall wart style. Other devices as dimmer switches , energy savors for appliances, lighting and more. These items have the potential of producing high noise levels particularly on 40, 80 and 160 meters.

One technique is to use a portable AM broadcast receiver to locate the noise. This is a good start due to the ferrite antenna in the radio. It is Bi-Directional, helping to locate the noise with the directivity of the antenna.

However, it would be more affective to locate the noise on the band you are wanting to use. Therefore, making a ferrite antenna that resonated on the band you are analyzing is not difficult, but can be more affective.

I needed to locate a power line noise that was some distance away. The antenna was made from seven ferrite cylinders. 1.125" long by .5625" (9/16") diameter. The cylinders were secured end to end by a plastic dowel through the bore of the cylinder. A small screw tapped on each side, then a fender washer that pulled the cylinders together by tightening the screws.

Next, a #28 magnet wire was rapped on and across the complete ferrite assembly at a 1/2" spacing. The two leads from each end were connected to a variable capacitor from a discarded radio.

Another winding is added at the center of the rod. At about 3 turns the impedance will average around 23 ohms.This winding is connected to a SO-239. Impedance is not critical since it is used for reception only. However, you may want to add a few more turns to match it closer to 50 ohms.

Depending on the range of the variable capacitor, you can tune to the 80 and 40 meter bands. When connected to a receiver, adjust the variable capacitor for maximum, signal or noise.

As you rotate the antenna you will have two strong sides and two nulls. This will give you a direction the noise is in. However, you have two choices since it is bi-directional. One direction will take you to the noise. Using it in your home can be done with a length of coax, long enough to make your measurement.

Using a portable HF receiver, you can search for noise at farther distances. I was able to locate a power line noise about 1/8 mile away.

You can acquire 1/2" ferrite rods in a variety of lengths. This will make it easier to construct and may offer more directivity.
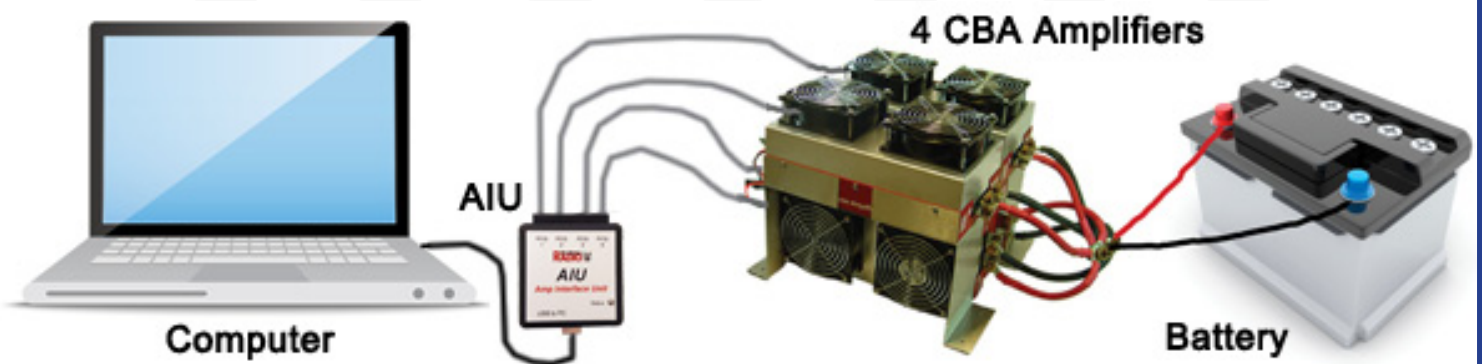
A follow up article will be using the antenna for  a lower noise reception.

73,
Ralph WD0EJA

**Computerized Battery Analyzer**

# 2000 Watt System

The Amp Interface Unit (AIU) can be used instead of a CBA unit when battery testing with a CBA A2 500W Amplifier.

