

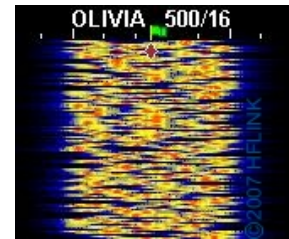
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Ionospheric Propagation

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**Center-of-
Activity**
Olivia MFSK
Digital
Keyboarding



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 Hundreds of radio amateurs
 interested in Olivia operation.

Olivia, the Magic Digital Mode

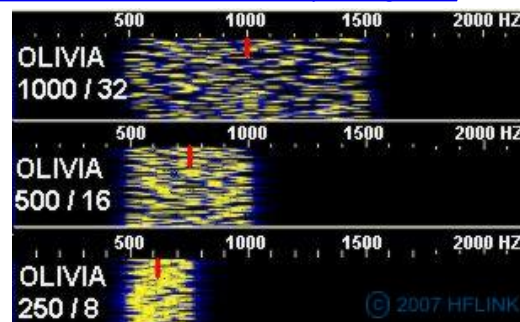
Olivia MFSK digital communications are becoming popular in amateur radio because Olivia is one of the most robust methods of text keyboarding, that can perform superbly for long distance communications in ionospheric noise conditions where other modes fail. It is possible to communicate worldwide using Olivia with as little as a few watts of transmitter power. Read the story behind the development of Olivia: [Pawel Jalocho](#).

Olivia is different from some other types of amateur radio digital keyboarding methods, because it can often be decoded perfectly in the most poor signal-to-noise conditions, even when the human ear cannot discern the presence of the signal, and even when it cannot be easily seen on the conventional waterfall spectrum display. While amateurs are free to roam the band using VFOs, operating on any amateur frequency within the operator's license regulations, **"voluntary channelisation" of Olivia digital frequencies enhances the amateurs' ability to synchronise and communicate with Olivia using extremely weak signals that would otherwise be missed through searching via VFO tuning.** Please see the [frequency chart](#) for details. These are a combination of observed, suggested, proposed, and common usage frequencies that are also used by other types of MFSK, and PAX keyboarding. More amateur radio bandplan information:

[Amateur radio IARU region 1 bandplan - IARU region 2 bandplan - IARU region 3 bandplan - organisation frequency listings](#)
[Bandplans.com an operator-generated listing of nets, operating frequencies, and international bandplan segments](#)

Olivia Formats

There are many different combinations of formats, but only about 6 Olivia MFSK bandwidth/tone formats are in common use. The 2 **most common formats** for calling CQ or initiating QSOs are: **Olivia 500/16** and **Olivia 1000/32**. A different format may easily be chosen by the operators after the QSO starts. There are advantages to faster typing with some formats and better decoding through noise with slower narrow formats. Please see the [formats chart](#) for details. Olivia MFSK is excellent for QRP DXing.



Olivia Software Downloads Olivia Download

[MixW by UT2UZ and UU9JDR](#)
[F6CTE MULTIPSK](#) or [MULTIPSK](#)
[N1SU Olivia MFSK](#)

Olivia Calling Frequencies

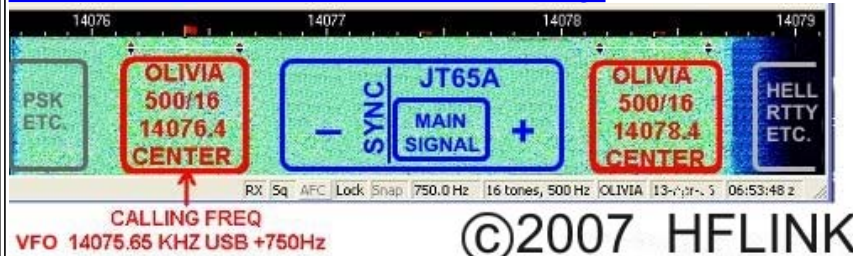
Olivia MFSK Activity Frequencies

Olivia Channels, Olivia bandplan, existing and proposed frequencies for finding Olivia QSOs
 (also used by other MFSK modes, MFSK16, PAX, PAX2, etc)

AMATEUR BAND	OLIVIA 500 Center Frequency	OLIVIA500 CQ: 500/16 DIAL Frequency USB kHz	OLIVIA500 Audio Centre Marker	OLIVIA 1000 (CQ: 1000/32) DIAL Frequency USB kHz	OLIVIA 1000 Audio Centre Marker
160 meters	1808.75 1809.25 1838.75	1808.0 1808.5 1838.0 (Region 1)	750Hz 750Hz 750Hz		

