

# 2.16 Testing propagation models

A sanity check on the suitability of a propagation model can be done by clicking on <Tools/Test Propagation Models> in the main menu of SEAMCAT, by clicking on the icon (✂) of the toolbar or by pressing <CTRL+SHIFT+M>. With this feature, it is possible to evaluate the result while using a certain propagation model.

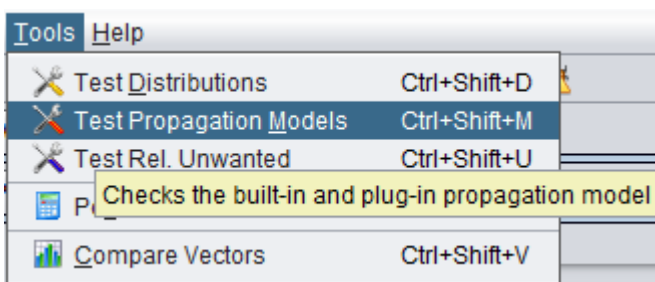


Figure 50: Access to testing propagation

model

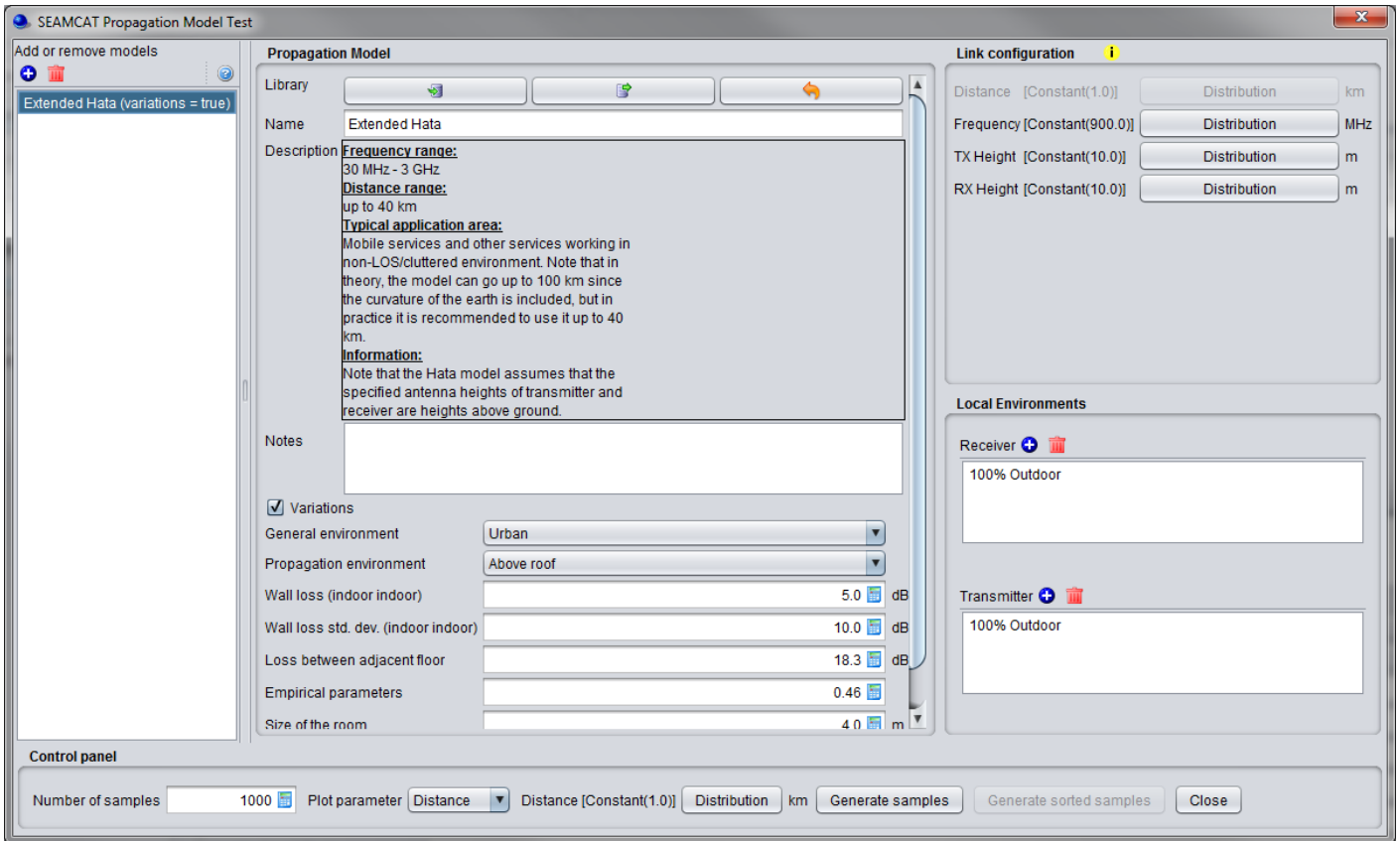
For that, choose the propagation models to compare them. It is possible to compare 2 or more propagation models with this interface.