Benefits of Using the AIU Over a CBA

- Can detect when a CBA amplifier is malfunctioning and stop the test
- Not possible to select the wrong CBA amplifier configuration in the software which would result in incorrect results
- Eliminates one of the factors that contribute to error making the results more accurate and simplifying the cables for a multi-amplifier system
- Allows CBA amplifiers from multi-amplifier systems to be reconfigured to different size systems. For example without an AIU you cannot split a 2000W system into four 500W systems because the units were set to a different amplification factor. Those CBA amplifiers would need to be sent back to West Mountain Radio to be reconfigured.
- Can connect any number of CBA amplifiers and the software knows what you have

IEEE RADIO 2023, held in Mauritius, was another good opportunity for me to promote ham radio and West Mountain Radio interfaces. In fact, that international conference included a ham radio session, where me and local Mauritian hams presented our activities. I came to the location few days before the event to test the equipment. I booked a room with balcony so my portable vertical antenna was placed there (Fig. 1, 2). The other devices, including RIGblaster plug&play and RIGblaster Advantage, were placed on a coffee table in the room (Fig. 3, 4).
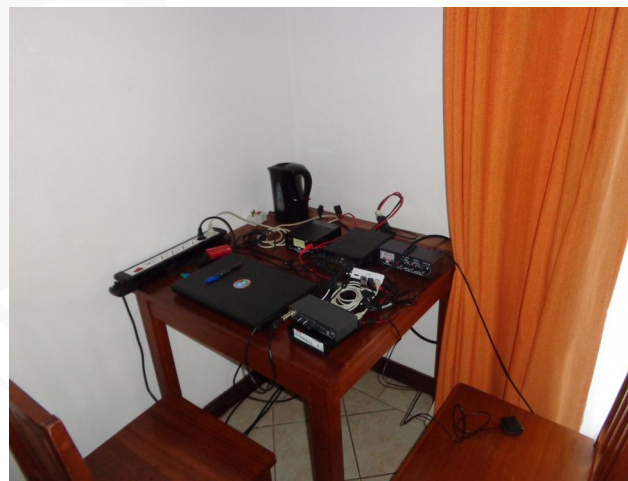


Fig. 1



Fig. 2



Fig. 3



Fig. 4

The plan was to test VHF packet-radio and the 'old' 300bd HF packet-radio for APRS positioning purpose. The antenna cable was fed into a portable radio that was also placed in my hotel room, over an antenna tuner. RIGblaster Advantage was attached to both that radio and a laptop computer running a node/BBS/Winlink software, while RIGblaster plug&play was used for VHF APRS. As I found the table in the room corner too small for serious work, I used the other large table for the ham gear (Fig. 5, 6).

Fig. 5                                    Fig. 6

Soon after, the APRS map shown new stations, Fig. 7-8. (I worked under a special callsign 3B8YT.)



Fig. 7                                    Fig. 8

The conference started on May 1 (Fig. 9 and 10). The afternoon part of the first conference day was mostly devoted to ham radio display. The president of Mauritian Amateur Radio Society (MARS), Jean Marc 3B8DU, was also there, accompanied by few local hams, who also had their talk & demo, Fig. 11 and 12.

Fig. 9



Fig. 10



Fig. 11



Fig. 12

Our session took some 2.5 hours, and we presented important features of ham radio hardware & software used in QO-100 satellite operation, RF email exchange, positioning systems, and cases of emergency. During the Jean Marc's talk, his team prepared instruments in the background. Later we made a group ham photo of all who participated (Fig 13, 14).



Fig. 13



Fig. 14

During my part of the session, I made a rich technical display, and described various activities in data traffic modes (Fig. 15-16).



Fig. 15



Fig. 16

The next four days, both RIGblaster plug&play and RIGblaster Advantage, and other gear were used in the conference room, and the audience show the interest in ham radio technology (Fig. 19-22) …



Fig. 19



Fig. 20



Fig. 21



Fig. 22

Getting used to a new operating system is always a chore so here's a few tips I've found on Windows 11 which will be of interest to ham radio operators and especially those who use digital mode software.

Sound System
Audio settings seem to get more complicated with every release of Windows and Windows 11 is no exception. Changing volume levels is something you'll be familiar with if you operate amateur digital mode software. I find some programs require a very low level input from the radio and others seem to need quite a bit of drive. Transmit audio requires tweaking to get similar output power between programs too and this means I'm often delving around in the Windows sound system to make adjustments.

You can try navigating through Windows Settings>Sound or try the Volume Mixer (right-click on the system tray speaker icon) but I prefer to use the Sound Control Panel which has been a core part of Windows for many years.

