**Introduction**

The use of laser to draw some pattern has already been in existence in many places; for example, concerts, fireworks, even in some festivals. In this project, we use the mechanism and technology of Laser Show to build a new laser graphing machine, Laser Image Projector, which has higher contrast and always on focus image.

**Aims and Objectives**

The aim of this project is to build a 320 x 180 resolution with 24-bit color laser projector that can project an image. The image projector uses laser as light source combined with computer controlled both lenses and mirrors to project an image on a screen. The User Interface can be installed on different platform.

**Product Interface**

The User Interface of Laser Projector platform can run on PC (x86) or embedded system (ARM). It is developed by C++ with Qt library for GUI on the Linux OS and this platform provides a set of button to users to operate the laser projector

Functions:
- Select Images
- Send Images
- Screen Capturing

**Methodology**

The Scanning Method of Laser Projector is Interlaced Display Method which can reduce the speed requirement of mirrors and controller.

**Driver**

The Laser Driver is made by n-MOSFET (IRF7821) operate under 12V and Op-amp to provide current feedback control and high switching frequency. The design is tested under simulation software before use. The DAC is made by DAC8831 which has SPI interface with 16-Bit Resolution. It provides a signal to the mirror driver and controls the position of mirror.

**Scanning Projection Module**

A platform, which can project an image, is made by combining three color Lasers, combiner optics and Galvo Motor.

**Result and Conclusion**

In this project, we receive image data from User Interface, process data by a controller and drive the scanning projection module. Finally, a picture is displayed on a screen with 320 x 180 (16:9) resolutions.