

Revision History

Rev 1.0

Based on IST-A21 Lighting Demo Board Reference Design

Rev 2.0

Debug Header, Simplicity Header, and Mini-Simplicity Header location modified.  
Debug header "Target Vdd" pin connected to 3v3

Rev 3.0

Added Giant Gecko Debugger for interface between USB and EFR.  
Mini-Simplicity Header location modified to avoid Rubber Feet  
USB connector made through hole  
I2C lines pulled up  
Silk screen modified to add more information  
All test points except PWM ones made Surface Mount  
6 PWM capability, with 5 going to LEDs and 1 being used for network status LED  
Switch used for turning On/Off network status LEDs  
Removed bottom power connectors for Wooden Demo Board  
Added PCB slot for LED diffuser

Rev 4.0


Added serial connections to Giant Gecko  
Power nets connected differently to account for which devices need to be always powered.

Rev 5.0

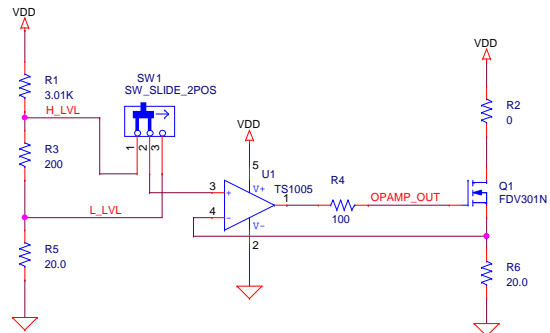
EEPROM address set to 000.  
GPIO (F13) test point moved further away from the switch.  
Removed Giant Gecko debugger and associated components from BOM



SILICON LABS  
IST-A0050 REV 5.0

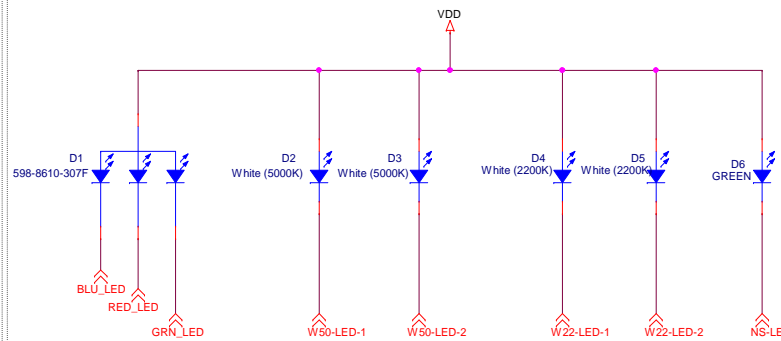
		400 W Cesar Chavez Austin, TX 78701	
SILICON LABS			
Size		Title	
B		Revision History	
Part Number		Document Number	Rev
		IST-A0050	5.0
Date:	Monday, September 19, 2016		Sheet 1 of 6

## LED Brightness Selection



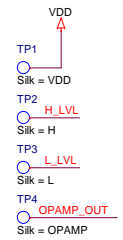
OPAMP\_OUT signal is input to transistors in series with LEDs, to control current through LEDs

## Lighting Demo LEDs

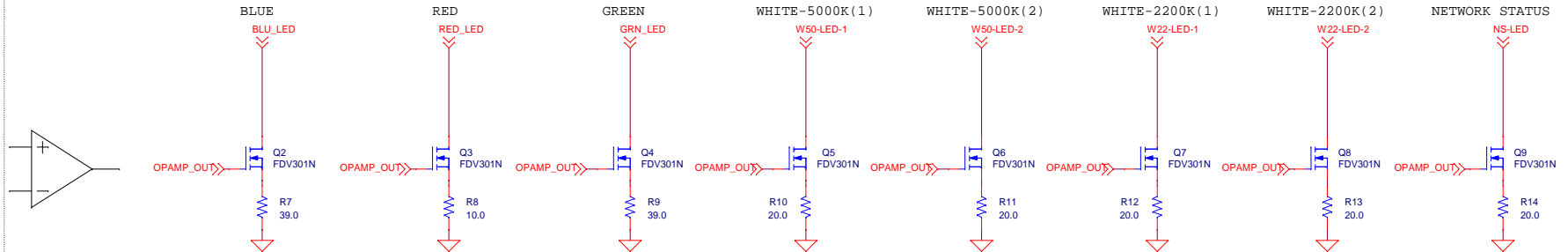


Each LED consumes either 1mA or 10mA of current, depending on the brightness selection.