Recently I came across a method that speeds up access to the Sound Control Panel and opens the Playback and Recording tabs automatically. You can try it out by making a new shortcut on your desktop and pointing it to run-dll32.exe Shell32.dll,Control_RunDLL Mmsys.cpl,,1
Double-clicking on your new shortcut will launch the Sound Control Panel with the Recording tab already selected.

Make another shortcut for rundll32.exe Shell32.dll,Control_RunDLL Mmsys.cpl,,0 and this opens Sound Control Panel with the Playback tab selected.
If you want some nice audio Icons for these shortcuts you can find some in the following locations %SystemRoot%\System32\DDORes.dll and %SystemRoot%\System32\mmres.dll
Windows 11 allows you to pin shortcuts to the task bar (drag the icon and choose "link") so you can add your new icons to it for even easier access.
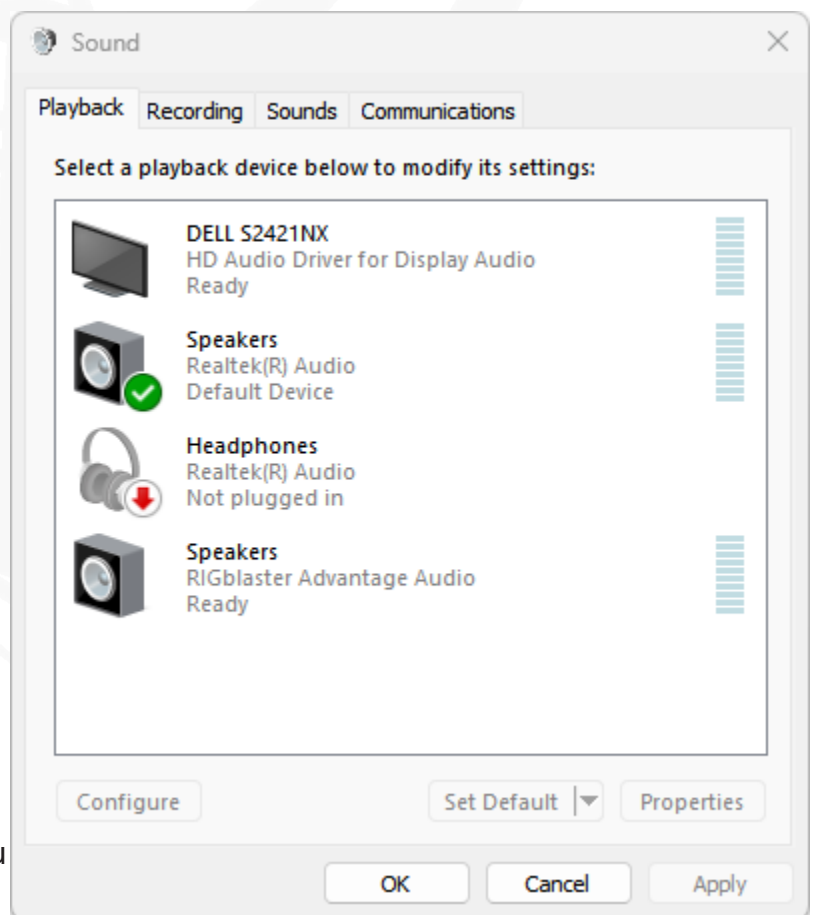


Figure 1: Windows Sound Control Panel

## Device Manager

If you find you need to poke about in Device Manager on a regular basis (e.g. looking for com ports) then we can give it the same treatment as we did with the Sound Control Panel.



Figure 2: New Audio Icons on the Task Bar

Create a new shortcut and point it to Rundll32.exe devmgr.dll DeviceManager_Execute

The icon for Device Manager is located within %SystemRoot%\System32\devmgr.dll
Now you have easy access to Device Manager as well as the audio system!

