

Initial Setup of BlueDV with AMBE3000 Dongle

Version 21

This approach to “going digital” offers advantages to the Ham:

Don't wait 5 years for the Sunspot cycle to fully recover the HF bands. Have fun now.

Get clear Digital sound with no hiss, QRM or lightning crashes.

Thousands of digital channels give you access to just about every country in the world.

No expensive Handie Talkie radios to buy or struggle to build their complicated code plugs.

No expensive lithium HT batteries to buy and replace or any expensive battery chargers.

No need to buy hotspots or learn the Pi-Star programming language.

No need to run a separate computer to change talk groups or rooms using Pi-Star.

No expensive towers, various antennas, lightning arrestors, or ground systems to install.

No need to hire expensive tower climbers or risk your life to install and maintain your antennas.

Resources: (The author has no commercial ties to the following firms.)

Northwest Digital Radio dongle: <http://nwdigitalradio.com/product/thumbdv/>

Free “BlueDV” software: <https://software.pa7lim.nl/>

To start in digital, you must have a DMR ID number and register that number with the Brandmeister Network. You must also complete both stages of registration to access D-Star.

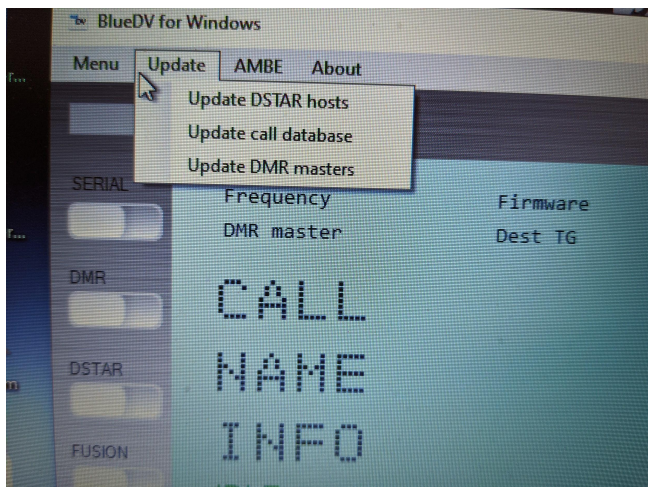
Turn on your computer's “Device Manager” before you plug in the AMBE3000 dongle in a USB port.

Open the “PORTS” list and plug in the dongle to see which COM port number is being assigned. In the BlueDV app under “Menu” open the “**Setup**” page. See the sample page at the end of this document.

Enter the COM PORT number in the appropriate locations and the other required information. Click on SAVE at the bottom of the page.

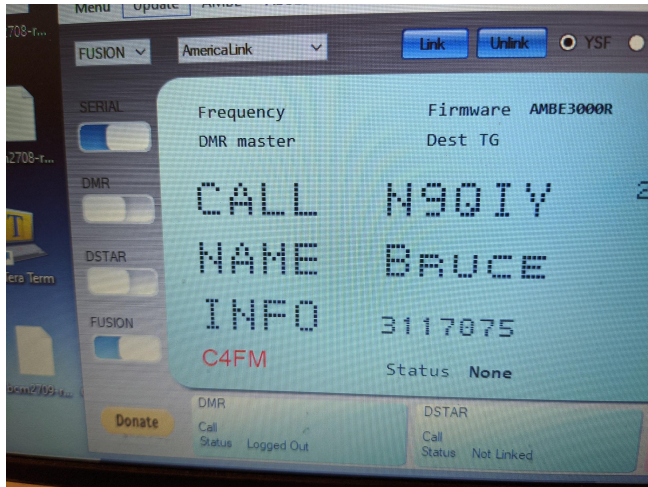
1. On the BlueDV startup page, click on the **SERIAL** and **DMR** buttons to turn on the DMR mode.
2. If the Status line says "Can not open COM port" , review the "**Setup**" page to make sure that the "AMBE" area has the "Serial Port" block assigned to the same COM port.
3. In the box on the right, click on "BM Lookup".
4. In the "Search Talkgroup" box, type in the Talk Group number, for example "999". Click on the line of text that appears as "9990 Parrot". To the right of the number, move the slider over to the "P" for private when using this DMR Parrot.
5. A new box will display. Set the mic level for DMR from -15. Run a few tests on Parrot.
6. After getting microphone and speaker levels set in DMR, click on the "9990" box and type in 3100. Set the slider back to "G" for Group Call.
7. Below the "3100" box it will display "BM US Nationwide Bridge".
8. You must do a short PTT to get the talk group to become active.
9. Request a radio check on this nationwide channel.
10. To do an audio test on Fusion, simply search for the word "parrot" in the list. On D-Star, select a room like "REF0001" and change it to the letter "E" for an echo test.

