4.4 iRSSoverlaoding

The following graphics presents the input parameters to activate when the overloading mechanism is to be simulated.

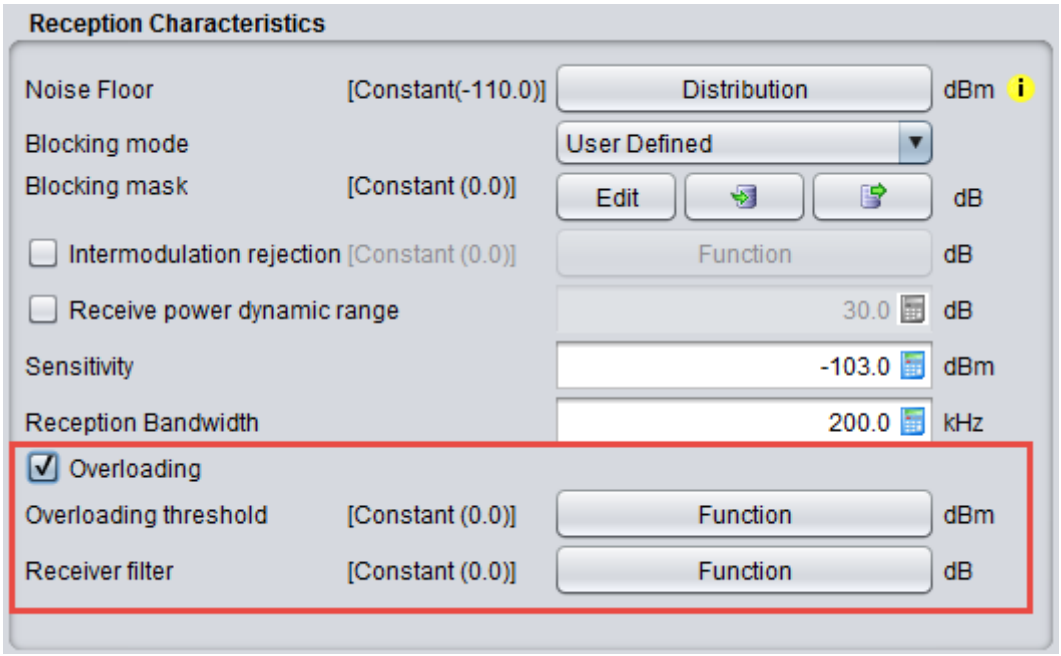

Figure 107: Activation of the overloading feature in SEAMCAT

The overloading mask is expressed in power (dBm) versus frequency offset (MHz) and is defined as a function in SEAMCAT.