## Drivers

Sometimes it's handy to see what drivers are installed especially when troubleshooting hardware problems. One method is to use Device Manager and click the properties of the device in question but this can be cumbersome. Another method that shows all third-party drivers at once is shown below:



Figure 3: Device Manager and Audio Icons

Open a CMD prompt with admin privileges and type the following:
dism /online /get-drivers /format:table

You should get a listing similar to the one in figure 4.

```
C:\Users\sholt>dism /online /get-drivers /format:table

Deployment Image Servicing and Management tool
Version: 10.0.22621.1

Image Version: 10.0.22621.1928

Obtaining list of 3rd party drivers from the driver store...

Driver packages listing:
```

| Published Name | Original File Name | Inbox | Class Name | Provider Name | Date | Version |
|---|---|---|---|---|---|---|
| oem0.inf | amddmicext_acer.inf | No | Extension | intelliGo | 7/3/2021 | 100.1.4.580 |
| oem1.inf | iigd_ext.inf | No | Extension | Intel Corporation | 2/18/2022 | 30.0.101.1404 |
| oem10.inf | acerairplanemodecontroller.inf | No | HIDClass | Acer Incorporated | 8/5/2021 | 1.0.0.8 |
| oem100.inf | cannonlake-hsystem.inf | No | System | INTEL | 7/18/1968 | 10.1.16.7 |
| oem101.inf | cncport.inf | No | CNCPorts | Vyacheslav Frolov | 6/4/2012 | 3.0.0.0 |
| oem102.inf | comport.inf | No | Ports | Vyacheslav Frolov | 6/4/2012 | 3.0.0.0 |
| oem103.inf | com0com.inf | No | CNCPorts | Vyacheslav Frolov | 10/10/2015 | 3.0.0.0 |
| oem104.inf | ftdibus.inf | No | USB | West Mountain Radio | 12/12/2021 | 2.12.36.5 |
| oem105.inf | kabylakepch-hsystemthermal.inf | No | System | INTEL | 7/18/1968 | 10.1.11.4 |
| oem106.inf | bios_1.28.inf | No | Firmware | Insyde Software | 4/22/2022 | 5.42.1.28 |
| oem107.inf | atmel_devices_cdc.inf | No | Ports | Microchip Technology, Inc. | 1/10/2019 | 42.0.1.0 |
| oem108.inf | tigerlakepch-lpsystemlpss.inf | No | System | INTEL | 7/18/1968 | 10.1.24.5 |
| oem109.inf | cometlakepch-lpdmasecextension.inf | No | Extension | INTEL | 7/18/1968 | 10.1.27.4 |
| oem11.inf | tigerlakepch-lpsystem.inf | No | System | INTEL | 7/18/1968 | 10.1.24.5 |
| oem110.inf | mshdadac.inf | No | MEDIA | Intel Corporation | 5/13/2022 | 30.0.101.1994 |
| oem111.inf | cui_dch.inf | No | SoftwareComponent | Intel Corporation | 8/19/2022 | 31.0.101.3413 |
| oem112.inf | mtkwl6ex.inf | No | Net | MediaTek, Inc. | 4/15/2021 | 3.0.1.1075 |
| oem113.inf | cometlakepch-vsystem.inf | No | System | INTEL | 7/18/1968 | 10.1.33.3 |
| oem114.inf | sunrisepoint-hsystem.inf | No | System | INTEL | 7/18/1968 | 10.1.6.2 |
| oem115.inf | ftvspcenum.inf | No | System | FabulaTech | 12/7/2015 | 1.7.2.4 |
| oem116.inf | iastorvd.inf | No | SCSIAdapter | Intel Corporation | 7/23/2021 | 18.6.1.1016 |

Figure 4: 3rd Party Driver Listing

If you're looking for a specific driver or drivers you can pipe the output into the findstr program and add a match to show just those rather than the entire list.

For instance to see what West Mountain Radio drivers are installed you could use this:

dism /online /get-drivers /format:table | findstr /i /c:"west mountain radio"

```
C:\Users\sholt>dism /online /get-drivers /format:table | findstr /i /c:"west mountain radio"
oem104.inf    | ftdibus.inf      | No    | USB        | West Mountain Radio    | 12/12/2021 | 2.12.36.5
oem132.inf    | wmrfwupd.inf     | No    | USB        | West Mountain Radio    | 10/8/2021  | 1.0.2.0
oem155.inf    | rbd.inf          | No    | Ports      | West Mountain Radio    | 12/12/2021 | 2.12.36.5
oem30.inf     | cba45.inf        | No    | USBDevice  | West Mountain Radio    | 9/16/2022  | 1.0.0.10
oem89.inf     | wmr-cdc.inf      | No    | Ports      | West Mountain Radio    | 10/17/2021 | 0.0.0.0
oem97.inf     | rigblsi.inf      | No    | Ports      | West Mountain Radio    | 4/21/2020  | 6.6.1.2
```

Speech Recognition

Windows 11 comes with a pretty good speech recognition algorithm and sometimes I'll use this to give a written transcript of a QSO. It's never going to be 100% perfect, especially listening to HF but it does give a good account of itself.