Figure 51 shows that the SEAMCAT resulting attenuation from the free space is 101.47 dB where the free space path loss is defined as:

$$L = 32.44 + 10 \log_{10} \left( \left( \frac{(h_t - h_r)^2}{1000} + d^2 \right) + 20 \log_{10} f \right) \quad (\text{Eq. 16})$$

where d is given in km and f is given in MHz. This results in

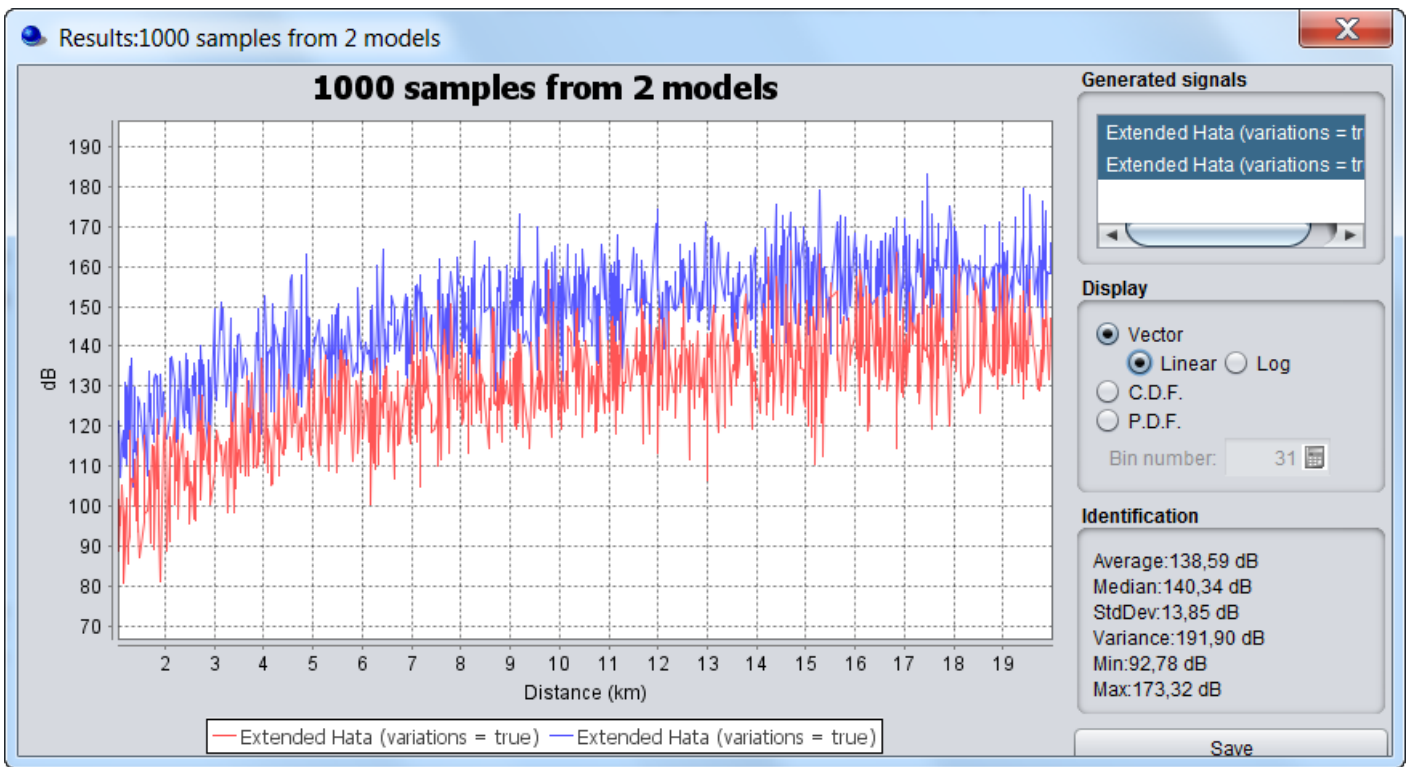
$$L = (32.44 + 10 \log(8) + 20 \log(1000)) = 101.5 \text{ dB}$$



**Figure 51: Illustration on to check the propagation model results**

If one parameter is chosen as a distribution (for instance distance), then the button <generate sorted samples > is activated. Pressing it enables you to plot your results according to a sorted X-axis from min to max.

Finally click on <Generate samples> or <generate sorted samples> (depending which one is active) to view the results. If no results are displayed, check the Java console for any error messages.



**Figure 52: Example comparing 2 propagation loss using the “generate sorted samples”.  
You can display the vector in linear or logarithmic scale**

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