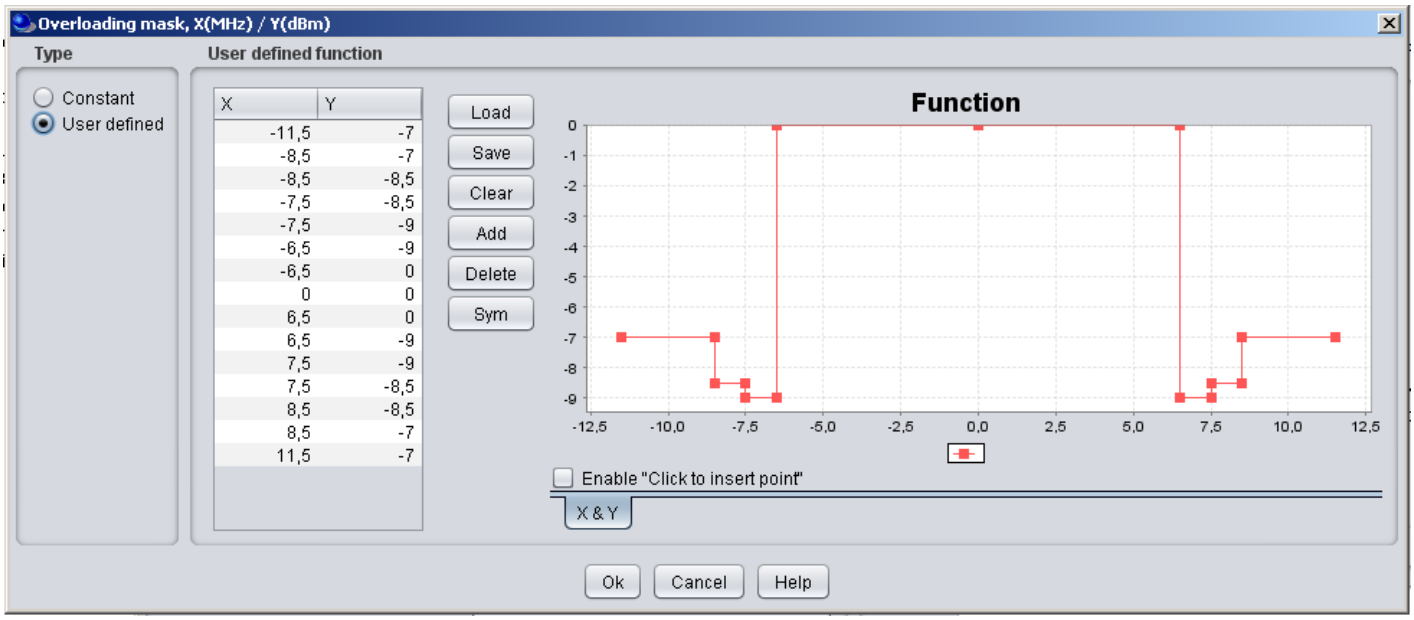

Figure 108: Setting of the overloading mask in SEAMCAT

The filtering of the receiver is expressed in power (dB) versus frequency offset (MHz) and is defined as a function in SEAMCAT (see Figure 109). It is set by default to a constant value of zero.

Note that if the blocking attenuation mode in user-defined and the overloading feature have been selected, then a consistency check will remind you that the actual blocking response and the receiver filter are the same element and they should not be accounted twice.

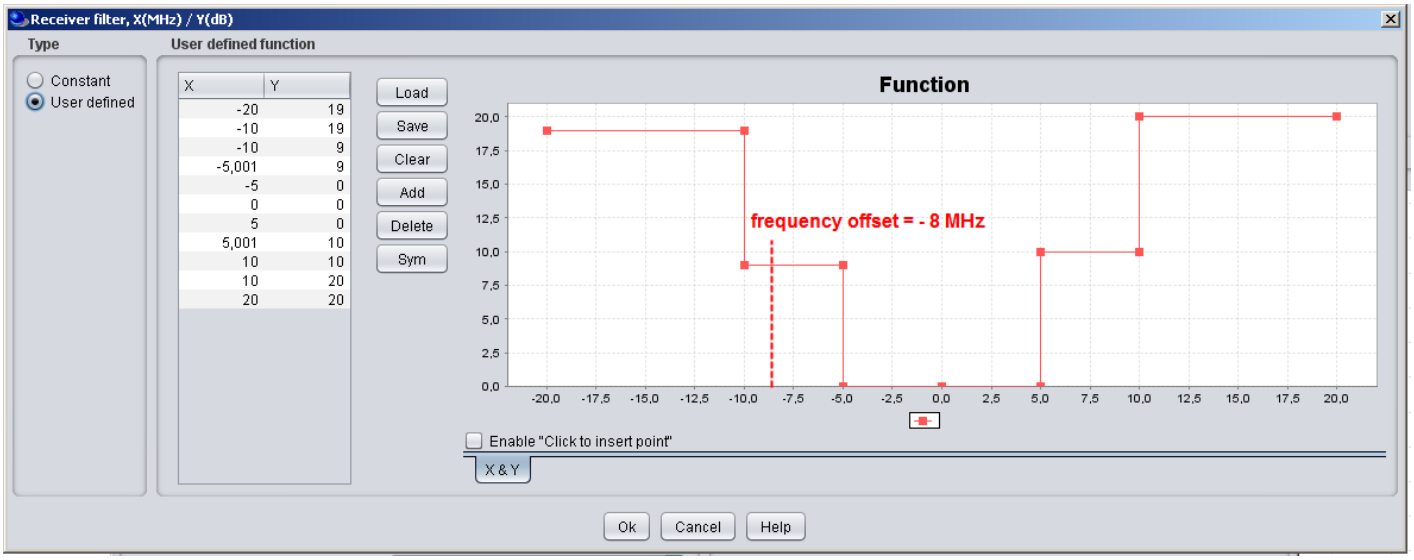

Figure 109: Example of filling the Rx filter function

When a simulation is run the following results are extractable (see Section 12.3.4 for further details)