## Page Test Points

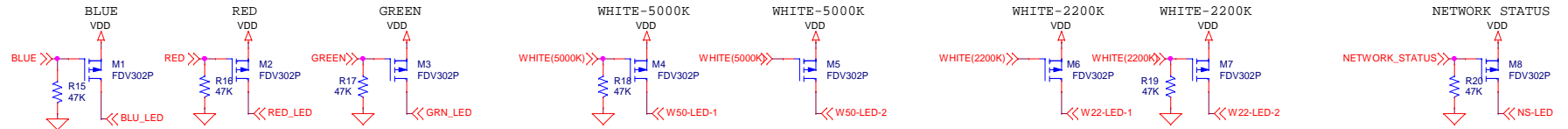


## LED Brightness Control using Current Mirroring

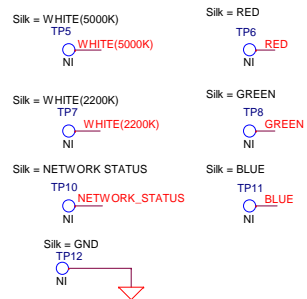


		400 W Cesar Chavez Austin, TX 78701	
Size	Title		
B	RGB LED/EEPROM		
Part Number	Document Number	Rev	
	IST-A0050	5.0	
Date:	Friday, November 17, 2017	Sheet	2 of 6

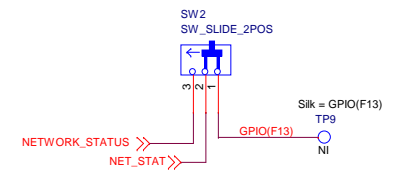
# Lighting Demo LEDs - PWM Controls



## Page Test Points

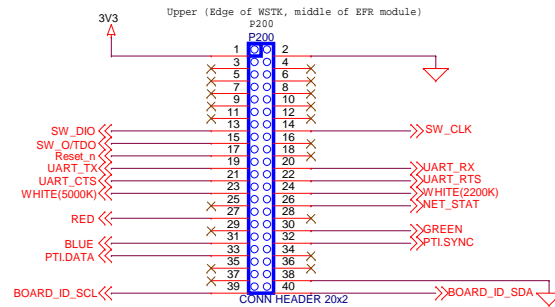
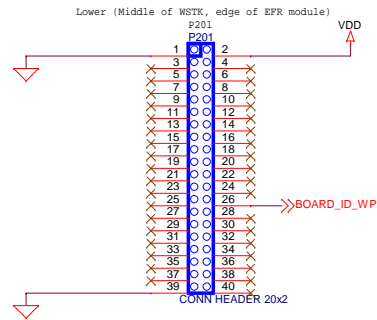