	1839.25	1838.5 (Region 1)	750Hz		
80 meters	3577.75 3583.25 3522.75	3577.0 (Region 2) 3582.5 (Region 1) 3522.0 (E.Asia)	750Hz 750Hz 750Hz	3577.0 (Region 2) 3615.0 (Region 1) 3522.0 (Asia) 3620.0 (Australia)	1000Hz 1000Hz 1000Hz 1000Hz
60 meters	5405.0 (no USA)	5404.25 (Region 1) (no USA)	750Hz		
40 meters	7026.25 7038.25 7039.25 7073.25 7076.75	7025.5 (E.Asia) 7037.5 (Reg1; 3) 7038.5 (Reg1; 3) 7072.5 (Reg2) 7076.0 (Reg2)	750Hz 750Hz 750Hz 750Hz 750Hz		
30 meters	10139.25 10141.75 10142.25	10138.5 10141.0 10141.5	750Hz 750Hz 750Hz		
BAND	OLIVIA 500 Center Frequency	OLIVIA 500 CQ: 500/16 DIAL Frequency USB kHz	OLIVIA 500 Audio Centre Marker	OLIVIA 1000 (CQ: 1000/32) DIAL Frequency USB kHz	OLIVIA 1000 Audio Centre Marker
20 meters	<u>14076.4</u> 14075.4 14078.4	<u>14075.65 USB</u> 14074.65 14077.65	750Hz 750Hz 750Hz	14105.5 14106.5 14107.5 14108.5 Bandplans note: 14101 -14112 kHz shared with automatic stations, All IARU Regions (1, 2, 3)	1000Hz 1000Hz 1000Hz 1000Hz

20 meters Olivia 500/16 information and settings



17 meters	18103.4 18104.4	18102.65 18103.65	750Hz 750Hz		
15 meters	21087.25 21087.75 21130.25	21086.5 21087.0 21129.5	750Hz 750Hz 750Hz	21152.5 21153.5 Bandplans note: 21150-21160 kHz shared with automatic stations IARU Region 2 (america)	1000Hz 1000Hz
12 meters	24922.25	24921.5	750Hz		
10 meters	28076.75 28077.25	28076.0 28076.5	750Hz 750Hz		
6 meters	50087.25 50287.25 50292.25	50086.5 (Reg.1) 50286.5 (Reg.1) 50291.5 (Reg.2)	750Hz 750Hz 750Hz		
2 meters	144136.25	144135.5 (Reg.1)	750Hz		

Olivia Formats

(source: Multipsk by Patrick F6CTE)

FORMAT	USE	TONES	AUDIO (Hz) CENTER	BAND WIDTH	SPEED (WPM)	DECODE S/N RATIO	BAUD	MultiPSK NAME
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			MARKER	(Hz)		-dB		
*500/16	CQ	16	750	500	19.5	13	31.25	"Average"
*1000/32	CQ	32	1000	1000	24.4	12	31.25	"Standard"
500/8	QSO	8	750	500	29.3	11	62.5	"Normal"
1000/16	QSO	16	1000	1000	39.1	10	62.5	"Fast"
500/4		4	750	500	39.1	10	125	"Fast2"
250/8		8	625	250	14.6	14	31.25	"Slow"
*Common formats for calling CQ or to initiate QSO								

OLIVIA 500/16 SETTINGS FOR 20 METRE BAND

FOR MixW

The screenshot shows the MixW software interface. The 'Mode' menu is open, and 'OLIVIA' is selected. The 'Olivia settings' dialog box is also open, showing the following settings:

- ☐ Inverted
- ☐ AFC
- ☒ Squelch
- Threshold: [Slider]
- ☐ Allow manual tuning
- TX start frequency: 516 Hz
- RX start frequency: 516 Hz
- Frequency margin: [Slider] ± 46 Hz

The 'Number of tones' is set to 16, and the 'Bandwidth, Hz' is set to 500. The 'OK' button is highlighted with a red dashed circle.

Below the settings, the frequency display shows several Olivia 500/16 callsigns at different frequencies:

- PACTOR WINLINK 14075.9
- OLIVIA 500/16 14076.4 CENTER**
- PACTOR WINLINK 14076.9
- OLIVIA 500/16 14077.4 CENTER**
- PACTOR WINLINK 14077.9
- OLIVIA 500/16 14078.4 CENTER**
- PACTOR WINLINK 14078.9

The 'CALLING FREQ' is indicated as 14075.65 KHZ USB +750Hz.

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