As an example, this means that for the following overloading mask presented in Figure 3 with a victim frequency of 908 MHz and an interfering frequency of 900 MHz, the delta frequency (i.e. frequency offset) is -8 MHz with an overloading treshold of -8.5 dB and a Rx filter value of 9 dB. This can be found from the log file as shown below in Figure 110.

```
(UnwantedInterference.java:157[itUnwantedEmissions]) - Interfering Transmitter Frequency = 900.0
(UnwantedInterference.java:158[itUnwantedEmissions]) - Victim Receiver Frequency = 908.0
(UnwantedInterference.java:159[itUnwantedEmissions]) - Victim Receiver Bandwith = 0.2
(OverloadingInterference.java:125[itVrPathAntGains]) - Interfering Transmitter Frequency = 900.0
(OverloadingInterference.java:126[itVrPathAntGains]) - Interference Link - Rx -> Tx Azimuth = 283.2153522531489
(OverloadingInterference.java:127[itVrPathAntGains]) - Interference Link - Rx -> Tx Elevation = 0.0
(OverloadingInterference.java:128[itVrPathAntGains]) - Interference Link - Tx -> Rx Azimuth = 150.31617757231504
(OverloadingInterference.java:129[itVrPathAntGains]) - Interference Link - Tx -> Rx Elevation = 0.0
(OverloadingInterference.java:130[itVrPathAntGains]) - Victim Receiver Antenna Peak Gain = 0.0
(OverloadingInterference.java:131[itVrPathAntGains]) - Victim Receiver -> Interfering Transmitter Antenna Gain:
(OverloadingInterference.java:66[getIRSSOverloading]) - Victim receiver overloading calculations
(OverloadingInterference.java:67[getIRSSOverloading]) - Interfering Transmitter power = 33,000000
(OverloadingInterference.java:68[getIRSSOverloading]) - Interfering Transmitter -> Victim Receiver Antenna Gain = 0,000000
(OverloadingInterference.java:69[getIRSSOverloading]) - Victim Receiver -> Interfering Transmitter Antenna Gain = 0,000000
(OverloadingInterference.java:70[getIRSSOverloading]) - Interfering Transmitter -> Victim Receiver Path Loss = 106,945033
(OverloadingInterference.java:71[getIRSSOverloading]) - Interfering Transmitter frequency 900,000000
(OverloadingInterference.java:72[getIRSSOverloading]) - Delta frequency = -8,000000
(OverloadingInterference.java:73[getIRSSOverloading]) - Victim Receiver Filtering = 9,000000
(OverloadingInterference.java:93[getIRSSOverloading]) - NOT using power control, iRSSValue = -82,945033 = 33,000000 + 0,000000 - 106,945033 - 9,000000 + 0,000000
(EGE.java:2189[simulateInterference]) - iRSS Unwanted = -81,903833
(EGE.java:2190[simulateInterference]) - iRSS Blocking = -73,945033
(EGE.java:2192[simulateInterference]) - iRSS Overloading = -82,945033
(EGE.java:690[notifyPositionListenersInterferingTransmitter]) - Interfering Transmitter position: (2.4651808222276714,0.2524286328681324)
(EGE.java:708[notifyPositionListenerswantedReceiver]) - Wanted Receiver position: (-0.5639896071043968,4.399520845643726)
(EGE.java:2263[simulateInterference]) - Processed interferer #0
(EGE.java:2264[simulateInterference]) - ********************************************
(EGE.java:2293[simulateInterference]) - Doing overloading summation
(EGE.java:2374[simulateInterference]) - There is 1 transmitter, using single iTx-mode
(EGE.java:2375[simulateInterference]) - rSum = -74,445033 (freq=900,000000,dFreq=-8,000000,iRSSo=-82,945033,oth=-8,500000)
```

Rx filter

frequency offset

overloading threshold

Figure 110: Output from logfile

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