ABSTRACT

WiFi 802.11AC is a new generation of wirelles communication. WiFi 802.11AC use non-overlapping channel for channel system. that system does not allow inter channel interference. for that reason, it needs to be made a filter which can accomodate of the 802.11AC canal system is a band pass filter that has 80 MHz Bandwidth.

At this filter design is use combline filter. The combline filter is comprised of an array of coupled resonator. The lines are each short circuited to ground at the same end while opposite ends are terminated in lumped capacitors. Capacitor can be used for change each resonator frequency. Designing filter based on G.L Matthaei design equations and B.F Nicholson curve that combinning from E.G Cristal curve. This filter works at 5210 MHz as a center frecuency. At thit filter use chebyshev frequency response, Insertion Loss -0,4 dB, Return Loss below -15 dB and source impedance 50 Ohm. In designing filter need to be considered the material of combline filter, dimension determination, and the characteristic of each resonator in oerder to get result obtained are idel filter.

Combline filter design using *cavity* box so the value of ε_r is 1 (vacuum) or 1.0059 (normal air) where the two values is better than the value of microstrip. The measurement result show the performance of filter work at 5210 MHz as center frequency with 65 MHz *Bandwidth*. *Return Loss* -30 dB, *Insertion Loss* -4.848 dB, VSWR 1,07 and charasteristic impedamce of filter 56 Ohm.

Keywords: *Filter, Resonator, combline, tuning, 802.11AC*