CHAPTER 4

CONCLUSIONS AND DISCUSSIONS

4.1 Conclusions and Discussions

It is seen that the determination of frequency response of
a certain class of nonlinear systems by the new graphical method
is simple and a straight forward way than those described in the
literature.[3] The construction of circle curves for various types
of nonlinearities are discussed in chapter 2. The advantage of
this method is that the standard graphs of these circle curves
can be obtained so that the nonlinear frequency response is easily
determined by plotting the transfer function of linear portion
into the typical graph provided in Appendix C. and the output
signal is directly calculated from eqn. (2.11) or eqn. (2.13).

It can be noted that this method has saved quite amount
of plotting time comparing to the method suggested by Levinson.

The jump response phenomena can also predicted from this
graphical method which presented as an application in chapter 3.

The accuracy for the determination of nonlinear response
depends on the approximation of value of the describing function
obtained. However, this new graphical method would be very useful

for a practical engineering sense because the process is convenient to follow without any difficulty.

4.2 Some Suggestion of Future Research

It may be possible to extend or modify this graphical method for the determination of other types of nonlinear systems. Some future research works are suggested as follows.

(a) The determination of the frequency response of the typical nonlinear systems with the nonlinearity occured in the feed-back path.

(b) A graphical method for determination of the amplitude response.