Experience using BlueDV for Windows

(Test Version 1.0.0.9595)

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Introduction

In July 2018, I summarized the experience of BlueDV for Windows beta-version 1.0.0.9522. After that, not only ThumbDV but also DVmega DVstick 30 (images below) was added, and as of January 2021, test version 1.0.0.9595 is available on PA7LIM, software author David's Web (http://software.pa7lim.nl/BlueDV/BETA/Windows/) has been uploaded. With this test version, D-Star, DMR, and FUSION can be used by only the Thumb DV or DVmega DVstick 30 USB sticks on a PC without any other devices. Here is a summary of my experiences with ThumbDV. If you want to use DVmega DVstick 30 below image, please replace ThumbDV with DVmega DVstick 30 and read.

Premise for use

- The software (Lhasa etc.) that decompresses the downloaded zip format compression software should be installed in advance on the Windows PC.
- My personal computer OS is a notebook type (64bit), a tablet type (32bit?) and Disktop type (32bit) is all Windows10. However, somehow the disc top type may not be usable because the received sound is interrupted in pieces. Be aware, the software may not work depending on the personality of personal computer and LAN environment.
- You have to have already acquired the 7 digit ID of CCS7. (For the method of obtaining, see APPENDIX at the end of the book)
- A radio is unnecessary but a microphone (about 1,000 yen) and a speaker has to be prepared for personal computers.
- Be aware that it is a test version so changing versions.

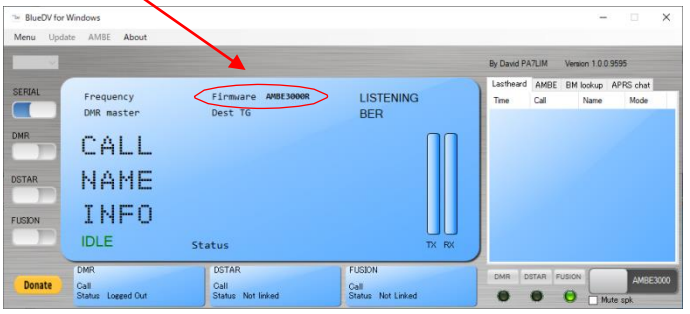
1 . Download and install software

Download and install from http://software.pa7lim.nl/BlueDV/BETA/Windows/.
See APPENDEX at the end of the book for details.

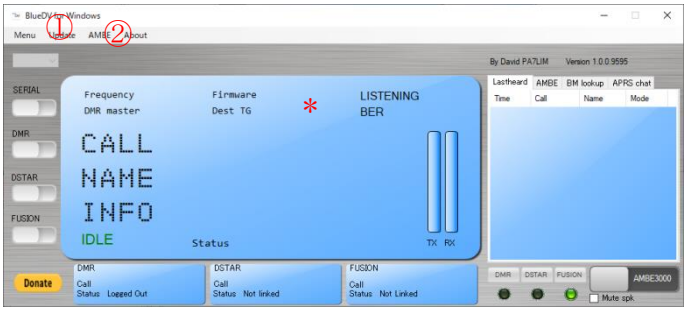
2 . Software initial settings

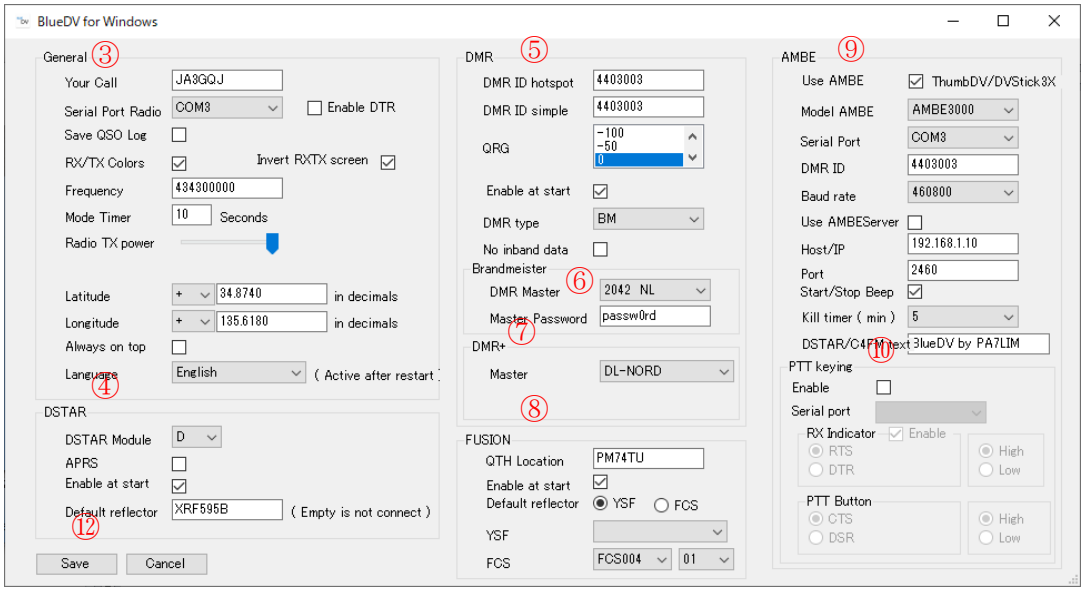
After confirming that the COM port recognizes ThumbDV and clicking the icon on the disk top, the control panel "BlueDV for Windows" (shown below) will pop up. Confirm that

Firmware "AMBE 3000R" is displayed on the blue screen. If ThumbDV is not recognized, "Not detected" is displayed.



Click the "SERIAL" button of the control panel "BlueDV for Windows" ⇒ Blue turns white ⇒ Firmware is hidden (*) ⇒ Select "Menu" tag ⇒ Click "Setup" ① ⇒ Open the setting screen ② of the control panel "BlueDV for Windows". Then, make the necessary settings for the operation of D-Star, DMR, and FUSION.





A) General frame ③(common to D-Star, DMR, FUSION).

Items	Description
Your Call	Enter your call sign
Serial Port Radio	In this example is COM3.(It depends on the computer due to automatic recognition.)
Save QSO Log	It may be the default
RX/TX Color	Put a check
Invert RX/TX screen	With check mark, the screen color is red when transmitting and green when receiving.
Frequency	Since DVmega is not used, the default number is sufficient.
Mode Time	Leave the default (However, since it depends on the computer, it may be necessary to make adjustments later.)
Radio TX power	Leave the default (When not using DVMEGA)
Latitude, Longitude	Enter the latitude and longitude of your QTH, (+) is probably north latitude and east longitude, (-) is south latitude and west longitude.
Always on top	Check if you want the control panel to always be on the front of the screen.
Language	English

B) DStar frame ④

Items	Description
DSTAR Module	Leave the default
Enable at start	Check it when you want to start from D-Star.
APRS	Leave the default
Default reflector	XRE595 B (Blank if you don't want to connect anywhere at startup)

C) DMR frame⑤

Items	Description
DMR ID hotspot	Enter the 7-digit CCS7 ID obtained by referring to APPENDIX at the end of the book.
DMR ID simple	Ditto
QRG	Leave the default
Enable at start	Check it when you want to start from DMR.
DMR type	Three types can be selected from the pull-down menu: BM, DMRPLUS,XLXDMR. Here, select and set BM.
No inband data	Leave the default

D) Brandmeister frame⑥

Items	Description
DMR Master	TG (Talk Group) can be selected from the pull-down menu.
Master Password	Leave the default passw0rd. (You can now use the Brandmeister DMR.) In the pull-down menu, there is a list called TG (Talk Group) that corresponds to modules such as XLX reflectors.

E) DMR+ frame⑦

・ You can select the desired talk group from the Master pull-down menu.

F) FUSION frame⑧

A group can be selected from the pull-down menu.

