ABSTRACT

Telkom University is conducting research on the nano satellite remote sensing missions. Nano satellite telecoms university named Tel-USAT one that uses the 2425 mhz frequency for data transmission purposes payload camera with remote sensing missions. This nano satellites orbiting on track Low Earth Orbit (LEO). This satellite has a primary function for data communication purposes. In the space segment are RSPL subsystem (Remote Sensing Payload) is in charge of sending the image data of the Earth's surface captured by the camera. RSPL (Remote Sensing payload) as the payload sensor using 2425 Ghz frequency. To be able to work well it needs a band pass filter to be able to pass these frequencies.

To obtain these results, these filters must have an accuracy rate of a sharp slope and has a bandwidth of 20 MHz. In designing the band pass filter using the Hairpin-Line. Filter designed using Rogers Duroid substrate 5880.

Filter designed using hairpin line with 0:01 ripple Chebyshev frequency response dB. At the center frequency at 2425 MHz filter shows an insertion loss of -3.988 dB and return loss are appreciating -10.680 dB. Hairpin bandpass filter line shows a linear phase response. The bandwidth of this filter has been designed by 45 Mhz. With the existence of this filter device, so it can support the design of the filter in nano satellites.

Keywords:*Nanosatellite,Band Pass Filter,Hairpin-Line,chebyshev,ripple, Rogers Duroid*