----- **How it works.** -----



At the top of the screen you will see "**Menu**" and "**Update**". Click on the "**Update**" button to reveal the "Update DSTAR hosts", "Update call database", and "Update DMR masters". Click each of these so the databases in the app are current. It will take a few seconds for each one to download.

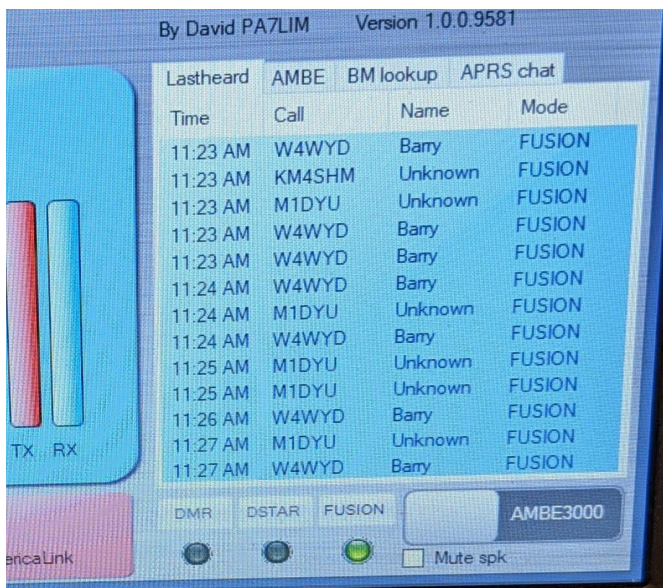
You will want to click the "Update call database" on a regular basis as many hams are joining and getting their new DMR ID numbers assigned. If you begin to see DMR numbers appearing without names and callsigns, you need to update the call database.



While the **SERIAL** button and the three digital **Mode Buttons** are available on the left, turning on a Mode does not make it immediately active. For example, if you select Fusion, you will need to go to the top line and choose a room from the drop-down list of Fusion rooms. In this example, it is “America Link”. Then click on the blue **“Link”** button above. If you were linked to another room, you must **UNLINK** first before linking to a new room.

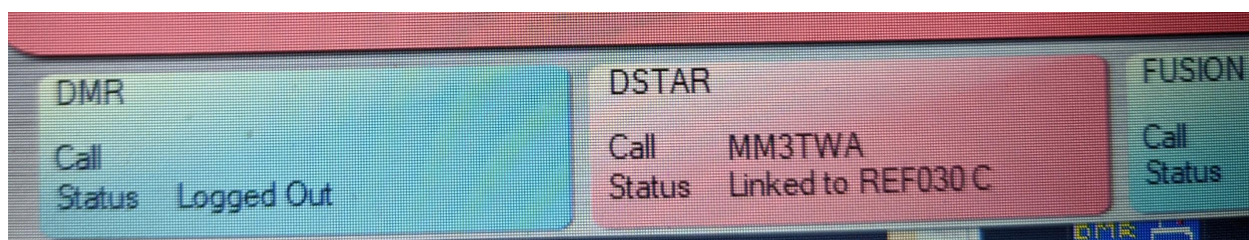
On the right side of the window below, you will see three simulated **Green LEDs**. In this example, it indicates that Fusion is active. To select another mode for transmission that is on but not active, click on the **LED Label** ABOVE the simulated LED and it will switch and the LED will turn green on as long as any active QSO has ended on the previously active mode. **The green LED also marks the mode that will transmit** if you press your spacebar or you click the button to the left of the **“AMBE3000”** graphic.

The **“Last Heard”** list, shown here, will display the most recent **signals received** based on your settings in the app. If you have a QRZ account, double click on a ham’s call sign **anywhere it is displayed** in the BlueDV app and his Contact Page will appear.