Items	Description
QTH Location	Enter your own grit locator.
Enable at start	Check it when you want to start from FUSION.
Default reflector	Select YSF.
YSF	Select from the pull-down menu.
FCS	Leave the default

G) AMBE frame⑨ (Important)

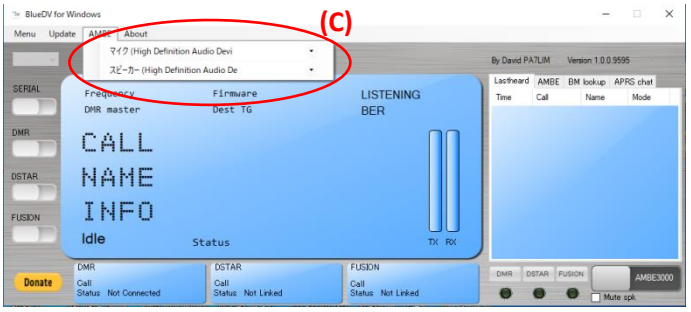
Items	Description
Use AMBE	Be sure to add a check mark to recognize ThumbDV.
Model AMBE	AMBE3000 (For ThumbDV)
Serial port	Enter the same number as the 'Serial Port Radio' in General frame ③.
DMR ID	Enter the same number as the ' DMR ID hotspot' in DMR frame⑤.
Baud rate	Select and set the baud rate 460800 or 921600 from the pull-down menu.
Use AMBE serve	Leave the default
Hosts/IP, Port	Leave the default
Start/Stop Beep	Add a check mark and beep when reception is successful. Remove the check mark when you get used to the operation and it becomes jarring.
Kill timer (min)	TX time setting. You can select up to 5 minutes.
DSTAR / C4FM text	The characters that appear on the receiving side when you send. You can edit it.

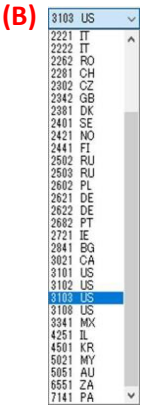
H) PTT keying⑩

Leave PTT keying the default.

-------- This is the end of setting. Click "Save" ⑫ (figure on page 5) to close the screen. --------

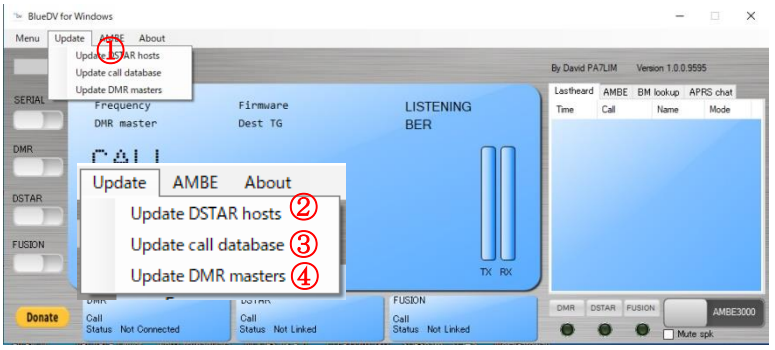
'A' on the right of the figure below is the contents (list) of the Brandmeister, and 'B'is the contents (list) of the DMR + pull-down menu. The sound card is automatically selected by default, but you can also select a sound card by 'AMBE' tag in the control panel 'BlueDV for Windows' in the figure below 'C'. If you cannot hear the received sound or the voice does not reach the other party, it will be checked.





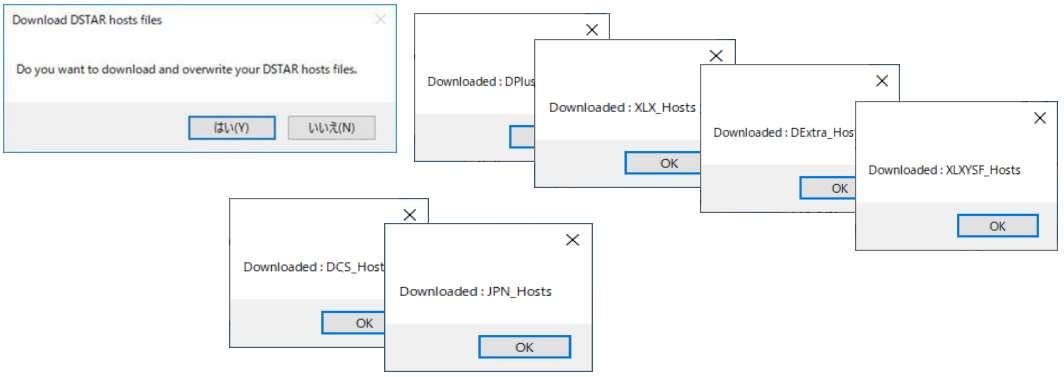
3. Data Update

After completing the settings, open Update tag ① to update the data of D-Star hosts, call database, DMR master.



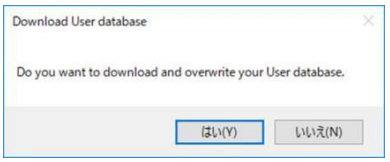
Update D-Starhosts ②

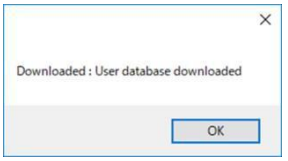
Click "Yes" on the first pop-up screen ⇒ Next, six small screens will be displayed in an overlapping manner ⇒ Then click the "OK" button on the screen in order.



Update call database ③

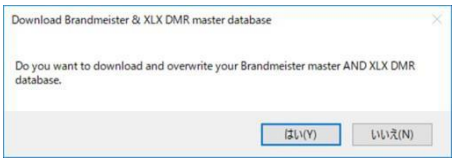
Click "Yes" on the first pop-up screen ⇒ Just click "OK" on the next pop-up screen. It will take some time for the update to finish.

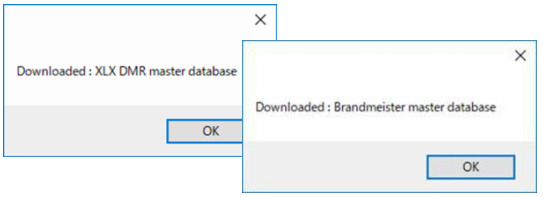


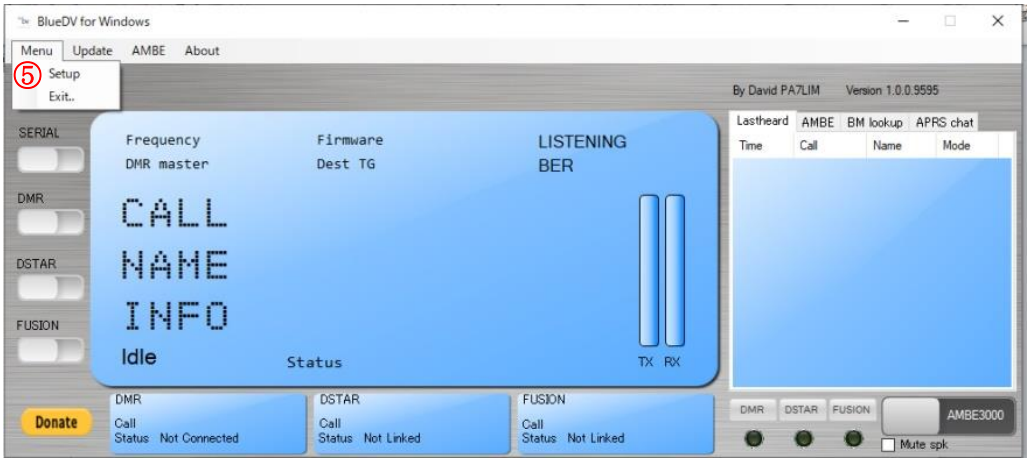


Update DMR master ④

Click "Yes" on the first pop-up screen ⇒ Next, just click the "OK" button on the two pop-up screens.







Next, exit the software once with "Exit" ⑤ of the control panel BlueDV for Windows.

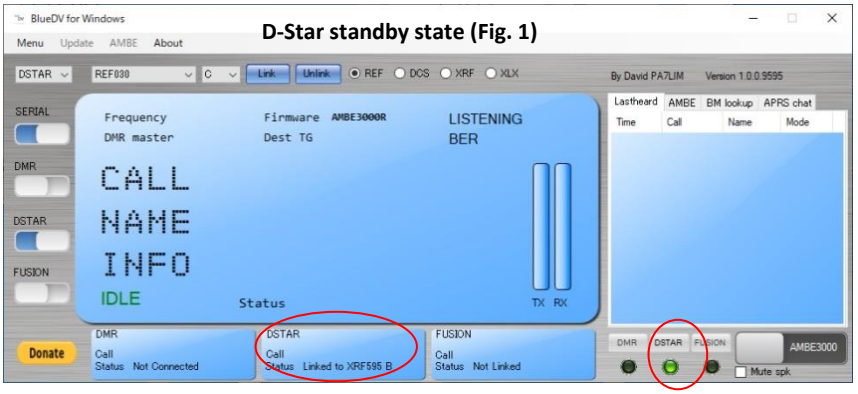
Operation of D-Star

1 . RX

Click the icon on the desktop ⇒ Start the software ⇒ The BlueDV for Windows control panel will pop up. The startup status is based on the default settings, and after the screen temporarily turns green, it goes into the reception standby state (Fig. 1) with the announcement of the connection. At this time, the green lamp of "D STAR" at the bottom right of the screen is lit.

