Abstracts

Dielectric Receiving Filter with Sharp Stopband Using an Active Feedback Resonator Method for Cellular Base Stations (Dec. 1989 [T-MTT])

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An 800 MHz band dielectric receiving filter with a sharp stopband has been developed. This filter is composed of a conventional dielectric antenna filter and three active band-stop filters, each sharply eliminating one band in the passband. In the active band-stop filters, small dielectric resonators in which the unloaded Q is raised to about 50000 by means of an active feedback resonator method are used. The active band-stop filter is designed to obtain optimum stability and an optimum noise figure. One of these active band-stop filters has a center frequency of 845.75 MHz, a stopband width of 1.0 MHz, and an attenuation of 30 dB. Deviation of the resonant frequency is held within ±30 kHz and the noise figure at passband is adequately small. The size of the dielectric receiving filter is 480 x 250 x 44 mm^3, and the volume is less than 1/20 that of a conventional filter rising cavity resonators.

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