

# Tiva TM4C1294NCPT Traffic Light Controller Testing Document

This document describes the testing procedure of the software. Refer to: 1. Requirements 2. Architecture and Design

For software details.

## Wiring Table

- MR - Main Road
- SR - Side Road
- G - Green
- Y - Yellow
- R - Red

LED or Button	uC pin	LabJack pin
MR Car G	K7	EIO-7
MR Car Y	K6	EIO-6
MR Car R	K5	EIO-5
SR Car G	K2	EIO-2
SR Car Y	K1	EIO-1
SR Car R	K0	EIO-0
MR Ped G	L5	FIO-7
MR Ped R	L4	FIO-6
SR Ped G	L1	FIO-5
SR Ped R	L0	FIO-4
Mode Change	M0	CIO-0
MR Ped Button	M1	CIO-1
SR Ped Button	M2	CIO-2
Car Sensor	M3	CIO-3

## Tests:

Button tests are done, by pressing the button before beginning the test.

- Button 1: Main Pedestrian button
- Button 2: Side Pedestrian button
- Button 3: Car Sensor

In Total There will be 12 Tests, 4 button press cases for each of 3 operating modes:

Test Name	Test Usage	Requirement
Standard	To check the operation of all LEDs.	RE1, RE4, RE5, RE6

Test Name	Test Usage	Requirement
Standard Button 1	The button press should alter LED operation.	RE2, RE7, RE8
Standard Button 2	The button press should alter LED operation.	RE2, RE7, RE8
Standard Button 3	Button press should be ignored .	RE2
Rush	To check the operation of all LEDs.	RE1, RE3, RE4, RE5, RE9
Rush Button 1	Button press should be ignored.	RE2, RE10
Rush Button 2	Button press should loop the operation 1 cycle.	RE2, RE11
Rush Button 3	Button press should loop the operation 1 cycle.	RE2, RE7, RE11
Night	To check the operation of all LEDs.	RE1, RE3, RE4, RE5, RE12, RE13
Night Button 1	Button press should interrupt the blinking.	RE2, RE14
Night Button 2	Button press should interrupt the blinking.	RE2, RE14
Night Button 3	Button press should be ignored.	RE2

#### Test Data:

The data of the tests can be found at: Test Data

#### Test Results:

The results of the tests can be found at: Test Results

#### Interpretation of the tests:

While almost everything has worked as intended, there is a problem with the main pedestrian button. Throughout all the tests directly involving this button, it has not shown any changes to the behaviour of the operation. This a bug in the software.

Test Status:

Test Name	Test Status
Standard	Passed
Standard Button 1	Failed
Standard Button 2	Passed

Test Name	Test Status
Standard Button 3	Passed
Rush	Passed
Rush Button 1	Passed
Rush Button 2	Passed
Rush Button 3	Passed
Night	Passed
Night Button 1	Failed
Night Button 2	Passed
Night Button 3	Passed