

# Abstracts

## State-Preserving Intermittently-Locked Loop (SPILL) Frequency Synthesizer for Portable Radio (1989 Vol. I [MWSYM])

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S. Saito, Y. Tarusawa, H. Suzuki and S. Yuki. "State-Preserving Intermittently-Locked Loop (SPILL) Frequency Synthesizer for Portable Radio (1989 Vol. I [MWSYM])." 1989 MTT-S International Microwave Symposium Digest 89.1 (1989 Vol. I [MWSYM]): 435-438.

A novel PLL concept, SPILL, suitable for intermittent-operation frequency synthesizers used in UHF portable radio sets is proposed. The SPILL employs digital circuit techniques which preserve frequency and phase during power-off periods, in order to perform fast acquisition at the beginning of power-on period. Both theoretical analysis and experiments confirm acceptable acquisition performance. A 1.6 GHz SPILL frequency synthesizer achieves two order magnitude improvement on acquisition time. Application of the SPILL to high frequency synthesizer are especially effective for reducing power consumption in the portable radio communication set.

[Return to main document.](#)