

Selected Readings in
**COMPUTING AND
TELECOMMUNICATIONS**

Editors
Mira Kartiwi
Teddy Surya Gunawan
Aisha Hassan Abdalla Hashim



IIUM Press
INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA

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Published by:
IIUM Press
International Islamic University Malaysia

First Edition, 2011
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Perpustakaan Negara Malaysia

Cataloguing-in-Publication Data

Mira Kartiwi, Teddy Surya Gunawan, Aisha Hassan Abdalla Hashim:
Selected Readings in Computing and Telecommunications

ISBN: 978-967-0225-81-4

Member of Majlis Penerbitan Ilmiah Malaysia – MAPIM
(Malaysian Scholarly Publishing Council)

Printed by:
IIUM PRINTING SDN. BHD.
No. 1, Jalan Industri Batu Caves 1/3
Taman Perindustrian Batu Caves
Batu Caves Centre Point
68100 Batu Caves
Selangor Darul Ehsan

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17. SPHERICAL POV LED DISPLAY USING PIC 16F628

Teddy Surya Gunawan and Muhammad bin Ahmad

ABSTRACT

This report describes the design of an LED display that implements POV concept, by which an LED is mechanically spun and illuminated in the air to create image/animation that seems floating. The POV effect makes the series of on-off LED seems to appear as a still line/image. To create desired image/ animation, the display must able to switch on or off the LED at precise time and correct position. The design in this project looks into different approach of applying POV concept. Common design uses an LED per vertical pixel needed, meaning if a display with height of 32 pixels will need 32 LEDs. Thus this project provides means to define the number of pixel not by the number of LEDs, but by the rate of which a single LED changes state. An alternative design of POV LED display, which is wand POV LED display (wand LED) is constructed. The concepts and backgrounds discussed in this report by keeping in mind that reader have basic knowledge in programming and electronics.

17.1 INTRODUCTION

Day by day there are increasing number of hobbyist implementing POV concept to make attractive displays, one of is the POV LED display. The most popular task for POV LED display is to display clock, otherwise known as propeller clock, where the LED spins circularly (like a propeller) creating the image of an analog clock or spins cylindrically to create the image of digital clock. Others include displaying welcoming message i.e. "WELCOME", advertisements and cartoons. However, there is a problem with common POV LED display design. The pixel of the vertical or height