

Carrier And Intermodulation Performance Of Limiters Excited Bymulticarriers

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Summary

A general formula, using a Fourier-series representation, is derived for the input-output characteristic of ideal hard limiters, biased hard limiters and biased soft limiters. Using this formula one can obtain an expression, involving Bessel functions for calculating the amplitudes of the output products of a limiter excited by a multicarrier signal plus Gaussian noise. In contrast with previously published results, the implementation of the present expression requires the computation of functions that are available in most mathematical-library subroutines and can even be implemented by using programmable pocket calculators. Results obtained by using the present expression are in excellent agreement with the previously published results. Additionally, the expression is used to generate a soft- and a hard-limiter signal-suppression database for the case in which a single large carrier and a number of equal-power small carriers exist in a noisy environment

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