

# Image exchange experience using WSJT-X with Peanut system

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Image Controller Easy has been upgraded, and if WSJT-X is used instead of JTDX, it would be possible to exchange images on the Internet using a system called peanut instead of wireless with FT8 or MSK144. WSJT-X has nine protocols including slow mode and fast mode, FT8 is slow mode and MSK144 is fast mode.

It is notable that Peanut's PTT can be turned ON / OFF by Image Controller Easynew of new version 09b / Feb / 2021.

First, I downloaded the following four types of software required for image exchange.

1. Peanut  
<http://www.pa7lim.nl/peanut/>  
This is software for communicating over the Internet and was developed by David PA7LIM of the Netherlands.
2. Image Controller Easy  
<http://jq1hdr.world.coocan.jp/Instruction2/index.html>  
This is software developed by Kazu JQ HDR. Decode characters with WSJT-X (FT8 or MSK144 protocol). As a result, it informs the other party of the existence of your own image (still image or video) or music file, and mediates the download of the image (still image or video) or music file prepared by the other party. You can also upload the received image to Digi-Sites.
3. WSJT-X  
<https://www.physics.princeton.edu/pulsar/K1JT/wsjsx.html>  
Software that processes FT8 or MSK144 signals. I downloaded the Windows 10 32-bit, 64-bit shared (Feb 09B 2021) version.
4. Digi-Sites  
[https://w3wvg.com/mgxroot/page\\_10727.html](https://w3wvg.com/mgxroot/page_10727.html)  
This is a required item for using Image Controller Easy. Upload the received image here and publish it.

I understand that the relationship (combination) of these four types of software works on one personal computer, and the division of roles is as follows.

## Peanut

Transfer FT8 or MSK144 signals for exchanging images by WSJT-X over the Internet. I think of it as a pseudo-radio on the internet.

## WSJT-X

Pass the FT8 or WSJT-X signal for image exchange received by Peanut to the "Image Controller Easy" via the sound card, or pass the FT8 or WSJT-X signal for image exchange to Peanut by a command from the Image Controller Easy.

## Image Controller Easy

- When receiving : Decodes the image exchange FT8 or MSK144 signal that has passed through WSJT-X. Find the existence of the image created by the other party, download it, display it on the computer screen, and upload it to Digi-Site.
- When sending : Prepare an image that you want to send, and pass the FT8 or MSK144 signal to Peanut via JWSJT-X.
- Differences from radio : When using WSJT-X wirelessly, the function of WSJT-X operates the transmission / reception PTT of the radio.  
In the case of the Internet, "Image Controller Easy" controls WSJT-X's