The contents of the initial settings (page 5) are:

- *Enable at start : I put a check mark.*
- *Default reflector : XRE595 B*



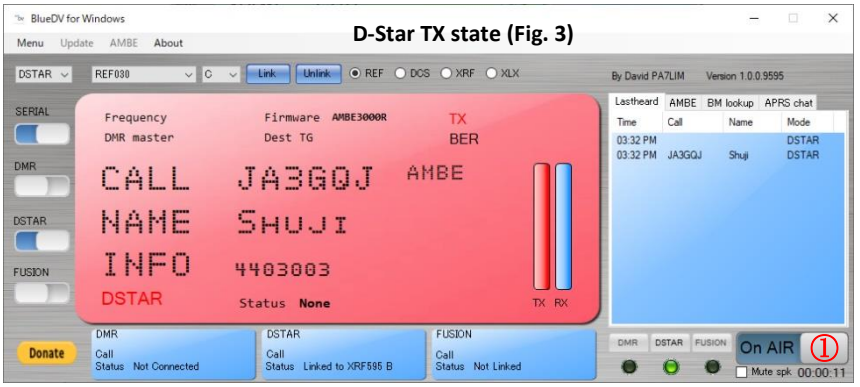
D-Star standby state (Fig. 1)

When the signal is received, the screen turns green (Fig. 2) and you can hear the voice of the other station.

D-Star RX state (Fig. 2)

2 . TX

When the partner station is on standby, touch the space key on the keyboard to turn on PTT ①. Then speak into the microphone. At this time, the screen turns red to indicate the transmission status(Fig. 3). Touch the space key on the keyboard again to turn the screen blue and return to reception. You can also turn PTT ① ON / OFF by clicking the mouse. Of course, you can also make a CQ call.



D-Star TX state (Fig. 3)

3 ．Confirmation items required for RX and TX.

- The sound card is recognized and the microphone should be connected.
- The gain of the speaker during reception and the gain of the microphone during transmission should be adjusted properly.

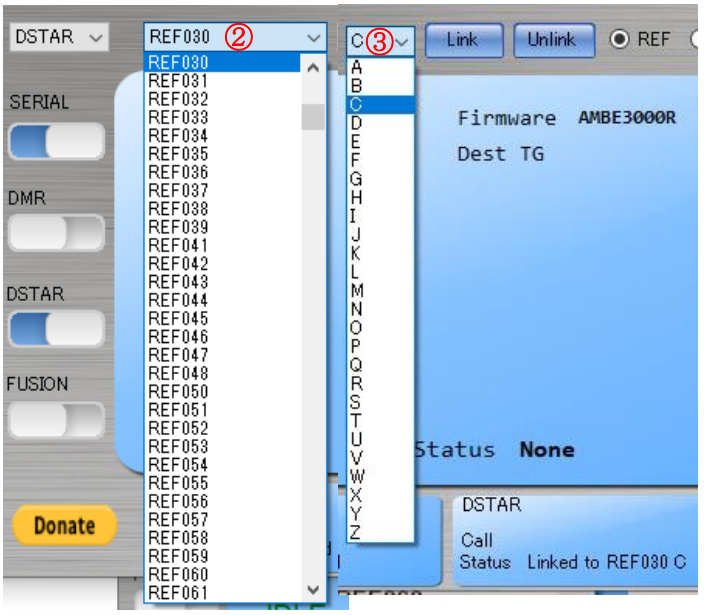
4 .How to adjust the gain of the microphone and speaker

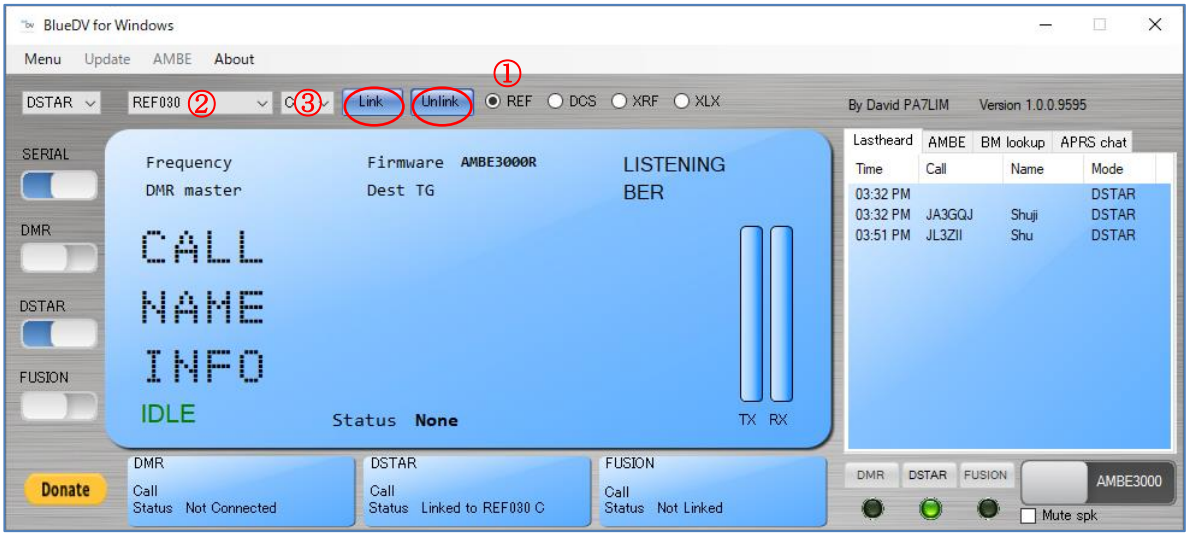
- Adjust the gain of the microphone and speaker with the DSTAR Gain of the "AMBE" tag on the D-Star control panel, referring to the report of the communication partner. In some cases, the sound card adjustment function may be used.

  For the "AMBE" tag on the D-Star control panel, see the APPENDEX page at the end of the book.

5 ．Change connection Reflector

If you want to change the reflector to be used, click the "Unlink" button ⇒ Disconnect the reflector in use ⇒ Select the desired group with the "①" radio button ⇒ Select the reflector and module of purpose from the pull-down menus (② and ③) ⇒ Click the "Link" button to connect.



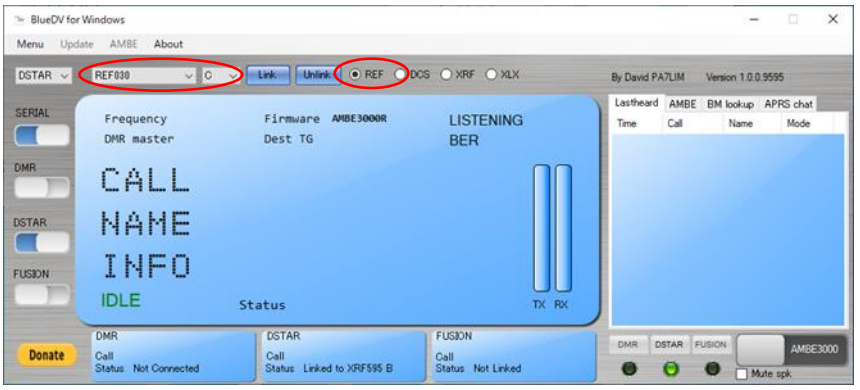


5 . End of operation

Click the "SERIAL" button on the left side of the screen ⇒ Click the "X" on the upper right side of the screen to finish.

What I noticed

It was connected to the XRF595B as specified at startup, but the reflector and module display is REF030C. Even if the display is corrected to XRF595B and restarted, the connection is XRF595B and the display returns to REF030C. Even if you change the reflector and module and restart after operation, it will be XRF595B as specified at startup and it is connected, the display of the reflector and the module is REF030C.



However, there is no problem if you select the reflector using the pull-down menu on the screen, the radio button, and the "Link" and "Unlink" buttons without worrying about this phenomenon.

