# ABSTRACT

Telecommunications technology is growing rapidly, including television broadcasting technology (TV), which is migrating from analog TV to digital TV. Digital TV has an advantage of clear and less shaded images. The Digital Video Broadcasting - Second Generation Terrestrial (DVB-T2) standard was chosen in Indonesia, however optimal DVB-T2 parameters suitable for rural areas of Indonesia such as bandwidth, coding rate, Cyclic Prefix (CP) length, block length, and Fast Fourier Transform (FFT) size is unknown.

This thesis proposes Indonesia digital TV standard DVB-T2 Radio Frequency Profile (RF Profile) for rural areas of Indonesia. This thesis simulates the channel model using New York University Simulator (NYUSIM) software and evaluates the channel model using Orthogonal Frequency Division Multiplexing (OFDM) to achieve maximum performance. This RF Profile channel model is also beneficial for industries in the mass production of Indonesia digital TV devices. This thesis evaluates the outage performance of the proposed Indonesia DVB-T2 channel model validated in terms of the Bit Error Rate (BER) and Frame Error Rate (FER) parameters. This thesis considers OFDM with Cyclic Prefix (CP) and Quadrature Phase Shift Keying (QPSK) modulation DVB-T2 for perfomance analysis.

The results of this thesis are (i) RF Profile of Indonesia DVB-T2 channel model, (ii) the performance of DVB-T2 in Pangalengan and Situbondo villages by using channel coding. The considered Channel coding is simple Repetition codes, with the purpose of simple evaluation. The use of strong coding may result in better performances.

Keywords: TV Digital, DVB-T2, OFDM, Channel Model, Radio Frequency Profile (RF Profile)