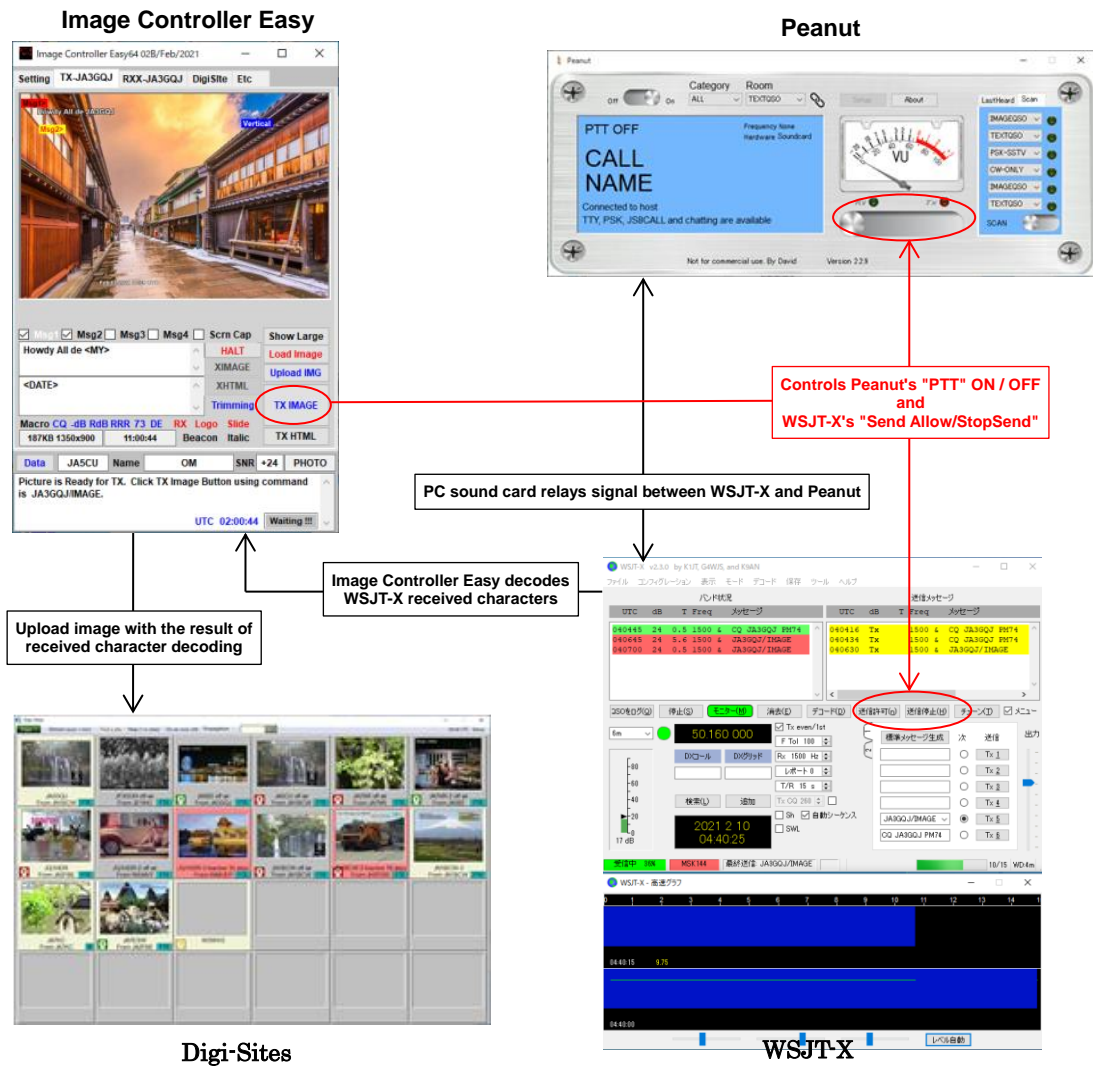
"send permission" and "send stop" and Peanut's PTT ON / OFF.

**Digi-Sites**

Save the image to be sent prepared by "Image Controller Easy" here.  
 Received image is uploaded here by Image Controller Easy.

As mentioned above, don't you think that the signal of transmission and reception of FT8 or MSK144 is in the form that Peanut and WSJT-X share the sound card of the personal computer? It is necessary to confirm that the microphone and speakers of the sound card were enabled in the AUDIO settings of Peanut and WSJT-X. I think this point is a big difference from HF, VHF, and UHF communications.

Schematic diagram I understand about image exchange



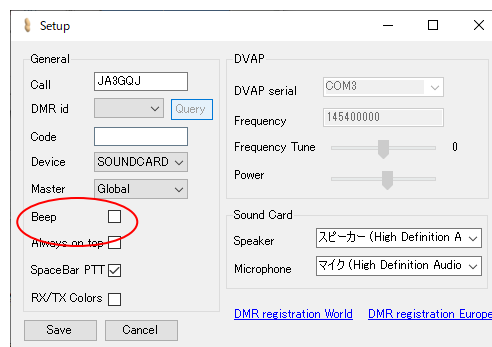
**What I noticed**

The transmission / reception signal of the FT8 can be transmitted / received by picking up the speaker sound with a microphone, but the signal processing of the MSK144 required an external signal changeover switch like the one at the end of the book.

## Setting each software

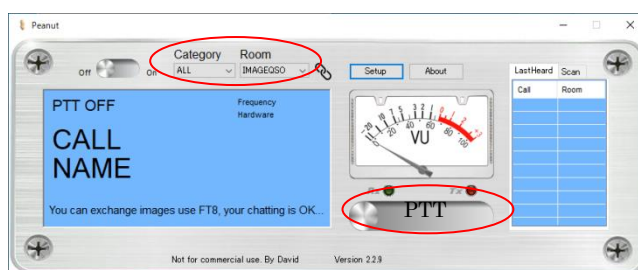
### 1. Peanut

I have set as shown left figure.  
 In "Code", enter the number you acquired.  
 Image exchange communication is possible without "DMR id". "DVAP" is an adapter for personal computer and is not used here because it is made for D-Star.  
 Select SOUND CARD for Device and Global for Master.