The RX screen when the 'RX/TX Color' and 'Invert RX/TX Screen' are checked in the software settings and the RX screen when the check mark is not added to the RX / TX Color are different.

TX / RX screen when 'RX / TX Color' is not checked

RXscreen	TX screen
	

TX / TX screen when 'RX / TX Color' is checked

RX screen	TX screen
	

Same for FUSION and DMR

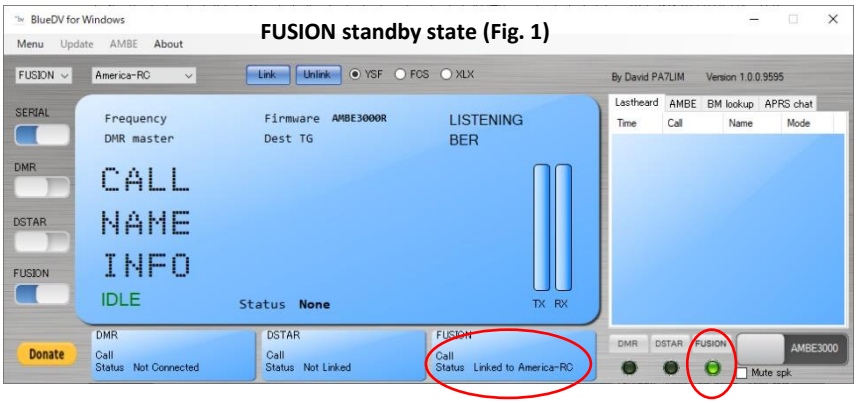
Operation of FUSION

1 . RX

Click the icon on the desktop ⇒ Start the software ⇒ BlueDV for Windows will pop up. The startup status will be in the reception standby state (Fig. 1) depend upon the initial settings. Unlike D-Star, the screen doesn't turn green temporarily, and there's no connection announcement. At this time, the "FUSION" green lamp at the bottom right of the screen is lit.

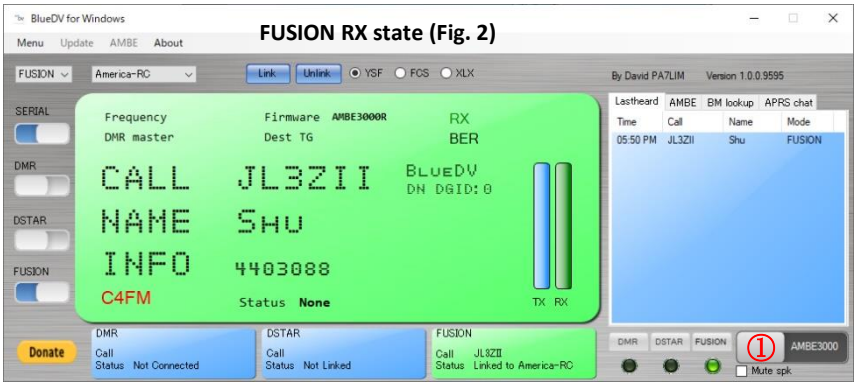
The contents of the initial settings (page 5) are:

- *Enable at start : I put a check mark.*
- *Default reflector : YSF　America-RC*



FUSION standby state (Fig. 1)

When the signal is received, the screen turns green (Fig. 2) and you can hear the voice of the other station.



FUSION RX state (Fig. 2)

2 . TX

When the partner station is on standby, touch the space key on the keyboard to turn on PTT ①. Then speak into the microphone. At this time, the screen turns red to indicate the transmission status(Fig. 3). Touch the space key on the keyboard again to turn the screen blue and return to reception. You can also turn PTT ① ON / OFF by clicking the mouse. Of course, you can also make a CQ call.

FUSION TX state (Fig. 3)

3 ．Confirmation items required for sending and receiving.

・ The sound card is recognized and the microphone should be connected.
・ The gain of the speaker during reception and the gain of the microphone during transmission should be adjusted properly.

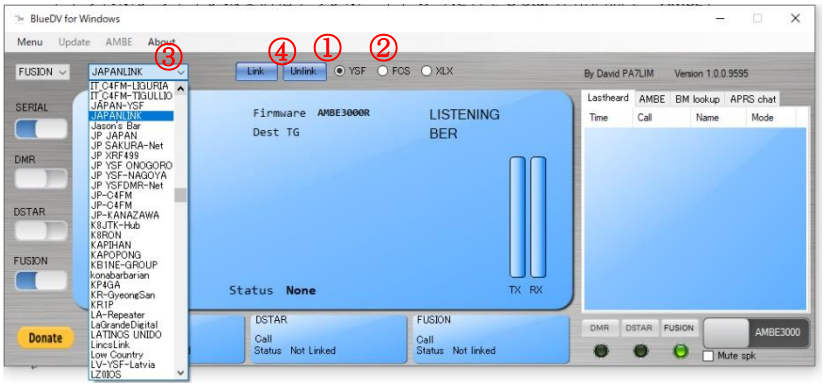
4 ．How to adjust the gain of the microphone and speaker

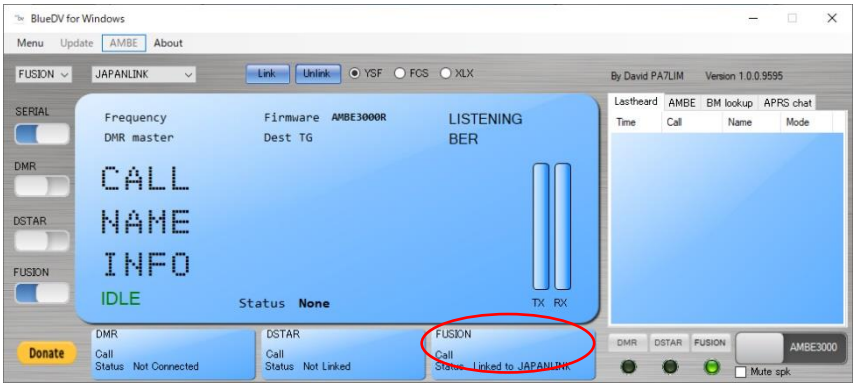
・ Adjust the gain of the microphone and speaker with the FUSION Gain of the "AMBE" tag on the D-Star control panel, referring to the report of the communication partner. In some cases, the sound card adjustment function may be used.

For the "AMBE" tag on the FUSION control panel, see the APPENDEX page at the end of the book.

5 ．Change connection reflector

If you want to change the reflector, click the "Unlink" button ① ⇒ Disconnect the reflector in use ⇒ Confirm that the radio button of "②" is YSF ⇒ Select the desired reflector from the pull-down menu of "③" ⇒ Click the "Link" button ④ to connect.





5 ．End of operation

Click the "SERIAL" button on the left side of the screen ⇒ Click the "X" on the upper right side of the screen to finish.

Operation of DMR

1 . RX

Click the icon on the desktop ⇒ Start the software ⇒ BlueDV for Windows will pop up. The startup status will be in the reception standby state (Fig. 1) depend upon the initial settings. Unlike D-Star, the screen doesn't turn green temporarily, and there's no connection announcement. At this time, the "FUSION" green lamp at the bottom right of the screen is lit.

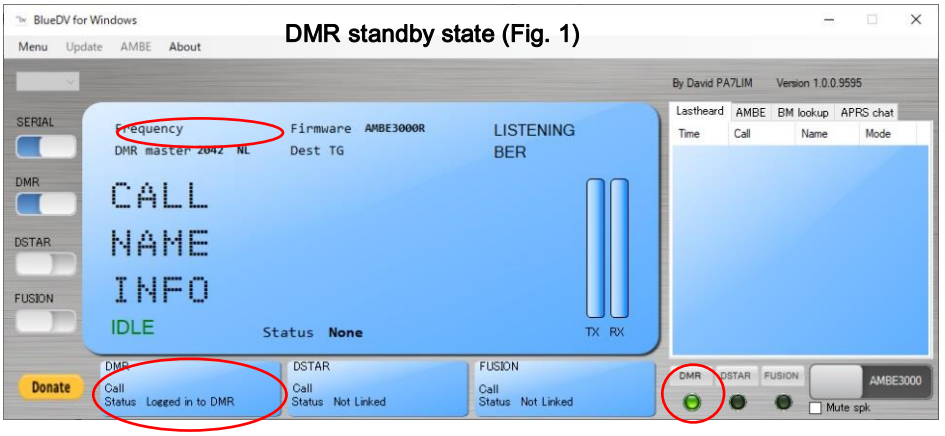
The contents of the initial settings (page 5) are:

- *Enable at start : I put a check mark.*
- *DMR type : BM*
- *DMR Master : 2042 NL*

DMR of AMBE tag shows 204 NL. (Refer to APPENDEX at the end of the book for AMBE tag.)

