

Hints about Multipsk

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I) [Generalities](#)

For about Multipsk you have an old presentation (2006), which gives the basic possibilities:
http://f6cte.free.fr/Multipsk_presentation.pdf (English)
http://f6cte.free.fr/Multipsk_presentationneu.pdf (German)
http://f6cte.free.fr/Presentacion_de_Multipsk_definitivo.pdf (Spanish)
http://f6cte.free.fr/Multipsk4_pl.pdf (Polish)

You have a lot of documents and videos available here : http://f6cte.free.fr/index_anglais.htm
Once on this page, press <Control><F> and type the topic that interests you.

To make work the most recent versions of Multipsk +OMMap, take into account that the RAM memory must be equal as a minimum to 2 Go (3 Go being preferable) with a minimum graphic format of 800x600 (important criteria for tablets PC under Windows).

You can begin by starting each program of the Multipsk suite (Multipsk, Clock and OMMap) and see what it can do.

To start with OMMap and Multipsk, the best is to decode the FT8 mode, as there is traffic at any time. For example, start by launching OMMap before Multipsk. Then tune your receiver on 7074 or 14074 KHz in USB and leave Multipsk decode the FT8 frames. The Ham positions will appear on OMMap.

Multipsk decodes many amateur and professional modes. Among these modes many can send or receive positions.

Clock decodes many radio time transmitters plus the GPS time and the Internet time.

OMMap displays the positions received by Multipsk on a map showing any part of the world. OMMap must be started before Multipsk.

All these programs work with default parameters supposed the most adequate for the author. However many of these parameters can be modified according to the needs of each one.

II) General hints

1) About how modes look like

At the address below, you have the sound and visual identification of many modes.
http://f1ult.free.fr/DIGIMODES/MULTIPSK/digimodesF6CTE_en.htm by Pascal (F1ULT)

Here are other WEB addresses for information about part of the Multipsk modes :

- https://wiki.radioreference.com/index.php/HF_and_LF_Modes_used_by_MultiPSK by Mike (KA3JJZ)
- https://www.cryptomuseum.com/ref/files/RS_RefDoc_TransmissionMethods.pdf

On the author's website (http://f6cte.free.fr/index_anglais.htm), you'll find a number of documents and presentations on using digital modes. On YouTube, you'll also find many videos made by amateur radio operators (HAMs) or shortwave listeners (SWLs). So, on Google (or another search engine), type "YouTube Multipsk" and specify the digital mode you're looking for.

It also exists a collection of sound files in different modes, to play. See here:
http://f6cte.free.fr/About_the_collection_of_Multipsk_sound_files.pdf

Important: the **RS ID** permits to identify a HAM mode and the transmission central frequency. See http://f6cte.free.fr/The_RS_ID_easy_with_Multipsk.pdf

Click on "**ID**" for RS ID configuration and "**RX ID**" to set in ON.

See also this article about the CALL ID, which can be used to signal oneself on the air: http://f6cte.free.fr/The_Call_ID_and_Prop_ID_easy_with_Multipsk.pdf

2) Calibration of the sound card

Note: this function must be only used if you receive the sound from the receiver (audio output) by the PC sound-card, which way is nowadays rare. Indeed, if you use a SdR or a modern receiver or transceiver directly interfaced to the PC and so to Multipsk via a sole USB cable, you can ignore this function. If you use Multipsk to decode sound files, you can also ignore this function.

To calibrate the sound-card: from the RXTX screen click on the "**Adjustments**" menu item, then select the "**Determination of the RX/TX sound-card sampling frequencies**" option and push on the "**Determination of the 48 KHz RX sampling frequency (test on 3 minutes)**" button. At the end of the test, click on "**Return**", except if you do transmission, in which case you will have to start "**Determination of the offset between TX/RX...**".

Note: if the RX sampling frequency is close to 48000 Hz (let's say between 47950 and 48050 Hz), it is preferable to manually set the RX frequency to 48000 Hz.

3) Sound level

About the sound level ("**Level**" indication in % at the top of the screen): an AF level superior or equal to 10 % is correct. About 50 % is ideal (but not critical). However, an overloaded signal (let's say >80%) can pose a decoding problem. Only in the case of a very low AF level, select "16 bits" in the "**Determination of the RX/TX sound-card sampling frequencies**" option ("**Adjustments**" menu item).

4) About the help in Multipsk

- To bring up the text manual (contextual sensitive one), click on the right button of the mouse, with the cursor over the mode button "**BPSK31**", for example, or any other button. In the example, only the BPSK31 help will be displayed.

- Also use the button hints. For this, wait a fraction of second over a button.

- The Multipsk/Clock/OMMap manuals can be downloaded in the form of PDF files here: http://f6cte.free.fr/Help_PDF.ZIP

5) About the control of standard (non-SdR) receivers and transceivers

To control your equipment, you can use Commander (from the DXLab suite).

Once you successfully control your equipment with Commander, it is enough to start it before Multipsk. Commander will be automatically interfaced with Multipsk and will be as "transparent". The control of your equipment (RX or XCVR) will be mainly done:

- either on the "**Transceiver**" panel, associated to the "**Transceiver**" button (at the top of the screen),
- or on the "**QRGs**" panel, associated to the "**QRGs**" button (near the red "**MODE**" button).

For more details about the Commander installation and configuration, see the specific hint subsequently.

6) About the SDR receivers control

6.1 Direct connection to Multipsk

Multipsk can directly interface, through the « **I/Q Interfaces for SdR transceivers** » (« Configuration » screen), different SDR receivers: Funcube, SDRPlay or RTL/SDR (TNT) keys except the "V4" one which is not standard. Then Multipsk will directly demodulate the I/Q signal.

