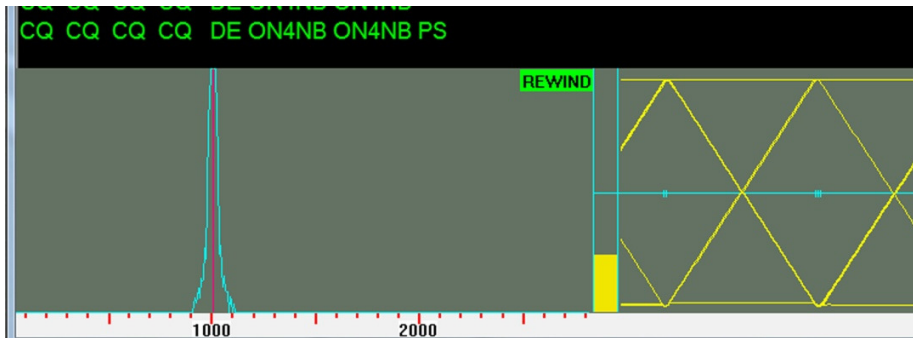# How to use the eye diagram :

**SIM-PSK31** is the only software which includes an **"eye diagram"** able to control :

➢ The presence of lozenges confirming that it is indeed a PSK modulation
➢ That the frequency is correct (cursor centered on frequency) no interference
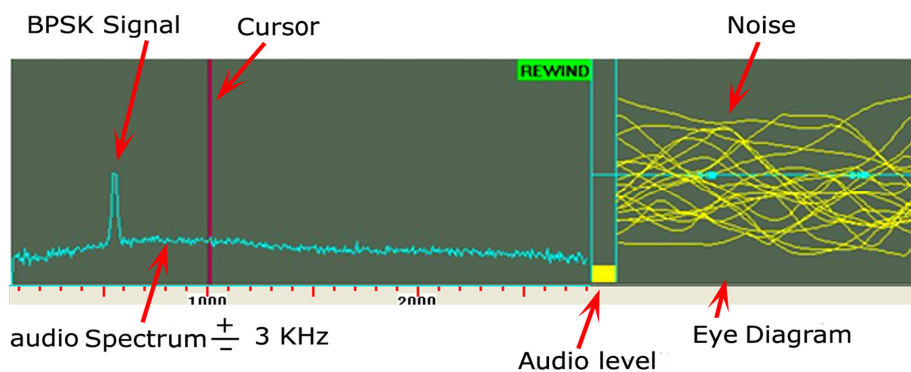➢ The good quality of binary synchronization (no gliding of the lozenges diagram)

Decoding is ok, perfect audio signal, no noise, no QRM



➢ Noise on the signal : despite a strong signal, the shown "eye diagram" is bad
➢ Due to the noise, program mistakenly reports a PSK mode instead of SIM
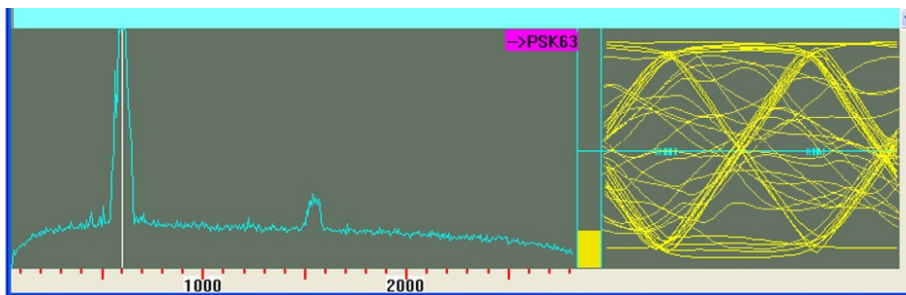


➢ Below : no signal on this audio frequency, the eye diagram does only show the noise
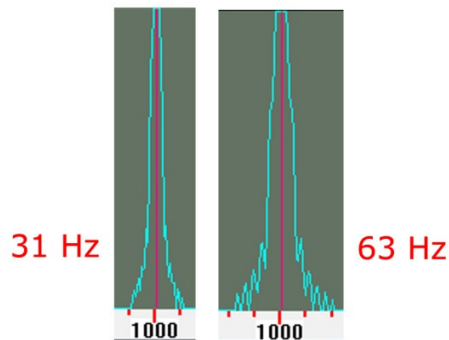
- Detection of a non-adapted speed  is easy to define :
- Window 1 - signal ok and decoded
- Window 2 - a transmission SIM / PSK31 is received in mode 63
- Window 3 - a transmission sent in mode SIM / PSK63 is received in mode 31.



31 => 31 OK          31 => 63          63 => 31



31 Hz          63 Hz
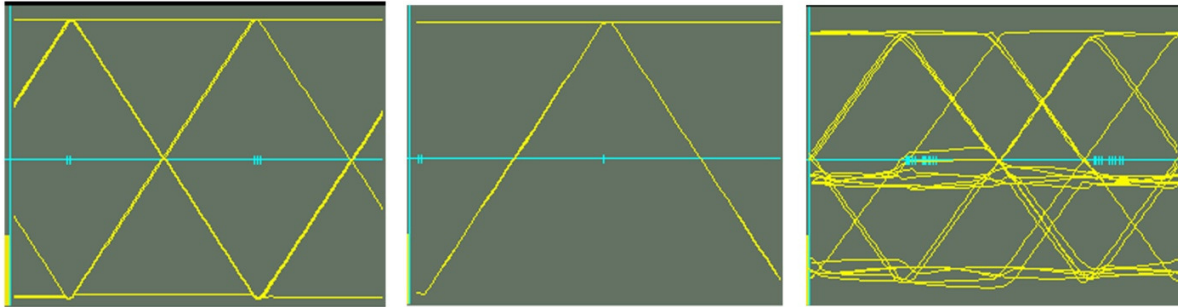
Bandwidth : 2 times wider in mode 63 than in mode 31

Remarks :
The program doesn't tell in which mode you receive a signal.  You can determine it visually by observing bandwidth ( 2 times wider in mode 63 as shown here above ).
If you receive in mode SIM31 a signal sent in PSK ( 31 or 63 ) you will see in the TAG "Rewind", PSK31 displayed in purple  .
The same if you receive in mode SIM63 a signal sent in PSK, you will see in the TAG "Rewind", PSK63 even if it is in PSK31
It's up to you, to choice the good bandwidth 31 or 63...