Be sure to put a check mark on SpaceBar PTT because you can turn PTT ON / OFF from Image Controller Easy.

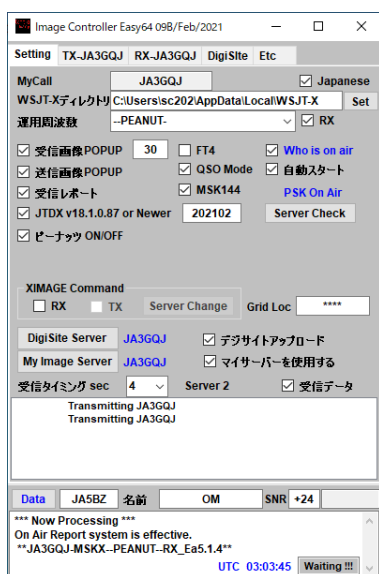
After setting Peanut and starting it, select "ALL" in Category and select "IMAGEQSO" or "TEXTQSO" for Room. You can hear the signal sound of FT8 and MSK144 for image exchange.



### 2. Image Controller Easy

The figure below is an example of setting by referring to the required items from the list on the left of <http://jq1hdr.world.coocan.jp/Intruction2/index.html>. The left is the "Setting tag" and the right is the TX-JA3GQJ tag.

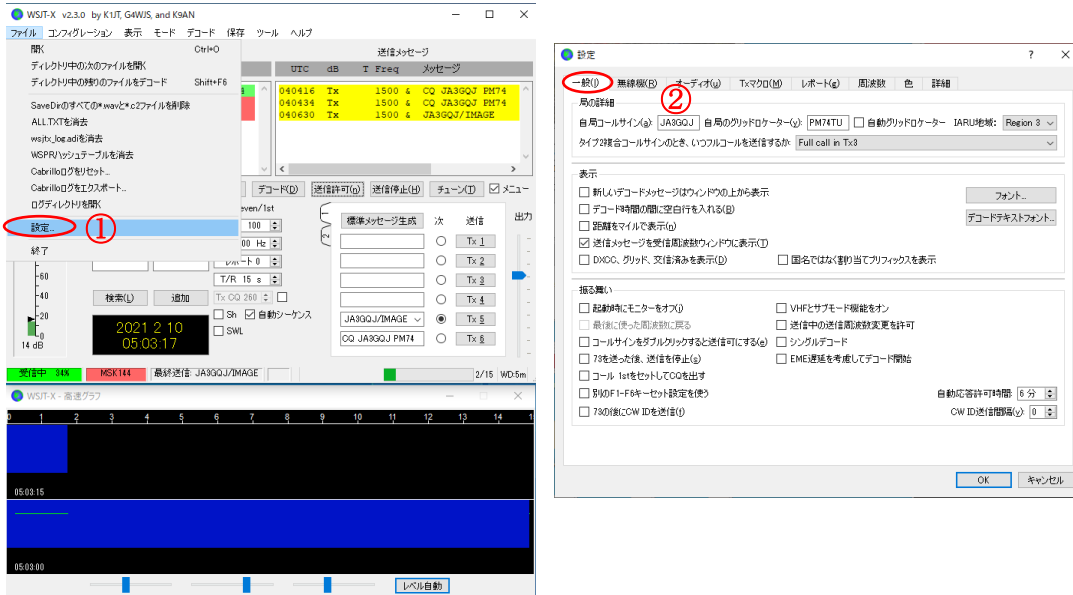
When you click the image transmission of the TX-JA3GQJ tag, Peanut's "PTT" and WSJT-X's "Transmission permission" are turned on and transmission starts. After that, the WSJT-X function automatically turns off Peanut's "PTT".



