How do I? An occasional series

This week: Olivia Digital Mode Updated: December 03, 2023

By: Frank Mellott KB3PQT

Olivia is a keyboard to keyboard sound card mode. It was created in 2004 by Pawel Jalocha, SP9VRC. It is fairly robust and can provide 100% copy of signals that are 10dB below the noise floor.

Olivia sends ASCII characters in blocks of five, using two seconds of transmit time per block. It has some forward error correction (FEC) capabilities.

Olivia was given a couple pages in Steve Ford WB8IMY's *ARRL HF Digital Handbook, 4th Edition*, published in 2007. This book is out of print. A replacement title, *Get On the Air With HF Digital,* was published by the same author and now is in its Third Edition (2022). In the current edition **Olivia** has been given much more space. The author says Olivia is about as good for weak signal work as JT65 and has the ability to allow the users to carry on a conversation, unlike JT65.

The **Olivia** signal is closely related to **MSFK32** and sounds rather musical. Your best way to find an Olivia signal is to have RSID turned on so that FLDIGI can find it and identify it for you. Both RSID and FLDIGI are discussed elsewhere in this ***How Do I…*** series.

There are several popular variations of **Olivia**: 250/8 and 1000/16 (bandwidth/# of tones) seem to have become the two most common. There is an **Olivia** group on Groups.io and it seems to be the primary source for frequencies, operating, etc. https://groups.io/g/Olivia

OLIVIA DIGITAL MODE HF *SUGGESTED* CALLING FREQUENCIES

The following are ONLY suggestions to aid in finding other Olivia signals

This listing shows **CENTER**, then **DIAL**, then the **number of tones** and **bandwidth**

CENTER	DIAL	# of Tones/Bandwidth
1.8390 MHz	1.8375 MHz	8/250 (ITU Region 1, etc.; Primary International)
1.8270 MHz	1.8255 MHz	8/250 (ITU Region 2; Secondary)
3.5830 MHz	3.5815 MHz	8/250
7.0400 MHz	7.0385 MHz	8/250 (ITU Region 2, etc., Primary International)
7.0730 MHz	7.0715 MHz	8/250 (Secondary)
10.1430 MHz	10.1415 MHz	8/250
10.1440 MHz	10.1425 MHz	16/1000 (Potential - be mindful of other stations)
14.0730 MHz	14.0715 MHz	8/250
14.1075 MHz	14.1060 MHz	32/1000
18.0990 MHz	18.0975 MHz	8/250
21.0730 MHz	21.0715 MHz	8/250
24.9230 MHz	24.9215 MHz	8/250
28.1230 MHz	28.1215 MHz	8/250

As Of July 7, 2023
Suggested "Starting Frequencies"

NOTE: **CENTER** is where you place *the center of the software's cursor* on the **waterfall**, and then *click to select* that *center frequency on the waterfall*. If you use the **DIAL** frequency from this list, then place your waterfall cursor center at the **1500-Hz offset** up the waterfall (to the right of the left margin of the waterfall), and *click to select* that **center frequency on the waterfall**. This results in the software and transceiver being correctly tuned for the listed, *suggested calling* ***CENTER*** *frequency*.

Frequencies from Groups.io/Olivia home page.

These are in flux, so check for updates on the website.

Olivia is a fun MFSK HF digital mode.

Finding other stations who are using **Olivia** can difficult and requires patience.

You may wish to listen to a sample audio recording of an Olivia signal. Visit http://www.arrl.org/hf-digital. Scoll down the page… all the way to the bottom… where you will see LISTEN TO OLIVIA. Get out your magnifying glass and find the audio link on the left side of this section. Click and listen. Now you will know an Olivia signal when you hear one. You are on your way to having an Olivia Digital Mode QSO.

To start, open up FLDIGI and select your frequency. Even though I use FLRIG to connect my radio to FLDIGI, I find it easier to rotate the tuning knob than to use the frequency indicator in FLDIGI. But that's just me. If you have macros preset for another protocol, such as **PSK31**, you can leave them alone. If not, you may want to set up Macros to call CQ, answer a CQ, etc..

If you do not immediately see **Olivia** activity, you may want to generate some your own. Relax!!!! Calling CQ is not difficult. But **Olivia** likes long CQ's. My macro is unchanged from my **PSK31** macro:

CQ CQ CQ DE KB3PQT KB3PQT KB3PQT
CQ CQ CQ DE KB3PQT KB3PQT KB3PQT
CQ CQ CQ DE KB3PQT KB3PQT KB3PQT

I have my macro set to automatically start to transmit when I click the CQ Macro and switch to receive when done. I do this by adding [TX] and [RX]

[TX]
CQ CQ CQ DE KB3PQT KB3PQT KB3PQT
CQ CQ CQ DE KB3PQT KB3PQT KB3PQT
CQ CQ CQ DE KB3PQT KB3PQT KB3PQT
[RX]

Wait at least two minutes before sending CQ again. Olivia is not yet a super popular mode. I was surprised I only had to send my CQ five times before someone answered from Colorado today.

Olivia likes power. For **PSK31** 30 watts is the standard, Beyond 30 and you risk splattering. I normally have my rig set at 40 watts, figuring that setting pushes 25-30 watts up to the antenna. My contact in Colorado gave me a 55 signal report on the first transmission so I bumped my power level up to 50 watts and he gave me a 56. The users group says 100 watts is OK, but many radios cannot push out 100 watts forever, so you need to know what your rig can handle. **Olivia** has a much broader signal than **PSK31** and I felt like transmitting above 50 watts was splattering. I don't know for sure, but I was

much happier staying below 50 watts.

One of the complaints about **PSK31** is that it was too macro driven. Push a button to call CQ. Push a button to answer one. Push a button to tell the other party about your weather and radio equipment, then send a 73 macro and move on. For many it seems **CW** and **RTTY** were far more "conversational". **Olivia** is over 15 years old. Since it was introduced, we have seen the advent of the JT and FT modes: **JT9**, **JT65**, **FT8, FT4**, etc. These are billed as weak signal modes. **JT65** is more robust than **Olivia.** All of these modes use macros and other automation. **FT8**, for example, is nearly a one click operation. Click on the station to which you want to reply and the software does the rest. Compared to **FT8**, **Olivia** is a brilliant conversationalist. Due to the slow decode speeds, you can be manually typing your reply in the text box so you will be ready to click TX as soon as the other party is done sending. **Olivia** may be the next big thing as the solar cycle improves. **PSK31** has been fairly popular for most of the past 12-24 years. **Olivia** can do just about anything **PSK31** can do, at higher power levels. Higher power can push the signal further with more readable copy.

In my first Olivia QSO, I used the macro to send CQ. Then I acknowledged the reply with the answer macro (not technically correct, but it worked). Next I free-formed the rest of the exchange (3 messages), then used the KN macro to sign off. The more you get on the air and use FLDIGI, the easier this becomes.

For now, **FT8** is by far the most popular sound card mode. **PSK31** might be second and **Olivia** is making efforts to become the third. I looked at the Groups.io list and found something like 1400 entries under amateur radio. Mostly clubs. I could not find a .io group for modes such as **DominoEX**, **THOR22**, **MFSK32**, and other "mainstream" digital modes. The **Olivia** group has around 722 members, so it is really tiny.

In short, if you want to make fast, soul-less QSOs and you want to acquire lots of QSL cards for various DX entities, states, counties, call sign prefixes, ITU and CQ zones, then **FT8** works. But if you really want to talk with someone, give **PSK31** and **Olivia** a try!

Catch 'ya on the air!