

## Game: radio listening - digital modes

Let's learn to know and decode the strangest and most complex messages that populate the radio waves!

**Learning targets:** Make Scouts/Guides discover ham radio advanced telecommunication techniques that they could use - Make Scouts/Guides discover the exploration of the radio spectrum by means of online receivers.

### Material:

Hardware:

- PC
- Internet connection.

Software:

- browser (pref. Chrome)
- FLDIGI (<https://sourceforge.net/projects/fldigi/> )
- virtual cable (<https://vb-audio.com/Cable/> )

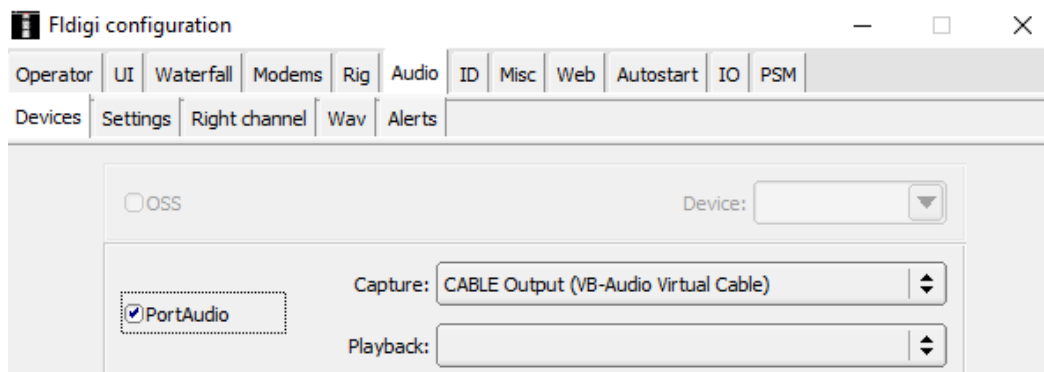
**Time and preferred place:** 1h. Home activity.

**Description:** A radio amateur transmits some instructions via radio using digital modes: among them, RTTY, BPSK31, Hellschreiber, etc.. Scouts/Guides, connected from home in videoconference, must connect to an online receiver (lists of receivers are available at <http://websdr.org/> and <http://kiwisdr.com/>), tune to the radio operator frequency, decode the digital message and execute the received instructions in videoconference: wear clothes of a specific color, show a specific object, etc.

For specific instructions on how to listen to online receivers, please check the separate activity on the listening of broadcasting stations.

To decode the audio signal coming out of the loudspeakers, first it must be turned from an audio output to an audio input. This is done by Virtual Cable. In your PC settings, among input and output audio devices, you must activate the virtual devices "Cable Input" and "Cable Output". Beware that this will mute your PC, up to the moment you restore the previous audio settings.

Now it's the turn of opening FLDIGI: it's the software that will decode the audio signal. First, in its settings, you must select the correct audio input device, that is Cable Output.



Now you have to select the correct digital mode from the available list and click, in the downwards waterfall, the track of the digital mode.

More information on recognizing and using digital modes can be found in the **JOTA-JOTI Ham Radio Handbook** and on this website:

[https://www.sigidwiki.com/wiki/Category:Amateur\\_Radio](https://www.sigidwiki.com/wiki/Category:Amateur_Radio)

As a subsequent step, Scouts/Guides could be encouraged to exchange secret messages using FLDIGI: the software is useful for both decoding and encoding digital modes. In this case, remember to set your PC loudspeakers as a playback device in the FLDIGI configuration window.