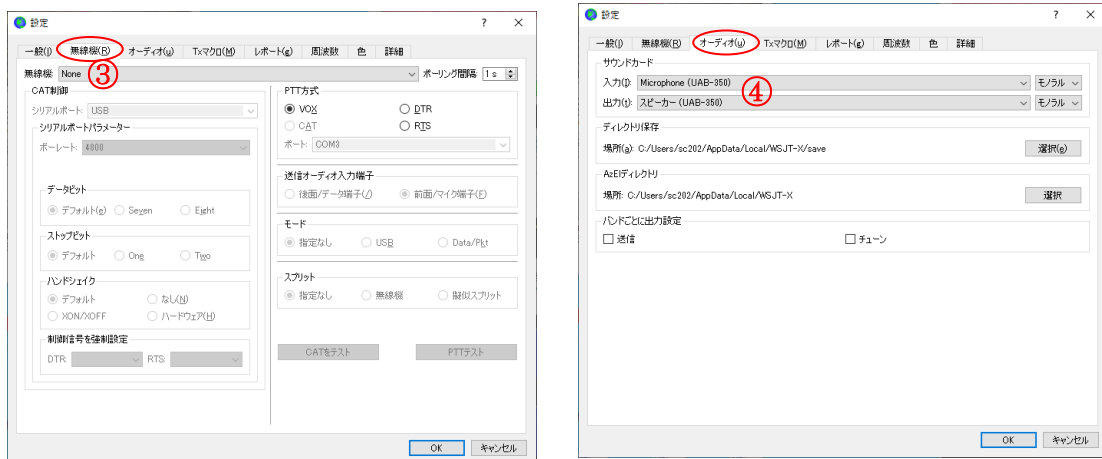
### 3. WSJT-X

The detailed handling when using WSJT-X on the air can be checked on the Internet, so here is the setting for the combination with Peanut.

- ① On the screen where WSJT-X started, open the "File" tag and select "Settings".
- ② I added my callsign to "My call" in the "General" tag on the "Setting" screen. The rest are left at their defaults. It's up to you to put the data in "My Gride".

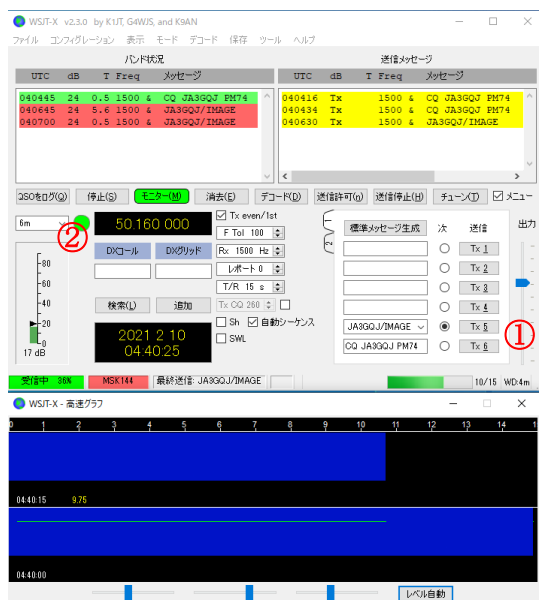


- ③ Next, since the radio is not used, set "Radio" in the "Radio" tag to "None".
- ④ Finally, check that the microphone and speaker of the sound card running on your computer are displayed correctly in "Input" and "Output" on the "Audio" tag, and click the "OK" button to complete the setting.

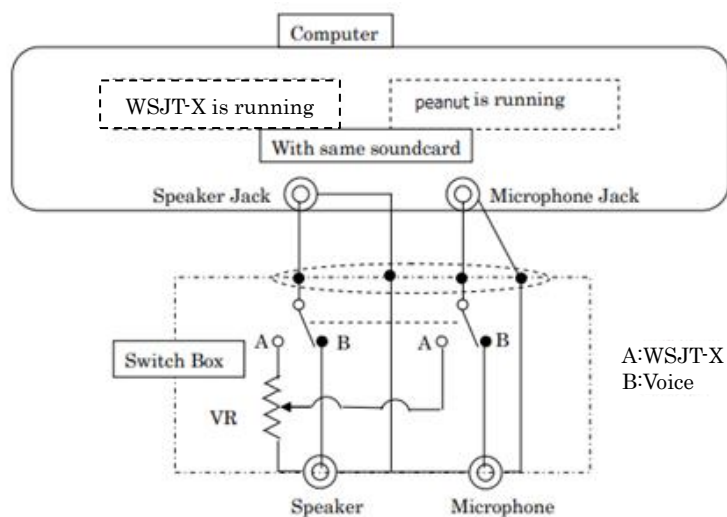


### Important matters (figure below)

- ① "Tx5" or "Tx6" on the dashboard should be set to "Callsign / IMAGE".
- ② Since MSK144 is not used in the HF band, it may not work well with Peanut when the frequency used is in the HF band, so select and set the frequency to 50Mhz or higher.



### External signal changeover switch



#### Note

- 1. This is my way
- 2. There are many other way.
- 3. The VR may not be necessary.

As of February 10, 2021