Abstracts

Superconductive Digital Instantaneous Frequency-Measurement Subsystem (1993 Vol. III [MWSYM])

G.-C. Liang, C.F. Shih, R.S. Withers, B.F. Cole, M.E. Johansson and L.P. Suppan. "Superconductive Digital Instantaneous Frequency-Measurement Subsystem (1993 Vol. III [MWSYM])." 1993 MTT-S International Microwave Symposium Digest 93.3 (1993 Vol. III [MWSYM]): 1413-1416.

A five-bit high-temperature-superconductive digital instantaneous frequency-measurement (DIFM) subsystem has been constructed for the determination of the frequency of unknown signals over a 500-MHz bandwidth, centered on 4 GHz, with a resolution of ± 7.8 MHz. The subsystem contains a cryogenic section with five discriminator modules utilizing superconductive delay lines, GaAs mixers, and power dividers. The subsystem also has a room-temperature GaAs limiting amplifier and a silicon postprocessor. With a single-tone CW input between -40 dBm and +10 dBm, the frequency quantization boundaries of the subsystem are, on average, 3.1 MHz from their design values.

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