Abstracts

An Investigation of Six-Port Phase-Type Circulators and Switches

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A wide variety of ferrite circulator and switches is being used in UHF channels of current wireless systems. Theory of three- and four-port circulators and switches has reached a fairly advanced development stage. Appropriate devices in our country and elsewhere have parameters that are pretty close to the maximum attainable. Nevertheless, the problems concerning the improvement of electric strength and reduction of losses continue to be topical. They are especially urgent when operational peculiarities of the system call for a considerable number of such devices. The currently known junction patterns for several circulators, though lending considerable operational possibilities, are on the other hand not optimal from the point of view of electric strength (each circulator carries full power) and losses (the circulator losses are added). Increase in the number of circulators or switches also leads to reduction of reliability of the set as a whole. Therefore it is but natural to attempt a combination of functions of a number of circulators (switches) in a single device. This paper deals with six-port devices permitting an increase of electric strength as well as reduction of losses.

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