

UNIVERSITI TEKNOLOGI MARA

**MEASUREMENT OF DIGITAL VIDEO
BROADCASTING-TERESTRIAL (DVB-T) SIGNAL
IN MALAYSIA**

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ABSTRACT

DVB-T (Digital Video Broadcasting-Terrestrial) is one of technical standard to deliver DTV (Digital Television), developed by the DVB Project. This standard is the most widely DTT (Digital Terrestrial Television) system used around the world since it was introduced in March 1997. One of the DVB-T main advantages is its flexibility, where the network can be designed to deliver various services such as multichannel SDTV (Standard Definition Television), HDTV (High Definition Television), fixed, portable, mobile and handheld reception. The quality of the DVB-T signal reception (Signal Coverage) is determined by Field Strength, MER (Modulation Error Ratio), BER_{bV} (Bit Error Rate before Viterbi) and BER_{aV} (Bit Error Rate after Viterbi). This research was conducted in order to investigate the coverage of DVB-T signal transmitted from a 5 kW transmitter at Menara Kuala Lumpur by measuring and analyzing the DVB-T parameters. In this research, a measuring vehicle equipped with measuring equipment and a receiving directional antenna. This receiving antenna is placed on a pole at a height of 10m above ground. Parameters quality of DVB-T which are field strength, MER, BER_{bV} and BER_{aV} for 100 test points in the coverage are measured, investigated and analyzed. The result shows 99% of the test point received a good DVB-T signal quality (reception possible).

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CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

In recent years there is a worldwide trend where the transition from analog to DTV (Digital Television) happen. DTV can be transmitted via cable, satellite, and terrestrial broadcasting. Among them, DTTB (Digital Terrestrial Television Broadcasting) has attracted more and adopted in most countries due to its flexibility to both stationary and mobile applications [1]. DVB-T, ATSC (Advanced Television System Committee), and the ISDBT (Integrated Services Digital Broadcasting-Terrestrial) are the main standards for DTTB around the world. Among them, DVB-T is the most adopted terrestrial broadcasting standard in Europe and is also popular in other continents. Currently, this standard has been established in 68 countries, and acquired in 47 more.

According to the National Digitalisation Master Plan, by 2015, Malaysia will fully migrate to digital broadcasting. By the end of that year analog transmissions is expected to switch-off entirely. RTM (Radio Televisyen Malaysia), as the government broadcasting station is given the task to spearhead the digital broadcasting. As a start, in September 2006, RTM has been conducting a pilot project using a standard DVB-T to broadcast DTV services which is adopted in most European countries. At the beginning of this project, about 1,000 respondents in the Klang Valley are involved[2]. During this pilot project, RTM has been broadcasting 4 TV channels and 7 radio channels. Currently, there are 6 channels TV and & 7 channels Radio are broadcasted, using 2 transmitters which are located at Menara Kuala Lumpur