For details, refer to the Multipsk handbook, chapter « **Access to the configuration screen** ».

One also refer, for the SDRPlay receivers to the guide "Connect the SDRplay RSPs via TCP IP to Multipsk" by Mike (KA3JJZ):

https://wiki.radioreference.com/index.php/Connect_the_SDRPlay_RSPs_via_TCP_IP_to_Multipsk

6.2 Connection to Multipsk via another program

It can also be used a reception and demodulation program, such as SDRUno or SDR# for example. The audio signal will be transmitted via a VAC (virtual sound card).

For example, see the videos by Mike:

- SDRuno basics, MultiPSK <https://www.youtube.com/watch?v=tnqfJhsvGFA>
- SDRuno basics, virtual audio cable <https://www.youtube.com/watch?v=ZF86cK5vukY>

Where to get the "Virtual Audio Cable" (VAC): <https://vac.muzychenko.net/en/>

It is even better if the reception program transmits an I/Q signal, rather than an audio signal, towards Multipsk. See for example :

Guide "Using I-Q signals between SDRUno and MultiPSK" by Fred
[Using I-Q signals between SDRUno and MultiPSK.pdf](#)

Note that thanks to Commander (see further) and to SDRConsole, it is possible to control the

Perseus receiver and many more receivers. For this, see the following document by Andrea (IN3IWZ): [Controlling Radios with MultiPSK Commander SDRConsole](#) (V.2 in English) or [Controlando Radios con MultiPSK Commander SDRConsole.pdf](#) (in Spanish).

It is also possible to control the Airspy HF receiver. See the following document by Paolo (IZ1MLL): [DXLab Commander-Multipsk-SDRsharp.pdf](#) (V.1.0 in English)

7) About the connection of a WebSDR on Internet to Multipsk

Refer to the document :

http://f6cte.free.fr/Connection_of_a_WebSDR_receiver_to_Multipsk.pdf

8) About frequencies

Click on the "QRGs" button to get all the HF used frequencies, for the chosen mode. Click also on "MODE" then "Frequencies used", or directly click on the "Frequencies" menu item (on the top bar), for more information about frequencies.

Moreover, in the Multipsk directory, you will find the file:

"List_of_growing_frequencies_for_amateur_and_professional_modes_decoded_by_Multipsk.pdf".

Here are two WEB addresses for about the Fax mode:

- WX Fax sked from G7TMG (Sholto): [WX Fax Schedule.doc](#)
- "Worldwide marine facsimile broadcast schedules" document: <https://www.weather.gov/media/marine/rfax.pdf> by Mike (KA3JJZ)

9) For about CW, RTTY configuration

Click on the "MODE" button for the different options (bandwidth, speed...) of the CW and RTTY (45, 50, 75, 100, 110, 150 and 200) modes.

III) Specific hints

1) Hint to interface Multipsk to your receiver or transceiver using Commander (from the DXLab suite)

The most simple to interface your equipment with Multipsk is to use Commander (even if there are other possibilities). For this:

- First connect the receiver or the transceiver to your PC with the "CAT system" serial or USB cable.
- You first download and install the basic 5.87 Commander version, then update it, i.e. by downloading and installing a recent version of Commander.
- Once done, start the recent Commander version, click on the "Config" button and select the "General" tab. In the "Radio" panel select the receiver or the transceiver in the scrolling menu.

Note that for Icom equipment, you must take into account the CI-V address of the transceiver, i.e. 2 hexadecimal figures as for example "4E", shown by the transceiver as a parameter. This CI-V address must be typed in the "CI-V address" field of the "General" tab of Commander, this field being located in front of the "Model" field.

- Then select the “Ports” tab and change or confirm the port number used by the receiver or the transceiver. That’s all.
If you don’t know which COM port is used by the equipment, you can use Multipsk (as a tool) to determine the COM ports used by Windows, this in the “Serial port” menu. First note the serial ports used before connecting the “CAT system” serial or USB cable to the equipment and then note them after the connection of the cable (and a Multipsk restart). The difference is the searched COM port.

Important: Commander (and also OMMap) must be started before Multipsk. You have nothing to do on Multipsk as the DDE link between Multipsk and Commander (or OMMap) will be automatically detected and this activation shown on the Multipsk RX/TX window.

Then to control your receiver or transceiver through Multipsk, click on the “**Transceiver**” button located on the left top of the RX/TX window. The “Transceiver” window will open and give you the possibility to manually type a frequency and, possibly, to store it.

2) Hint about the way to still hear the audio sound of your receiver, if it is not possible, at the same time, to connect the audio output from your receiver to your PC and to hear the audio sound from your receiver

This case appears sometimes.

In this case one occurrence of Multipsk must be started first to return the audio sound and then the other occurrence will be started as usual.

Configuration of the first occurrence of Multipsk:

- The “**Sound card (Input)**” menu item must be configured to select the input associated to your receiver.
- The “**Auxiliary Sound card (to speaker)**” menu item must be configured to select the speaker to which the audio sound must be returned.
- Click the “**RX/TX screen**” button.
- Click the “**Filters**” button (at the bottom of the Mode panel),
- According to your needs, you can add a filter (or not), a band-pass or a noise limiter (general or CW) and you can reduce the latency time down to 0.1 s if your sound card is fast enough.
- Once all OK, you must adjust the sound level of the speaker (click right over the speaker icon and select the “Sound” option).
- Finally, put this Multipsk occurrence in icon, as there is no interest to see it.