Rainbow Clock

User's manual

Document Revision. A

Table of contents

Glossary

1. Microcontroller

An embedded computer integrating a whole range of peripherals in a small package for convenience.

2. Bluetooth

A wireless communication standard permitting short-range exchange of data between electronic devices.

3. Refresh rate

A measure of the number of times an image can be drawn completely over the period of a second; this value is expressed in Hertz. Synonymous to *"FPS"*.

Product overview

1. Description

Rainbow Clock is an unusual timekeeping device characterized by an exotic look and designed with electronics in mind.

2. Capabilities

- Display the current time of the day
- Synchronize itself via a Bluetooth connection
- Alter its color scheme depending on events

3. Quick specs

- Microcontroller: PIC32
- LEDs: 60, RGB type
- Refresh rate: ~10Hz
- Power: xWatt

Basic operation

1. Reading the time of day

   to-do ...

2. Changing the color scheme

   to-do ...

3. Updating the time on the clock

   to-do ...

Advanced operation

1. Synchronizing the clock using Bluetooth

to-do ...

Technical details

1. Block diagram

to-do ...

2. Components required for the project

- 1 *(one)*   PIC32xxxxxx microcontroller.   Ref: xxxxxxx
- 1 *(one)*   strip of 60 RGB LEDS.   Ref: xxxxxxx
- 1 *(one)*   sensitive button BLACK.   Ref: xxxxxxx
- 1 *(one)*   incremental rotary encoder   Ref: 1191733
- 1 *(one)*   20x4 alphanumeric LCD screen   Ref: 2063162
- x *(xxx)*   resistors xΩ Ref: xxxxxxx
    …

Planned features

- ***Display basic weather data and forecast using built-in sensors***

  Data gathering could reveal itself being a nice addition to the project.

Contributions

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Endnotes