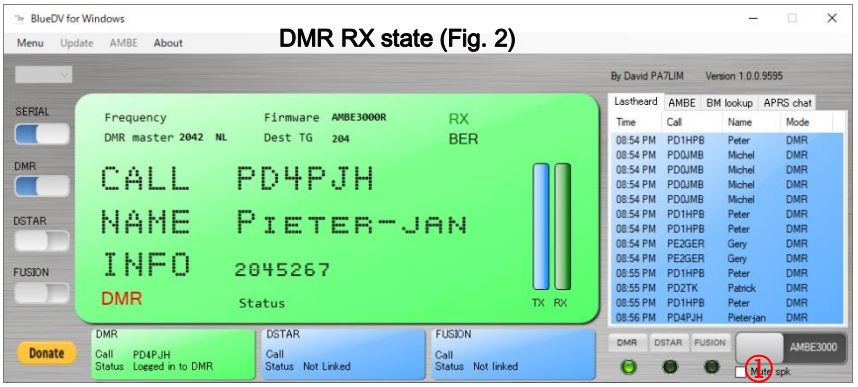
DMR master② displays the Brandmeister and DMR + data selected in the initial settings. If you select XLXDMR, nothing is displayed.

DMR standby state (Fig. 1)



When the signal is received, the screen turns green (Fig. 2) and you can hear the voice of the other station.

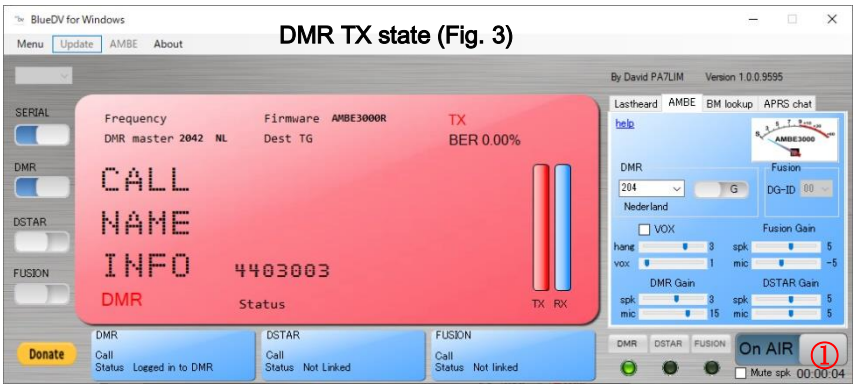
DMR RX state (Fig. 2)



2 . TX

When the partner station is on standby, touch the space key on the keyboard to turn on PTT ①. Then speak into the microphone. At this time, the screen turns red to indicate the TX Status(Fig.3). When you touch the space key on the keyboard again, the screen turns blue and the RX state is set. You can also turn PTT ① ON / OFF by clicking the mouse. Of course, you can also ake a CQ call.

DMR TX state (Fig. 3)



3 . Confirmation items required for sending and receiving.

- The sound card is recognized and the microphone should be connected.
- The gain of the speaker during reception and the gain of the microphone during transmission should be adjusted properly.

4 . How to adjust the gain of the microphone and speaker

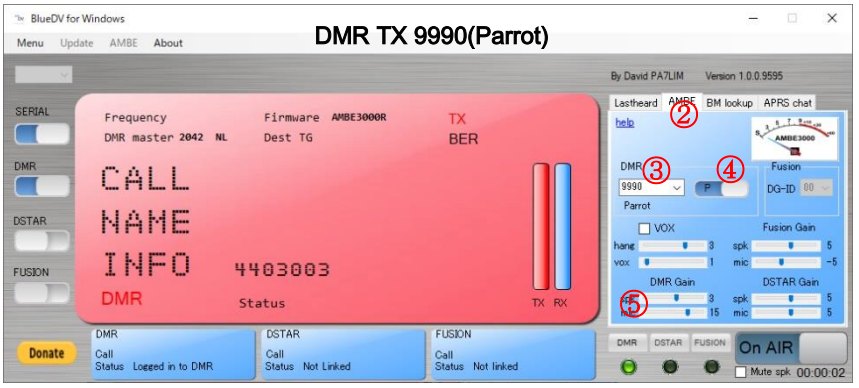
I think there are two ways as follows:

4-1. Adjust the gain of the microphone and speaker with the DMR Gain of the "AMBE" tag on the DMR control panel, referring to the report of the communication partner. In some cases, the sound card adjustment function may be used.

For the "AMBE" tag on the DMR control panel, see the APPENDEX page at the end of the book.

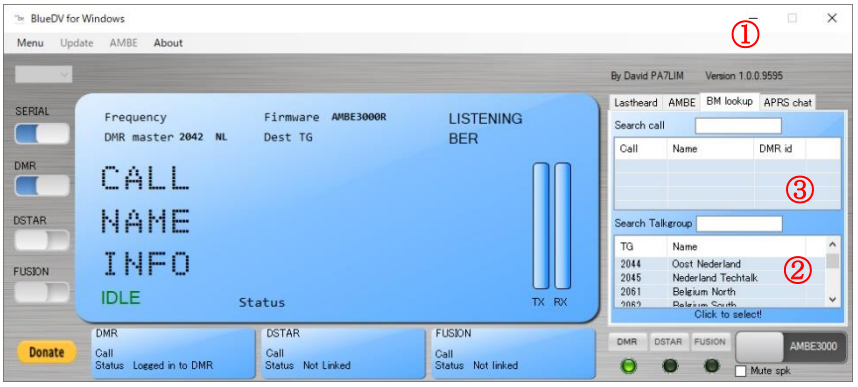
4-2. Enter 9990 in the DMR reflector selection field ③ of the AMBE tag ② ⇒ Switch between group (G) and individual (P) to P ④ ⇒ Touch the space key on the computer keyboard to perform an echo test ⇒ then adjust the DMR Gain ⑤ .

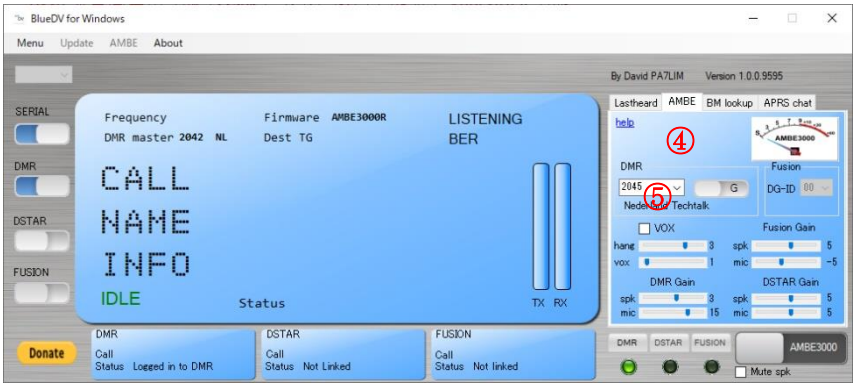
DMR TX 9990(Parrot)



5 ．Change connection Talkgroup

To change the TG, select from the pull-down menu ② of the "BM lookup" tag ① or enter the TG number in the "Serch Talk group" field ③ to search and click the result. ⇒ "AMBE" tag ④ opens ⇒ Recorded in the DMR column ⑤. ⇒Can be operated with the selected TG.





5 ．End of operation

Click the "SERIAL" button on the left side of the screen ⇒ Click the "X" on the upper right side of the screen to finish.

The following is unexperienced in Test Version 1.0.0.9595.

