CHAPTER 1

INTRODUCTION

1.1 PROJECT BACKGROUND

The manufacturing process has already undergone significantly processes changes during the past two decades. The main contribution of these changes has been the implementation of numerical control (NC) in manufacturing machines, that has evolve from simple automatic positioning machines to a computerized numerical control functions (CNC). Computerized numerical control (CNC) is a microcomputer that used to perform all the numerical control functions. [1] The computer numerical controlled (CNC) machines have become important element in manufacturing process development.

The technology of the control CNC machining is not only for remote monitoring and adjustments in the production process only, but also the production plans are in line to be achieved. [4] Therefore, in order to improve the performance in machining process, many demands in order to improve the control performance have been presented. [2]

There are demand in order to improve the performance in CNC machining, one of the way is by using wireless controller for CNC machining. The reliability of new wireless CNC technologies, and the public acceptance or wireless systems, manufactures are going change their CNC machine controller to be wireless.
Wireless process control has been a popular topic recently in the field of industrial control. [3] Wireless technologies can support both of the user needs and also provide the cost-effective solutions. This way, wireless is being adopted for many new applications such as connect computers, allow remote monitoring, provides access control and to provide a solution for environments where wires may not be the best solution [8].

1.2 PROBLEM STATEMENT

At present, the rapid development of network and communication has produced some changes. It also brings changes to the intelligent machine that has been formed distributed, and it is an unstoppable in trend of the development of manufacturing technology. [5] The increase in demand for a convenient manufacturing environment, were solved by using wireless controller in CNC machining. [6] The problems that have been encountered by this project are:

1. Disadvantage of wired.

2. Wireless coverage.

3. Difficulty to integrate of different operating system (OS).
1.3 PROJECT OBJECTIVE

The objectives of this project are:

1. Design and develop a wireless controller for CNC machining.
2. Verify the function ability of the wireless controller in CNC machining.

1.4 SCOPE OF PROJECT

1. Design a wireless controller system for CNC machine using Remote Desktop.
2. Wireless controller is for windows based CNC machine only.
3. Testing and verify the wireless controller for CNC machining setup.