

ABSTRACT

Mach Zehnder modulator is an integrated device and able to support optical fiber network to be a better one. The device has large bandwidth capacity. Its modulation velocity is up to giga.

This final project will discuss about the characteristic of Mach Zehnder modulator. The characteristic is the interference that will be held in arm of the modulator. And we can know how the effect to the intensity of the output. The Mach Zehnder modulator is one of the electrooptic which works with the interference that produce from the optical wave with the coherent phase.

In Mach Zehnder modulator, the optical wave was splitted by the 3-db coupler and produce the wave with the same phase. At the first arm, the voltage is applied with different voltage. So it make some interference because the voltage induce make some stimulate waves. The phase of the first arm will be different from the beginning it comes, because the interference will be held in that arm. Not only interference make the different of phase, but the material which is use in Mach Zehnder modulator makes some influence, too. In the next step, that wave will recombine with the wave in other arm that split with the first wave. So it not the coherent wave like the first because the phase have been different. So at the output of Mach Zehnder modulator produce the new intensity cause the phase different.

In Mach Zehnder modulator, the intensity were being a maximum if the phase different is 0° and minimum if the different of phase is 180° . The transfer characteristic is the same with the intensity.

Keywords : Mach-Zehnder, Interference, electrooptic, Transfer Characteristic