Abstracts

Phase noise effect on frequency measurement error of IFM receivers

K. Tajima, K. Kawakami, A. Kagohara and K. Itoh. "Phase noise effect on frequency measurement error of IFM receivers." 1998 MTT-S International Microwave Symposium Digest 98.3 (1998 Vol. III [MWSYM]): 1815-1818.

This paper presents phase noise effect on frequency measurement errors of an IFM (Instantaneous Frequency Measurement) receiver. In the paper, a calculation method of frequency measurement errors due to phase noise of a PLL synthesizer for an local oscillator is discussed. Calculated results indicate, (1) Phase noise effect on frequency measurement error is clarified, (2) Frequency measurement errors can be reduced by narrowing a noise bandwidth of the PLL synthesizer when integrated phase noise in the noise bandwidth remains constant. Moreover, calculated results are verified by measured results with a developed 5 to 10 GHz PLL synthesizer.

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