

3.6.3 Example of probability of interference calculation

The protection criteria to be used for the calculation of the probability of interference and the type of interference to be considered (unwanted and/or blocking) can be equally chosen (see Figure 97).

Using the **unwanted mode**, it is possible to derive the C/I:

$$dRSS/iRSS_{unwanted} = -53.5 - (-77.5) = 24 \text{ dB}$$

Since the resulting C/I is above the protection criteria (19 dB), the probability of interference calculated by SEAMCAT (Interference calculation) is equal to 0).

The same conclusion is reached by using the C/(N+I) criteria. It should be noted that SEAMCAT performs a consistency check (ANNEX 19:) between the interference criteria (ANNEX 3:).

It is also possible to derive the (N+I)/N = -77.5 - (-100) = 22.5 (since I >> N). Since the (I+N)/N which is obtained is above the protection criteria (3 dB), the probability of interference calculated by SEAMCAT (Interference calculation) is equal to 1).

The same conclusion is reached by using the I/N criteria.

Using the blocking interference mode (protection ratio) it is then possible to derive the C/I:

$$dRSS/iRSS_{blocking} = -53.5 - (-113.5) = 60 \text{ dB}$$

Since the C/I obtained is above the protection criteria (19 dB), the probability of interference calculated by SEAMCAT (Interference calculation) is equal to 0).

It is also possible to derive the $(N+I)/N = -113.5 - (-100) = -13.5$. Since the $(N+I)/N$ which is obtained is below the protection criteria (3 dB), the probability of interference calculated by SEAMCAT (Interference calculation) is equal to 0).

Then, by taking into account the sum of the two signal types, the probability of interference becomes equal to 1 (due to the unwanted emissions)

Revision #1

Created 2026-04-14 10:07:53 UTC by ECO TECH

Updated 2026-04-14 10:08:14 UTC by ECO TECH