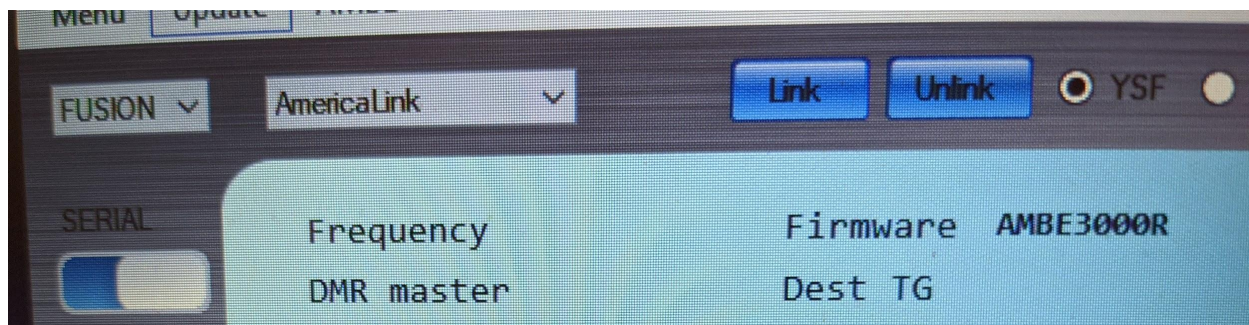


If you have more than one mode active, it is best to display the **“Last Heard”** window so you can quickly determine which mode you heard last **before you attempt to transmit**. The most recent transmission will be positioned at the bottom of the list. Remember, to turn on the Green LED the label above the LED for that mode must be clicked **before you will be able to transmit** within that mode.

The three **“Status Blocks”** below the main window, DMR, D-Star and Fusion, indicate the current condition of the mode. For example, the D-Star block below says, “Linked to REF030 C” and the ham’s call sign is “MM3TWA”. The DMR block shows “Logged Out”. The pink color means this ham, MM3TWA, is currently transmitting. If the MM3TWA and the other side of his QSO remain active without much of a pause in between transmissions, the app will not switch to one of the other modes without clicking in the **Status Block** or **LED Label**. If all three modes are active, double clicking in the Status Box will allow listening to that mode at the current time. If another mode becomes active, however, the app will switch to that mode.

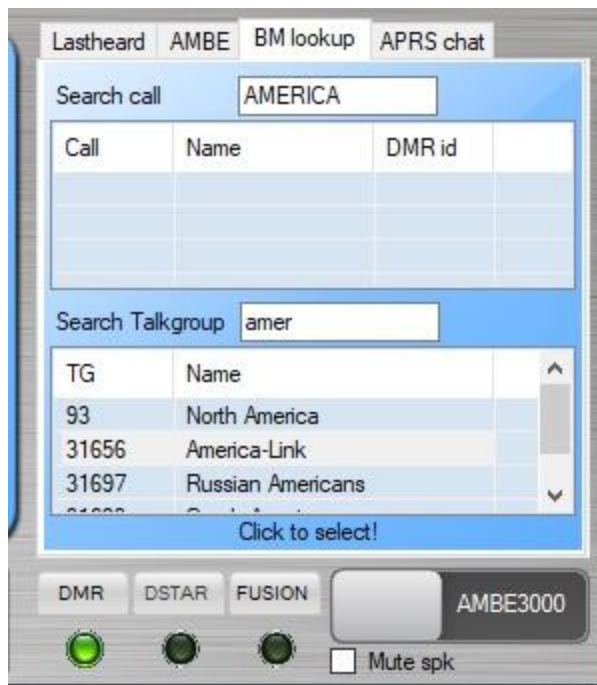


When using both DStar and Fusion modes you will use the line above the main window and click the **“Link”** and **“Unlink”** buttons when switching “rooms”. To switch when in these two modes, **press the “Unlink” first**, then select the new room from the dropdown lists and press “Link” again.



The DStar rooms include letters that identify a “Module” being used. For example, REF030 C uses the “C” module which indicates the repeaters are tied into 2 meters. The “B” Module is tied to 70 cm repeaters and “G” is tied to a computer Gateway instead of an RF repeater.

