IEEE P802.19
Wireless Coexistence

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| Revision of Section 9.4.6.5.2. |
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Abstract.

Unclear points in Section 9.4.6.5.2 are revised. The modification parts are being highlighted via revision track.

# 9.4.6.5.2 Calculation method of maximized output power level of TVBD

An optimized solution to specify the output power of TVBD networks or devices is explained in this section. If one considers the mutual in-block/out-of-block interference effects among TVBDs, one of the calculation ways could be as follows:

(Step 0)

The intrinsic parameters for each active interferer of operational frequency of each TVBD network managed by each master TVBD in Table 82 are input.

 (Step 1)

Calculation of location specific output power level of TVBD () for each operational frequency of the active interferers based on equation in section 9.4.6.5.2 as the temporal value for later calculation steps. The interfere-victim reference point is chosen based on the criteria to find the closest geo-location point for each TVBD in the protected contour of BS receiver as shown in Figure 191.

If the target TVBD uses the same channel as the usage channel(s) of interference-victim receiver in the reference point, it can be defined as follows:

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If the target TVBD uses a different channel with the usage channel(s) of interference-victim receiver in the reference point, it can be defined as follows:

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(Step 2)

Redundancy of the multiple interference margin value due to the flexible multiple interference margin setting is generated in step 1 when the number of actual active TVBD(s) is smaller than the estimated number of active interferes in the margin value. Because, the calculation method in step 1 does not differentiate the total number of TVBD interferers on in-band emission from the total number of TVBD interferers on out-of-band emission, so a harmful interference for target protection service receiver may occur. Therefore, the value shall be defined based on the maximum number of active interferes in each available channel of the target TVBDs, and it has some redundancy when there is a difference between/among numbers of active TVBD interferes in each operational frequency. Therefore, the calculation engine will try to minimize the redundancy of the multiple interference margin value. This first step will try to find the most severe interfere-victim reference point in all the reference points of the calculation target TVBDs. The point is chosen according to the following criteria:



 , where

: Set of indexes of TVBD which uses protection target frequency channel;

: Set of indexes of adjacent frequency channel  of protection target frequency channel ;

: Set of indexes of TVBD which uses adjacent frequency channel  of protection target frequency channel .

(Step 4)

Calculation of output power adjustment value  based on the most severe interfere-victim reference point () to reduce the redundancy of the margin value due to the fixed/flexible multiple interference margin setting while satisfying the incumbent service protection in the following criteria:

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To ensure the fairness for the communication opportunity among all the target TVBDs, all the values of and are regarded as the same value (), so the value of  could be obtained as follows:

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(Step 5)

The final results of local specific output power of TVBDs are calculated as follows:

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