## Network Status LED Power/Mode

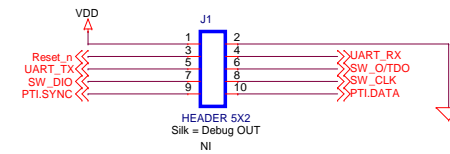


## Output Connectors

### Module to LDB (Header)



### Mini-Simplicity Output Header Placed between two 40-pin headers



backside bumpops



## Diffuser and Plastic

PL1



Diffuser Mount

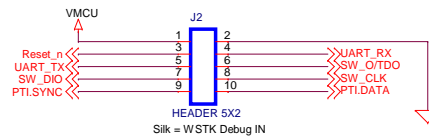
DF1



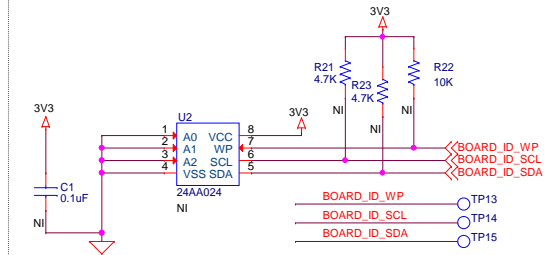
Diffuser

## Input Connectors

### Mini-Simplicity Input Header

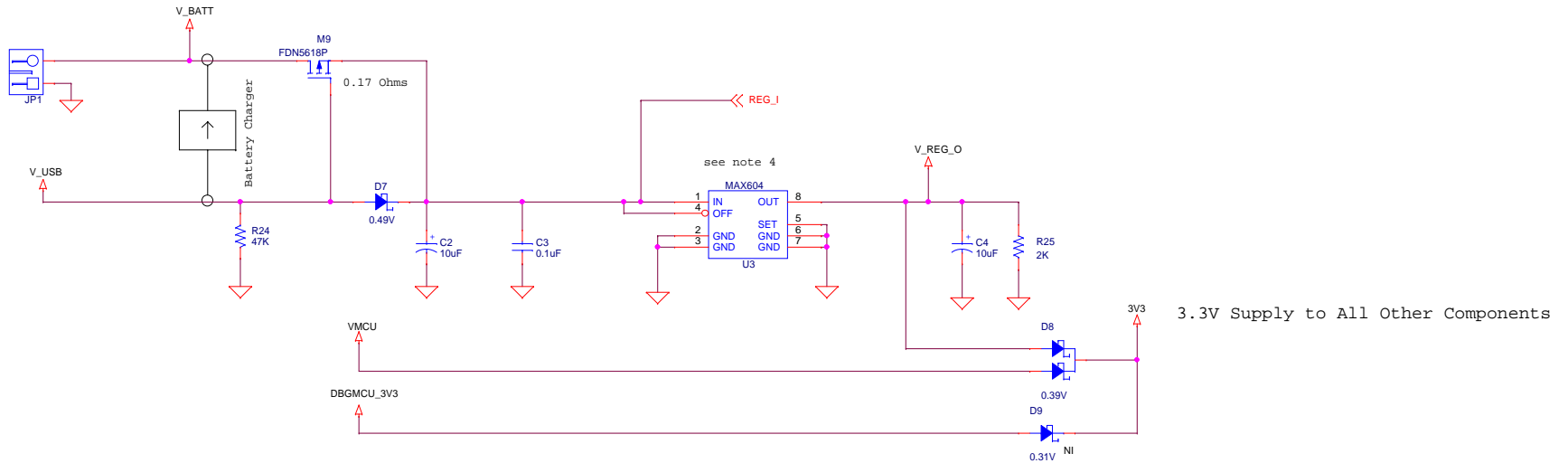


### BOARD ID EEPROM (not populated)

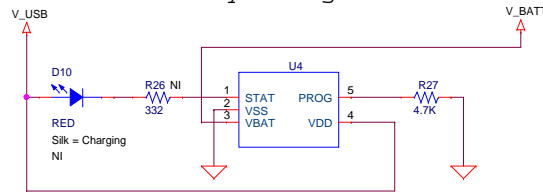


400 W Cesar Chavez Austin, TX 78701	
Size	Title
B	Battery Management, Bypassing
Part Number	Document Number
	IST-A0050
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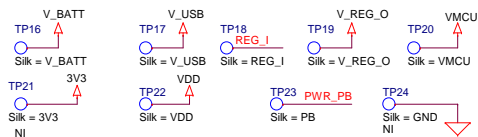
## Lighting Board Input Power Options



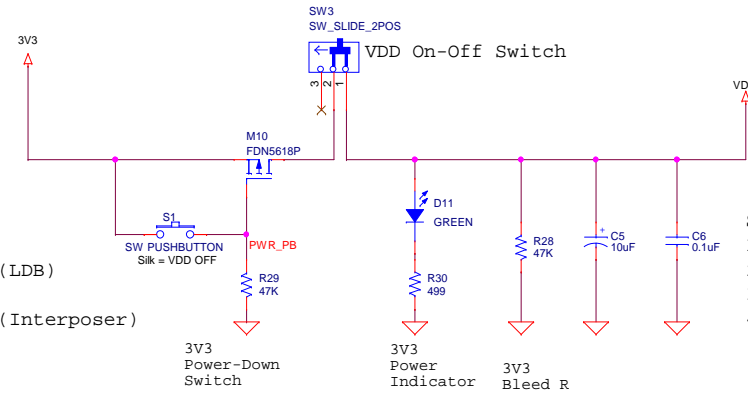
## Battery Charger



## Page Test Points



## Lighting Board Power Selection




### Always Powered:

1. Giant Gecko MCU
2. Board ID EEPROM (LDB)
3. SPI Flash
4. Board ID EEPROM (Interposer)

### Selected by Switch:

1. MCU Module
2. All LEDs
3. 10-pin MSC Output
4. Op-Amp

		400 W Cesar Chavez Austin, TX 78701	
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B	Power Selection		
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micro-USB Connector

