Abstracts

Ultra selective 22-pole, 10-transmission zero superconducting bandpass filter surpasses 50-pole Chebyshev rejection

G. Tsuzuki, Shen Ye and S. Berkowitz. "Ultra selective 22-pole, 10-transmission zero superconducting bandpass filter surpasses 50-pole Chebyshev rejection." 2002 MTT-S International Microwave Symposium Digest 02.3 (2002 Vol. III [MWSYM]): 1963-1966 vol.3.

An ultra selective filter for 3G and 4G wireless application is presented. The demonstrated filter consists of twenty-two resonators and five cross couplings that produce ten transmission-zeros. The filter was designed at 1950 MHz center frequency with a 20 MHz bandwidth to meet existing 3G wireless applications. The measured data from the filter exhibited excellent selectivity, steeper than 30 dB/100 kHz skirt slope and 90 dB rejection at 350 kHz from the band edge. This filter surpasses the rejection of a 50-pole Chebyshev filter. To design a large number of resonators in a limited wafer area, a new compact resonator was developed. The filter was fabricated using a YBCO thin film on a 2-inch MgO wafer.

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