**ABSTRACT** 

Based speech recognition technology is growing rapidly and began to be applied in

almost all areas. With the technology, the sound can be used as a tool to control a device

remotely, replacing other means of remote control. It's including to operate households

electronic devices.

In this thesis, Voice Command application designed to be implemented on the

BeagleBoard for later use on control system of household electronic devices. Input of the

device are in the form of voice commands which are then processed by the system using

the Mel Frequency Cepstral Coefficient (MFCC) to extract the features of each command

and the K-Nearest Neighbor method to classify the features. Then the device will respond

and execute commands given appropriate command.

Testing of implementation into the BeagleBoard was using Simulink program from

Matlab 2013b. The Simulink model system can represent every element that needed in the

simulation program. On the other hand, the BeagleBoard couldn't support the amount of

data that carried by the system in MFCC system. It resulted in the simulation couldn't be

implemented into the BeagleBoard. So that the speech recognition to recognize the

command failed to be implemented.

Keywords: Speech Recognition, BeagleBoard, home controllers, K-Nearest Neighbor

i