1 . Operation of DMRPLUS

2 . Operation of XLXDMR
(See http://hamradio.dip.jp/ja3gqj/ThmbDV_BlueDV9522e.pdf)

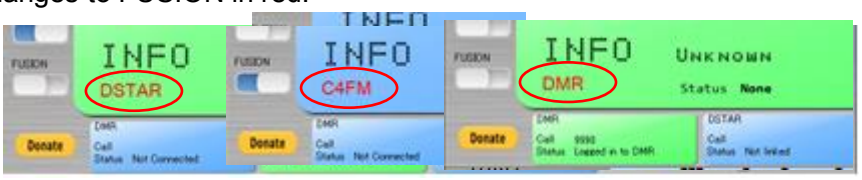
3 . Operation with DVmega

DVmega

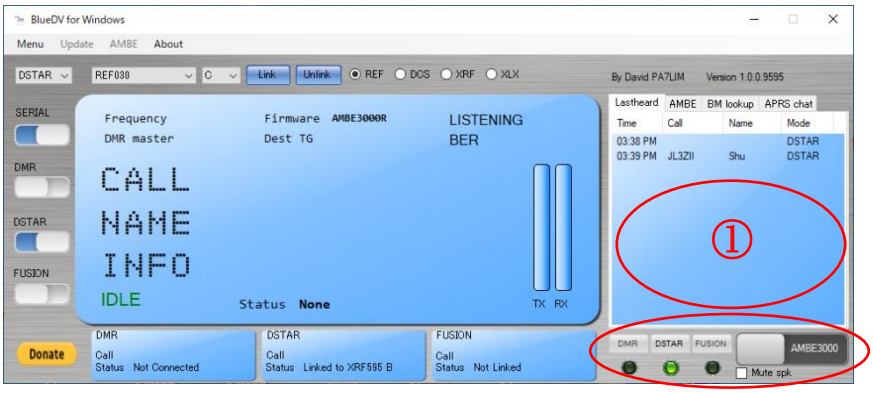
As of January 28, 2021

APPENDEX

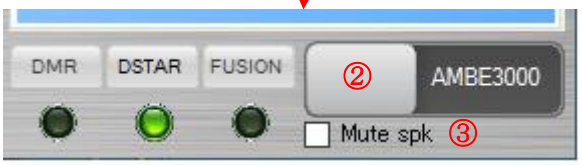
1 ． Items and functions displayed on the screen (my understanding)

Itme	Description
CALL	When receiving, the call sign of the other station, the rig used, etc. are displayed.
NAME	The name of the partner station is displayed when receiving.
INFO	Display the information of the partner station (QTH, DMR ID, etc.) when receiving.
Frequency	The frequency set on page 5 for DVmega is displayed.
DMR master	A DMR master other than the XLXDMR set on page 5 is displayed.
Dest TG	When operating BM or DMR +, it seems that the talk group you are using is displayed here, and when operating XLX DMR, the DMR ID is displayed. Dest stands for Destination.
Firmware	AMBE3000R, which is the product code (product description) of ThumbDV, is displayed. (When using DVmega, it is displayed as DVMEGA_NR3.07 etc.)
LISTENING	The display changes to TX when transmitting and RX when receiving regardless of mode(D-Star, DMR, or FUSION).
BER	The code error rate (bit error rate) seems to indicate the rate of data bit loss during DMR transmission.
Status	The status of its operation is displayed when the software is started. If None is displayed or nothing is displayed, it means that the operation is normal. If ThumbDV is not attached, "Can not open COM port" will be displayed.  Also, if PTT keying is enabled in the initial setting but the comp port number is not entered in the Serial port, "PTT: Serial port IO error" is displayed in Status.
IDLE	Indicates that it is in a standby state. When sending / receiving D-Star, the display changes to DSTAR in red, when using DMR, the display changes to DMR in red, and when using FUSION, the display changes to FUSION in red. 

The screen ① on the right of the figure below changes with four types of tags: Lastheard, AMBE, BM lookup, and APRS chat.



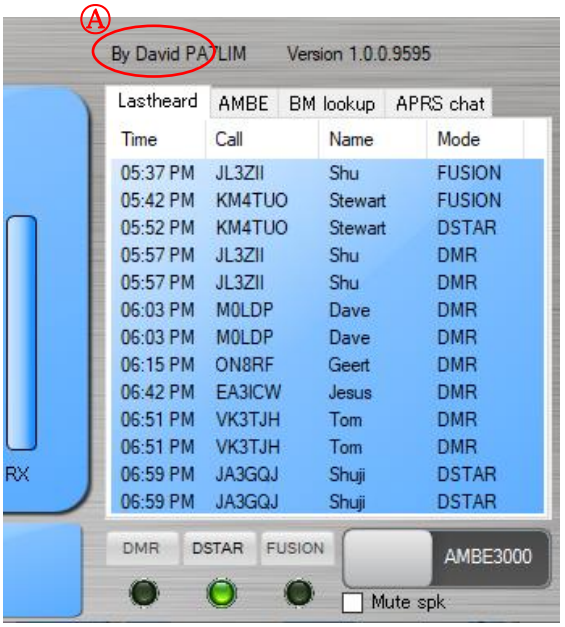
The three buttons at the bottom of screen ① switch between mode (DMR, DSTAR, and FUSION).



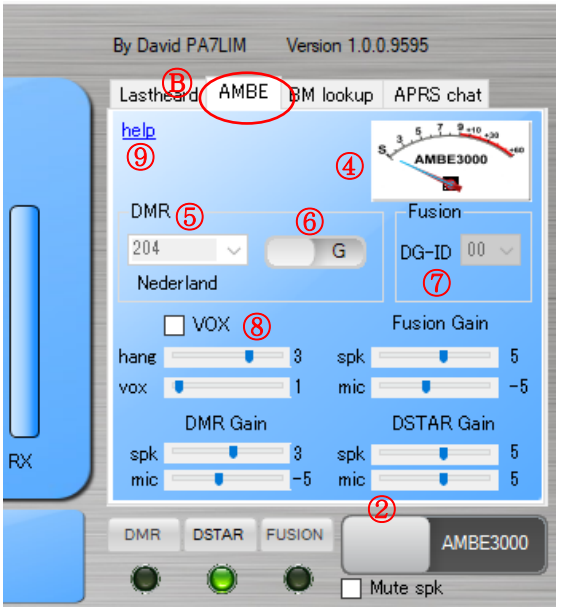
'②' is a PTT switch operated with the mouse or the space key on keyboard. If you put a check mark in Mute spk ③, the speaker sound will disappear.

Lastheard tag Ⓐ :

The communication time, call sign, name, and mode (D-Star, DMR, FUSION) are displayed on the Lastheard tag screen. The name seems to be the one registered when getting 7-digit ID of CCS7 . Clicking on the callsign will open the web page of QRZ.COM for that station. QRZ.COM is, needless to say, a world-famous web version of the callbook that requires registration.



AMBE tag Ⓑ :



The screen of this tag has a level indicator ④ corresponding to the S meter.
The number 204 in the DMR reflector number input field ⑤ in the middle is his TG (talk group) of DMR in the Netherlands selected by default. ⑥ on the right side is a switch button for group (G) and individual (P) (default is G).
VOX ⑧ is very convenient. Adjust 'hange' and 'vox' to determine the optimum operating conditions. In addition, there are speaker (skp) and microphone (mic) gain adjustment bars for each mode(DMR, Fusion, D-Star) .Find the optimum conditions together with the adjustment function of the sound card of your computer.
Click help⑨ of this tag to open the explanation web page.

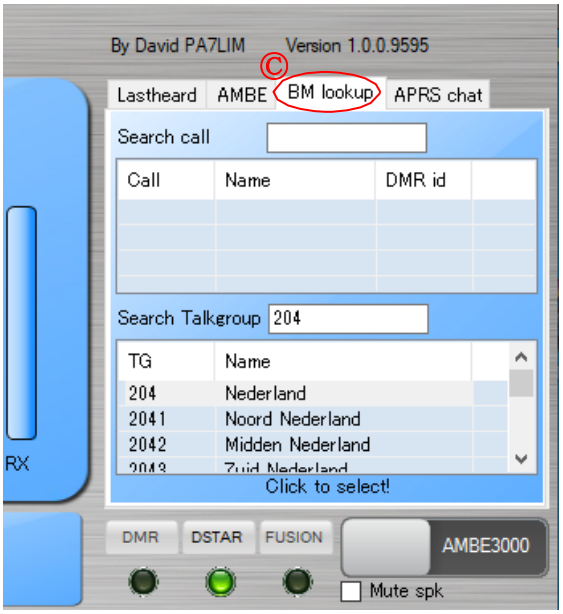
When the initial setting is BM, enter 9990 in the DMR reflector number input field ⑤ and click the PTT switch ② with the mouse or touch the space key on the keyboard to perform the echo test.

