

Dual LED – Trēo™ Module

Module Features

- 2 LED Indicators
- RoHS Compliant
- Software Library
- NightShade Trēo™ Compatible
- Breakout Headers

Features

- 2 Indicator LEDs
- 2 Label Spaces

Applications

- Process Control
- Manufacturing
- Portable Devices

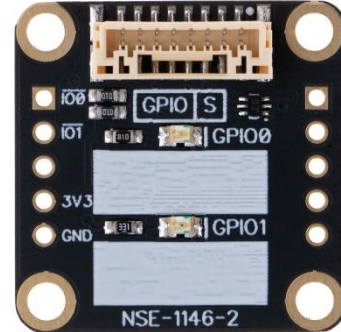
Trēo™ Compatibility

Electrical

Communication	GPIO
Max Current, 3.3V	6mA
Max Current, 5V	0mA

Mechanical

- 25mm x 25mm Outline
- 20mm x 20mm Hole Pattern
- M2.5 Mounting Holes



Description

The Trēo™ Module is a Dual LED module that features two indicator LEDs with places for labeling. This module is a part of the NightShade Treo system, patent pending.

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1 Summary

This module is operated using the NightShade_Treo_DigitalOutput library. The module is operated with the on(), off(), toggle(), and set() methods. The current state can be found with the read() method. Each LED is controlled separately in software.

2 What is Trēo™?

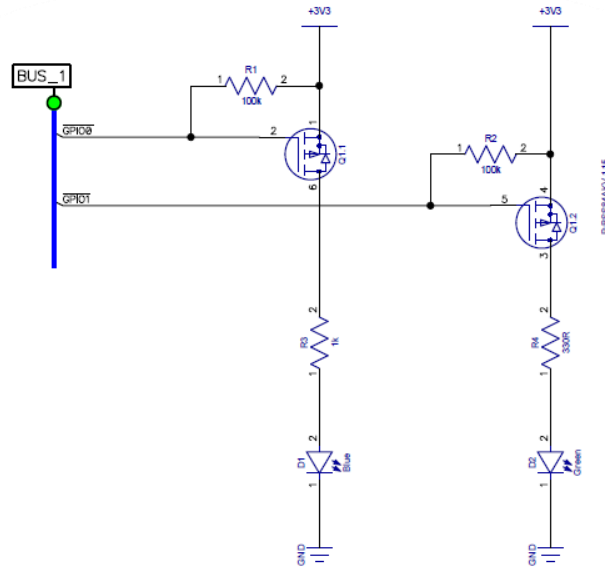
NightShade Trēo is a system of electronic modules that have standardized mechanical, electrical, and software interfaces. It provides you with a way to quickly develop electronic systems around microprocessor development boards. The grid attachment system, common connector/cabling, and extensive cross-platform software library allow you more time to focus on your application. Trēo is supported with detailed documentation and CAD models for each device.

Learn more about Trēo [here](#).

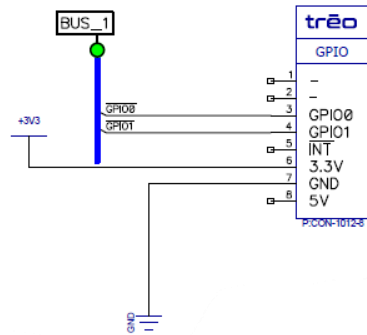
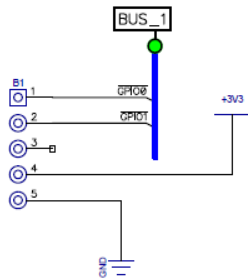
3 Electrical Characteristics

	Minimum	Nominal	Maximum
Voltages			
$V_{i/o}$ (GPIO)	-0.3V	-	3.6V
$V_{3.3V}$	3.1V	3.3V	3.5V
Operating Temperature	-25°C	-	+85°C

