Abstracts

A 2 - 5 GHz Tunable Magnetostatic Wave Oscillator

I. Aoki. "A 2 - 5 GHz Tunable Magnetostatic Wave Oscillator." 1991 MTT-S International Microwave Symposium Digest 91.3 (1991 Vol. III [MWSYM]): 969-972.

We developed a prototype 2 - 5 GHz tunable magnetostatic wave (MSW) delayline oscillator. A continuous frequency sweep range is between 1.8 GHz and 5.6 GHz. SSB phase noise characteristics at 10 kHz offset frequency are better than -111 dBc/Hz. We have carefully controlled an oscillation power level because a saturation of a MSW delayline degrades inherent SSB phase noise of the delayline by 40 dB at 10 kHz offset frequency. The degradation of the the inherent SSB phase noise directly affect to an output signal. The frequency drift rate changes from 6.8 MHz/K to 2.8 MHz/K for 2-5 GHz almost linearly. We stabilized the drift within ±20 MHz for the temperature range from 270 K to 340 K by sensing YIG film temperature and adjusting tuning coil current.

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