Abstracts

A Tapped-Delay-Line Superconductive Chirp Filter in Shielded Microstrip

R. Ramisch, G.R. Olbrich and P. Russer. "A Tapped-Delay-Line Superconductive Chirp Filter in Shielded Microstrip." 1991 Transactions on Microwave Theory and Techniques 39.9 (Sep. 1991 [T-MTT] (Special Issue on Microwave Applications of Superconductivity)): 1575-1581.

A superconducting chirp filter having a dispersive time delay of 26 ns and a 3.4 GHz bandwidth centered at 4.7 GHz has been fabricated using a niobium-on-silicon shielded microstrip technology. Along a 2 X 1.6 m delay line, unequally spaced microstrip directional couplers are employed as sampling devices. To achieve an improvement in dispersion and coupler directivity over conventional microstrip, the device uses a superconductive shield mounted at a distance equal to the height of the dielectric on top of the microstrip structure. Structural support of the 70-µm-thin high-resistivity dielectric is provided by a large-area bond to a glass substrate.

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