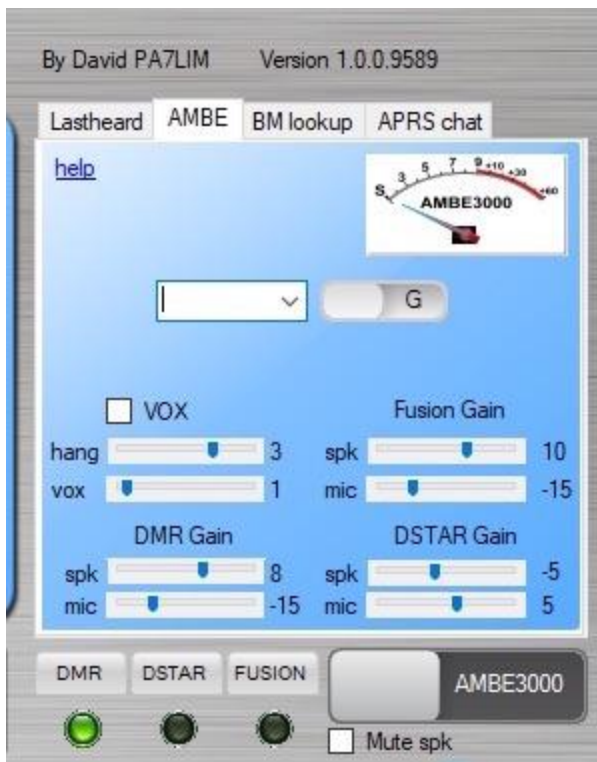
Some repeaters are active on multiple Modules, others are tied to only one. If you hear a QSO on DStar but **you do not get a reply to your call**, it may be that they are on a different Module than you are. The **Setup Page** can be set to “B” for 2 meter repeaters, which is currently the most common, and then enter the “Default Reflector” you monitor such as REF030 C.



To change Talk Groups in the DMR mode, several options are available. First, click on the tab **“BM Lookup”** for Brandmeister lookup. In the box titled **“Search Talkgroup”** simply type in the name or talk group number if you know it. If you start to type the name, it will begin to display the names that begin with those letters.

Here you see the letters for “America” were typed and after “amer” was entered, a list of Talk Groups that had the word America appeared.

Simply double-click the name you want from the scrollable list and the “Search Talkgroup” window will make that talk group active. If there is no activity, you may need to key the PTT to activate the room.



The **“AMBE”** tab can be clicked to open the audio adjustment screen. Note that each mode has both **“Speaker”** and **“Microphone”** sliders that can be adjusted. For example, both the DMR and Fusion microphone settings in this example are set to minus 15 units.

Before transmitting on DMR, open the 9990 talk group to “echo test” your microphone setting to make sure it is not set too high, a common complaint. This can also be done on Fusion on the “Parrot” room and in DStar at REF001 set to “E” for echo testing. If you update your BlurDV app, reset these adjustments.

If you run any other application that adjusts audio on your computer, be sure to recheck your settings when you return to the BlueDV application.

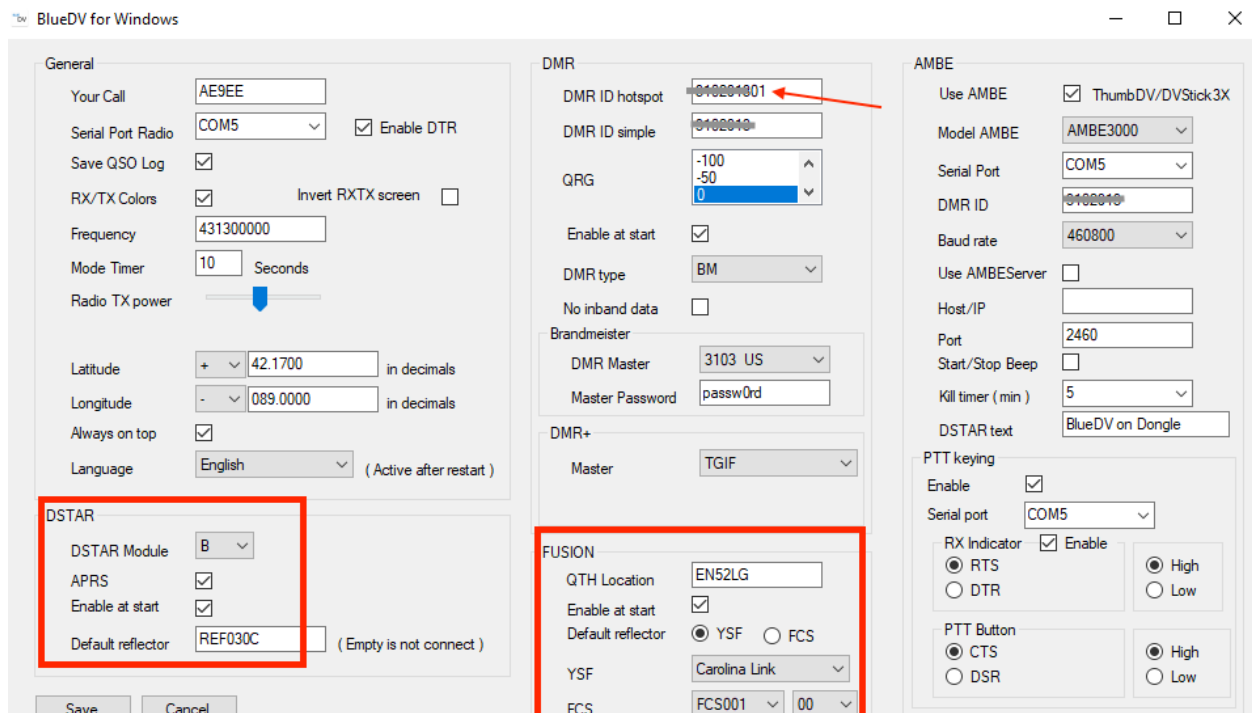
The **Signal Meter** at the top of the screen can give you a quick view of your current microphone levels. It should peak **no higher than about 9** on the meter.

