ABSTRACT

The implementation of digital TV in Indonesia has been started since 2012 until the time of execution of Analog Switch Off (ASO) where analog TV in Indonesia is not used anymore. The Government has issued Regulation of Minister of Kominfo No.32 of 2013 on Organizing Digital Television Broadcasting and Multiplexing Broadcasting Through Terrestrial System [1]. Where in Indonesia will be established DVB-T2 technology that is based on free-to-air broadcasting.

The television transmitter system consists of exciter, driver, HPA (High Power Amplifier), and antenna. To obtain the desired level of transmit power, an amplifier is needed to amplify the output signal from the exciter before it is transmitted by the antenna. However, the output signal from the exciter cannot be directly amplified by the HPA because the signal level is too small, so it requires several levels of gain to achieve maximum output power. In order to maintain the quality of the transmission device, the power amplifier needs temperature control because the RF power amplifier transistor is very susceptible to damage at high temperatures.

In this final project will be designed and realized HPA (High Power Amplifier) which will be used in UHF frequency range (Ultra High Frequency). HPA is the final level amplifier that determines the overall output power of RF (Radio Frequency) which will then be connected to the transmitting antenna.

The result of HPA design and realization on DVB-T2 standard can work on 470-690 MHz frequency with 7-15 dB used gain, efficiency is 25% at bandwidth 220 MHz and which will be realized using FR 4 with ε_r *is 4.7.*

Keywords: High Power Amplifier, DVB-T2.