Abstracts

Phase Noise of a Tunable and Fixed Frequency Sapphire Loaded Superconducting Cavity Oscillator

M.E. Tobar and D.G. Blair. "Phase Noise of a Tunable and Fixed Frequency Sapphire Loaded Superconducting Cavity Oscillator." 1992 MTT-S International Microwave Symposium Digest 92.1 (1992 Vol. I [MWSYM]): 477-480.

Measured phase noise of two GaAs FET amplifiers, and a varactor phase shifter at 9.7 GHz, reveal that optimum FET and diode bias voltage changes when cooling from room to liquid helium temperatures. This understanding enables optimization of the noise in an all cryogenic Sapphire Loaded Superconducting Cavity X-Band loop oscillator. We show that we can reduce the current measured oscillator noise of -120 dBc/Hz at 1 kHz, by 20 to 45 dB.

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