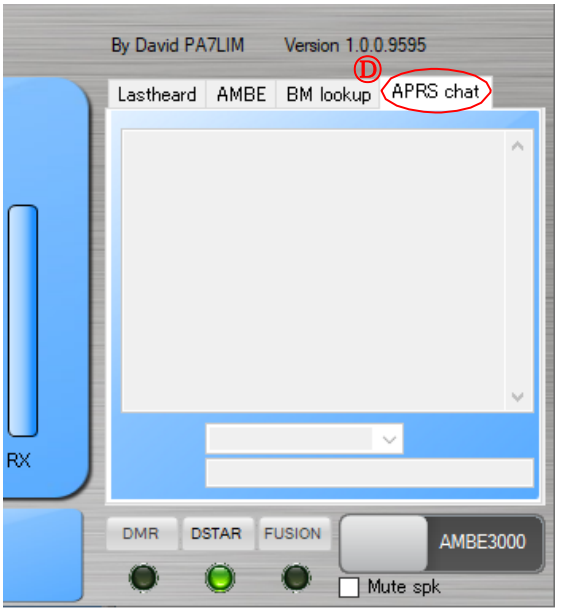
BM lookup tag © :

This screen is like a screen to search for the desired TG or DMR ID. If you enter the TG number in the "Search Talk group" input field, the name will be displayed at the top of the menu below it. If you click there, it will be reflected in ⑤ (page 10) of the AMBE tag. You can also scroll through the menu to find and click on the desired TG directly. Enter your call sign in "Search call" to find your DMR ID. A list of ID search results is displayed with just the call sign prefix.

APRS chat tag Ⓓ :

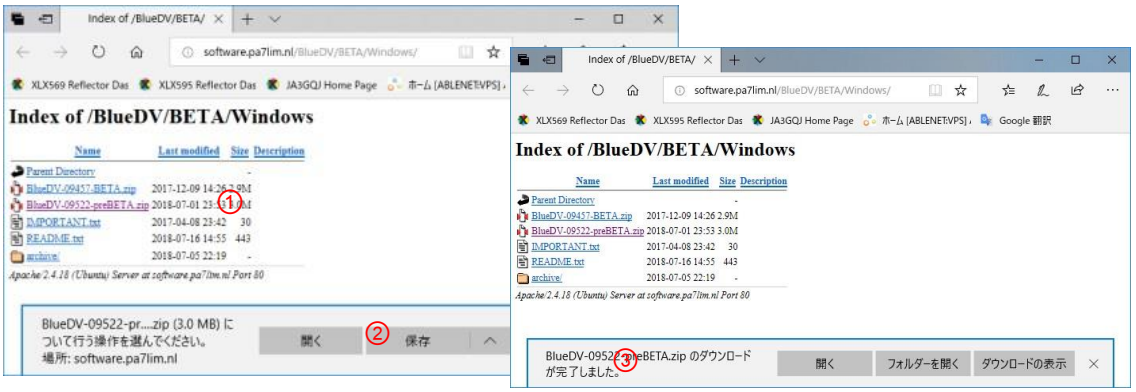
Usage unconfirmed



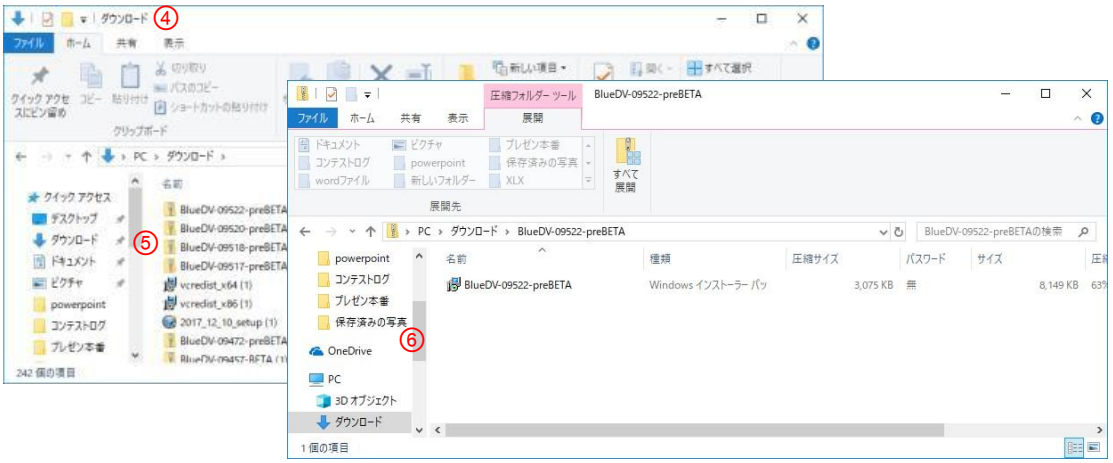


2 ．Download and install software

Open http://software.pa7lim.nl/BlueDV/BETA/Windows/ ⇒ Click on BlueDV-09522-BETA.zip① with the opened page ⇒ Click "Save"② displayed at the bottom of the page ⇒ Download completed③. The download destination is Windows10 default folder "Download"④



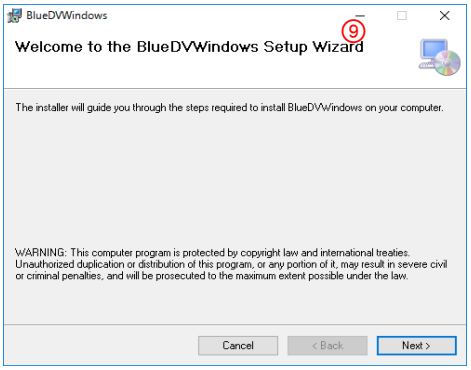
Unzip the BlueDV-9595-TEST.zip⑤ of the folder "Download"④ with the decompression software of Lhasa etc. to generate the file BlueDV-9595-TEST (Windows Installer Package)⑥.

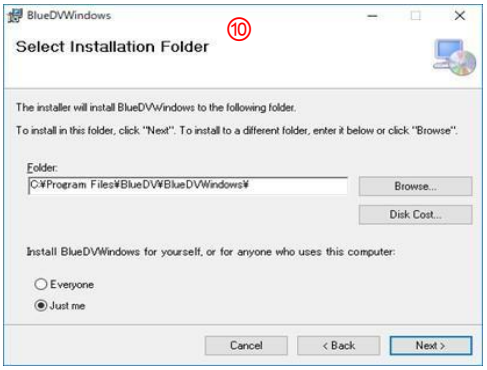


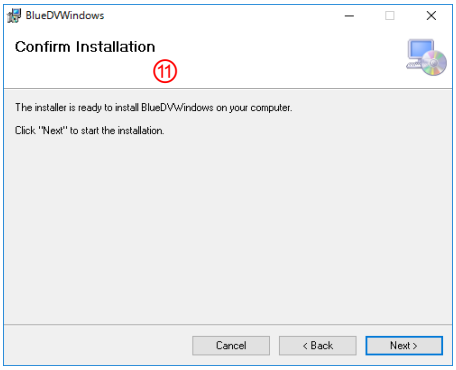
In my case, the file⑥ was created in the folder BlueDV-9595-TEST on the desktop, so clicking on that file displayed the following screen.
Click "Detailed information", then open the screen on the right and I click the "Execute" button

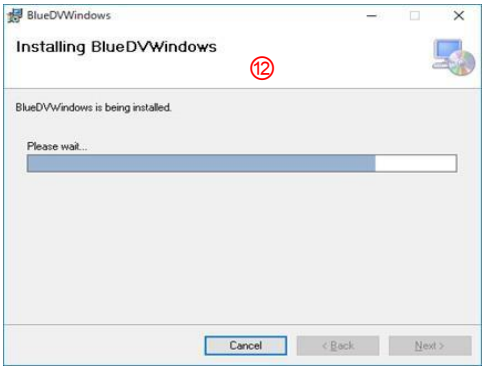
Then "User Account Control"⑦ pops up and installation starts with clicking "Yes"⑧.