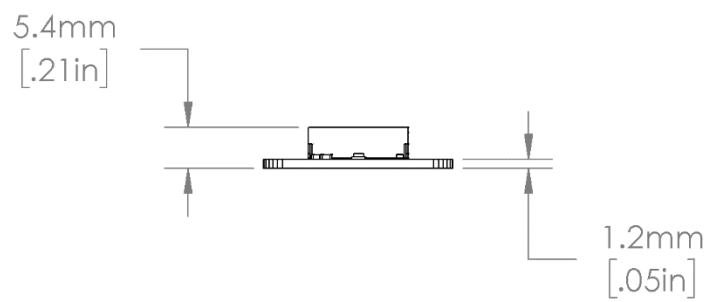
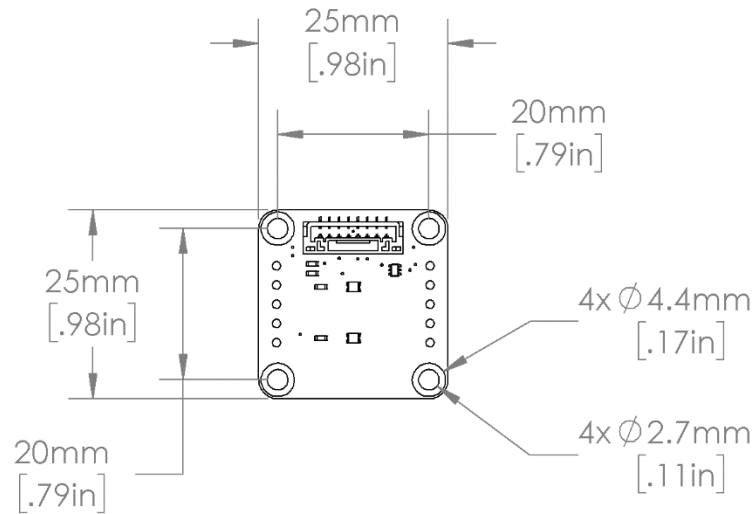
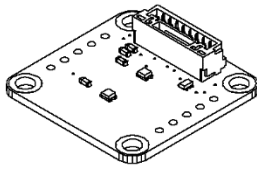
4 Electrical Schematic



Breakout Headers



5 Mechanical Outline



6 Example Arduino Program

```
/*  
DigitalOutput - NightShade_Treo by NightShade Electronics  
  
This sketch demonstrates the functionality of the  
NightShade Trēo digital output modules like LEDs and  
relays.  
  
Created by Aaron D. Liebold  
on February 15, 2021  
  
Links:  
NightShade Trēo System: https://nightshade.net/treo  
  
Distributed under the MIT license  
Copyright (C) 2021 NightShade Electronics  
https://opensource.org/licenses/MIT  
*/  
  
// Include NightShade Treo Library  
#include <NightShade_Treo.h>  
  
// Declare Objects (Dual Output Device - GPIO0: D5, GPIO1: D4)  
NightShade_Treo_DigitalOutput out0(5);  
NightShade_Treo_DigitalOutput out1(4);  
  
void setup() {  
  
}  
  
void loop() {  
  out0.on();  
  delay(500);  
  out0.off();  
  delay(500);  
  out1.on();  
  delay(500);  
  out1.off();  
  delay(500);  
}
```



7 Library Overview (C++ & Python)

C++ Class

```
NightShade_Treo_DigitalOutput <classObject>();
```

Python Module

```
<classObject> = NightShade_Treo.DigitalOutput()
```

7.1 Constructors

NightShade_Treo_DigitalOutput(int gpioPin)

Creates a DigitalOutput object.

Arguments:

gpioPin Integer of the GPIO pin

Returns:

Nothing

7.2 Methods

void on()

Turns the GPIO output to the ON state.

Arguments:

None

Returns:

Error 0 = Success

void off()

Turns the GPIO output to the OFF state.

Arguments:

None

Returns:

Error 0 = Success

