ABSTRACT

With the development of technology and information which now is more faster. Then, needed a system that can convey information quickly and accurately to the user. Coupled with the habits of users who are often mobile (mobile) is required technology with a wireless system that can meet the needs of the mobile user. One of the technologies of wireless communication is Wi-Fi (802.11).

For this reason, it is necessary to construct a filter that can accommodate from a channel system of 802.11AC that is a band pass filter having a bandwidth of 160 MHz. The design of this bandpass filter uses the coupled line compact method, and uses the chebyshev frequency response, since this filter is required to have a good selectivity level.

The filter was designed using a Roger 4003 dielectric material substrate with a relative permissive value is 3.38 and with a substrate thickness is 0.813 mm. the result of filter dimension are 60.45 mm x 41.8 mm with a bandwidth of 160 MHz. result of *return loss* measurement at middle frequency (5250 MHz) is -23,370 dB, *insertion loss* is -2,374 dB, VSWR is 1,1478 and impedance is 57,05 Ω.

Keywords : *filter, Coupled line compact, chebyshev*