On the **Setup Page** below, you can establish the default rooms for two of the three modes. Once the BlueDV app is turned on, those D-Star and Fusion rooms will be connected initially. The last DMR “talk group” setting will be retained when the app is restarted. All of the rooms can be changed by using the procedures previously described when desired.

At the top of the DMR column you will notice that the characters “zero and one” have been added to identify a “DMR ID Hotspot” currently in use within this ham’s shack. If you have other hotspots in operation you can avoid conflicts on Brandmeister by identifying each hotspot by numbering them individually. Make sure the “DMR ID Simple” is just the original DMR number without any added numbers.

A change at Brandmeister in 2020, requires you to create a new “Master Password” for your hotspots. It should not be “passw0rd” as shown below in this graphic.

Click **SAVE** in the lower left corner to retain the changes made on the Setup page.



In the main Menu, click on “Update”.

You will see a listing of “Update DSTAR hosts”, “Update call database” and “Update DMR masters”.

If you are using DMR, you will want to click on “Update call database” on a regular basis so your list of DMR ID numbers stays up to date as new hams join. It will enable you to click on a call sign and get the current information from the ham’s QRZ page.

Once the “Update call database” is clicked, it can take 10 seconds or more for the DMR ID file to appear. Click the file to update the list in your copy of BlueDV.

Possible Problems

1. If you have made significant changes and SAVED them on the **Setup** Page, you may need to remove and reinstall the AMBE3000 Dongle in the USB port to reboot the device.
2. Do you have other hotspots on Brandmeister using your DMR ID? You may need to add an extension to the end of your DMR ID number on these hotspots such as 01, 02. It may take some time for Brandmeister to recognize these changes and allow this additional device to transmit on DMR.
3. If you get the message, “**Can not open COM port**”, or if you attempt to operate BlueDV and you get error messages in the **Status Blocks**, make sure you do not have two instances of the BlueDV app running at the same time.
4. One strange issue involves DMR. If you are transmitting on D-Star or Fusion, your name and call sign will appear in the “**Last Heard**” list. Unfortunately, it doesn’t happen with DMR. You’ll see the other guy in the QSO, but your name and callsign will not appear in YOUR “Last Heard” list. Maybe an update is coming soon from David.
5. If you run “Windows Defender” or other protection software, make sure you change it’s settings to allow BlueDV to run.

If you have problems establishing a COM port, you may need to install a new driver. Go to this link:

https://www.ftdichip.com/Support/Documents/InstallGuides/AN_396%20FTDI%20Drivers%20Installation%20Guide%20for%20Windows%2010.pdf

6. Is your computer reporting the error “Unhanded exception has occurred in your application” when starting the BlueDV app? Update to the latest version by going to this link.

<https://software.pa7lim.nl/BlueDV/BETA/Windows/>

After the installation, reset your microphone and speaker volumes under the “AMBE” tab using the “Echo” or “Parrot” channels of each mode described earlier in this document.

----- Version 21, March 31, 2021 by Jim Hall - AE9EE -----

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