

ABSTRACT

LTE (Long Term Evolution) or 4G is an all-IP based broadband technology standard as the result of 3GPP (3rd Generation Partnership Project) that is able to provide high data rate for users either on uplink or downlink with wide bandwidth. In every region of the country has different frequency standard. The standard frequency of LTE in Indonesia is divided into 5 which one of them is at frequency 1.800 MHz. On this Final Project, it is created a design and realization bandpass filter (BPF) for LTE at downlink frequency 1.805-1.880 MHz.

Filter is a device that can pass the signal at the desired frequency (passband) and dampen the others (stopband). Filter that designed using Coupled Edge methods. Coupled edge methods has an advantage that is simple design because the resonator topology arranged in parallel, so it is easy to be created.

The design of this filter is created on CST software and measured in Network Analyzer. The BPF filter is realized as a microstrip filter with FR-4 as a dielectric material ($\epsilon_r = 4.3$). From the result of design, filter has insertion loss that is -3.43 dB, return loss that is -17.24 dB, and VSWR that is 1.31 at the middle frequency 1842.5 MHz with bandwidth 95.4 MHz.

Keywords: *LTE, BPF Filter, Coupled Edge.*