

## ABSTRACT

DVB (Digital Video Broadcasting) is one of the broadcasting system that is used to transmit digital television broadcast or video to the end user . One of the standard DVB is Digital Video Broadcasting Terrestrial Second Generation (DVB-T2). In DVB-T2 also has implemented the delivery of High Definition Television (HDTV) although still very limited. HDTV video's robustness against noise is not too high so that there will be a decrease in the quality of the signal receive at the user if bad channel conditions. This is because the channel changes, can be caused by multipath channel, movement objects around the user, the user's own movement and noise.

To solve the problems mentioned above, can be used multiple antenna technique Space Time Block Code (STBC) to increase signal robustness against noise. The use of multiple antennas *Alamouti* STBC in the DVB-T2 signal can increase resistance to noise ratio at the receiver side. On the other hand, there are other types of STBC which can also increase the resistance of the signal to noise using same number of antennas. The STBC is *golden code* In this research has compared the BER against  $E_b / N_0$  is represented by a graph of the two types of STBC, STBC *Alamouti* and STBC *golden code*.

The results show that the STBC *golden code* has better performance than the STBC *Alamouti* with the same number of antennas. In the STBC *golden code* 2x1 to achieve the BER target  $10^{-5}$  requires  $E_b/N_0$  17.67 dB, for the STBC *golden code* 2x2 requires 15.68 dB. While the STBC 2x1 *Alamouti* requires 19.68 dB, for STBC 2x2 *Alamouti* requires 18.71 dB. Research showed that the STBC *golden code* 2x1 and STBC 2x1 *Alamouti* has coding gain 2.01 dB. As for the STBC *golden code* 2x2 and STBC *Alamouti* 2x2 has coding gain 3.03 dB.

Keyword : DVB-T2, HDTV, STBC, *Alamouti*, *golden code*, BER,  $E_b/N_0$