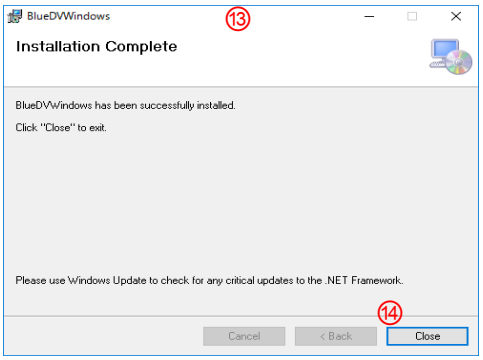
Next is ”Welcome to the BlueDV Windows setup Wizard”⑨ .→ “Select installation Folder”⑩ →“Confirm installation” ⑪ → As the process progresses, the screen pops up. After clicking "Next" on each screen, a progress bar is displayed in "Installing BlueDV Windows"⑫ .→ "Installation Complete"⑬ pops up → Click "Close"⑭ button. → Icon⑮ is created on the desktop and installation is completed.









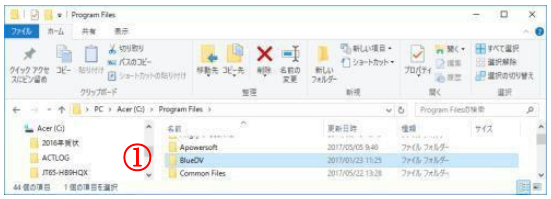


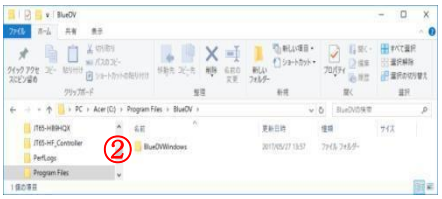
⑮

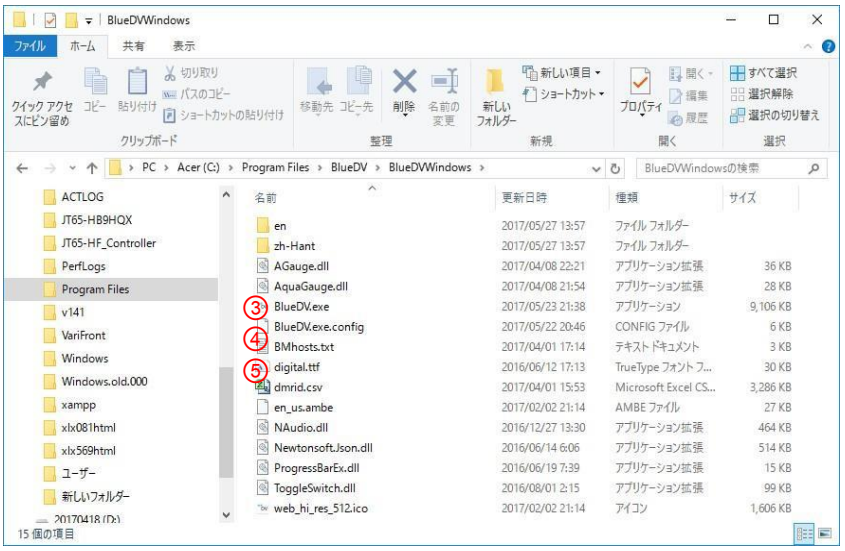
2．Confirm software installation destination

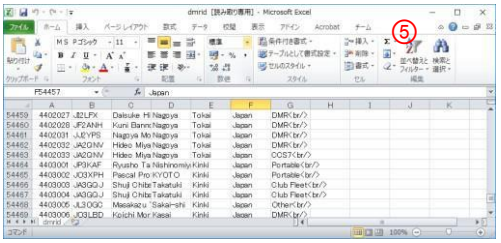
There is a folder BlueDV① in the Program Files of the C drive, and furthermore a folder BlueDVWindows② is generated. BlueDVWindows executable file BlueDV.exe③ is in it. BMhosts.txt④ is a list of Brandmeister. Dmrid.csv⑤ is a 7 digit ID list of CCS 7 and JA is allocated from 4400000.

Since the Update DSTAR hosts can't be found, you can't add and change the reflector.



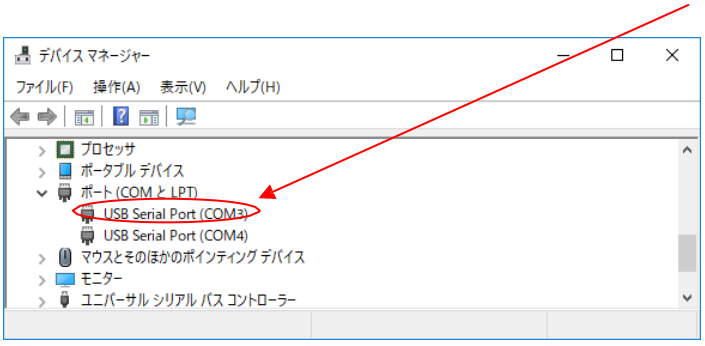






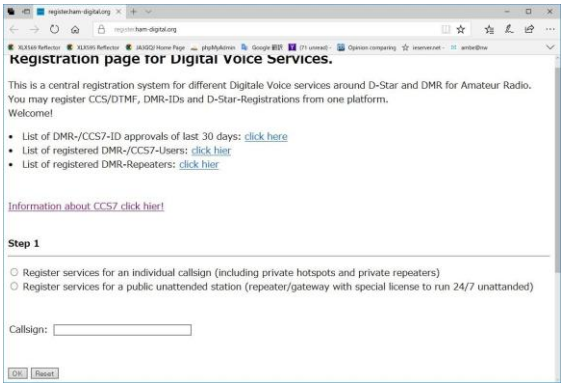
- **Check COM port**

Install ThumbDV ⇒ Open "Device Manager" (see APPENDIX at the end of the book for how to open) and check if the COM port is recognized. In this example COM3 recognizes ThumbDV.



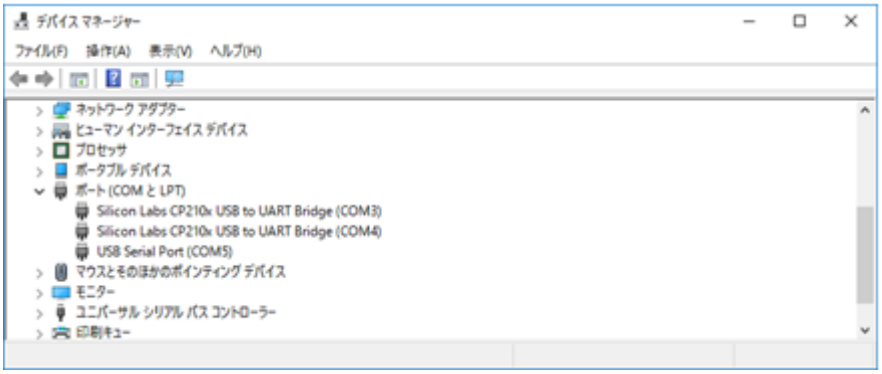
CCS7

"CCS" is an abbreviation for "Call sign Communication System". It seems to have been developed around 2010 as the best alternative to the G2 call sign routine system. However, this system was first set up in the German-speaking world, where the DCS reflector system grew rapidly and became a major system. The CCS seems to use a DCS reflector mechanism to interconnect repeaters for call sign routing. Initially, it was called CCS-ID and used a 4-digit number code, but at the end of 2014, it became impossible to handle many users, so a 7-digit number was adopted around 2015. It seems that it came to be called CCS7-ID. https://register.ham-digital.org/



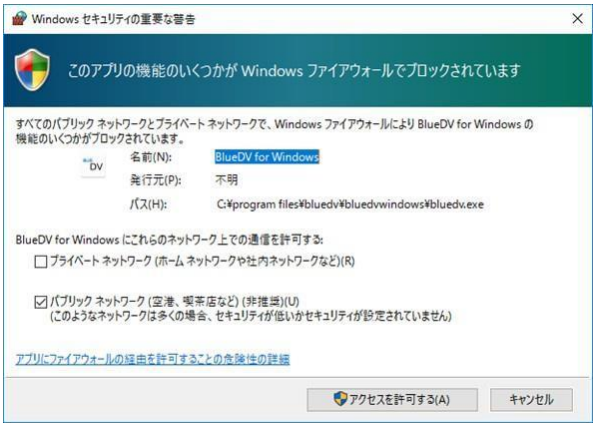
How to display Device Manager

Right-click the window icon in the lower left corner of the desktop screen ① ⇒ Select "Device Manager" ② in the pop-up image ⇒ Open Device Manager ③ ⇒ Click "Ports (COM and LPT)" ④.



When starting the software for the first time

When "Important Windows Security Warning" is displayed, click the "Allow Access (A)" button.



that's all