You will need to make the default communications recording device the sound card which is sampling your radio's audio. On radios with an internal codec this will usually show up as something like "Microphone USB Audio Codec". If you have a TX monitor button turn it on to record your side of the QSO too.

Now simply run a text editor such as Notepad and when ready to capture the text hold down the Windows logo key (between Ctrl and Alt on the left hand side of your keyboard) and tap the letter H and you'll see the speech recognition recorder window popup (you can release both keys) and text will start to show in the editor window as long as there is audio coming from the radio.
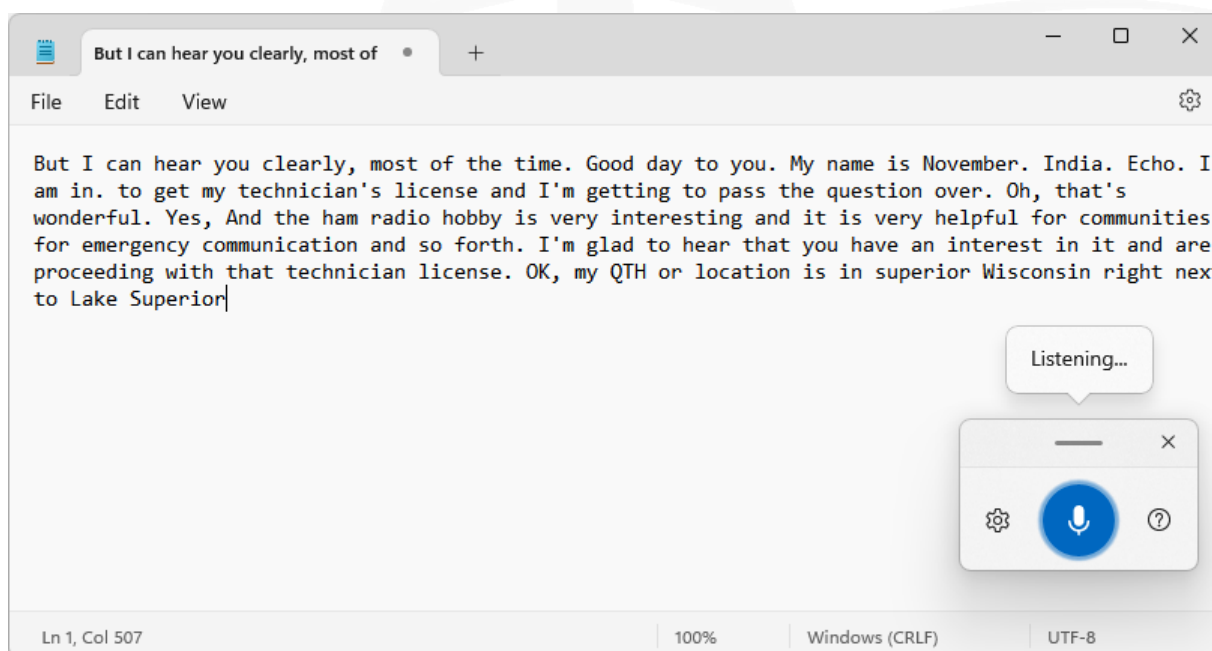
Written by Sholto Fisher, K7TMG. West Mountain Radio RIGblaster Support Mon-Fri 9am to 5pm Central. Direct number 208 635 5490 or email RIGblaster@westmountainradio.com

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# CBA V
## Computerized Battery Analyzer

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- New remote voltage sensing for higher accuracy

- Fuse blown LED and easy to change fuses

- More detailed LED status indication

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**BATTERY!**

Maintains up to 15VDC to your radio regardless of battery voltage

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- *Connect units in parallel for 80A and 120A!*

**QUIET, THERMALLY CONTROLLED FAN**
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**ADJUSTABLE RF ENABLE DELAY**
- *Provides smoother transmissions*

**OTHER GREAT FEATURES INCLUDE...**
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- *Extremely low RFI*
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DESIGN

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