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## LED Display Power Board

Marquette University Senior Design 2018/2019, Group E44  
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Note: If component footprints, tolerances, and power ratings are hidden, components are:  
0402 case size, 1% tolerance, 1/16W power rating

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Sheet: /  
File: LTC7851\_Demo.sch

**Title: Electronic Display Power Board**

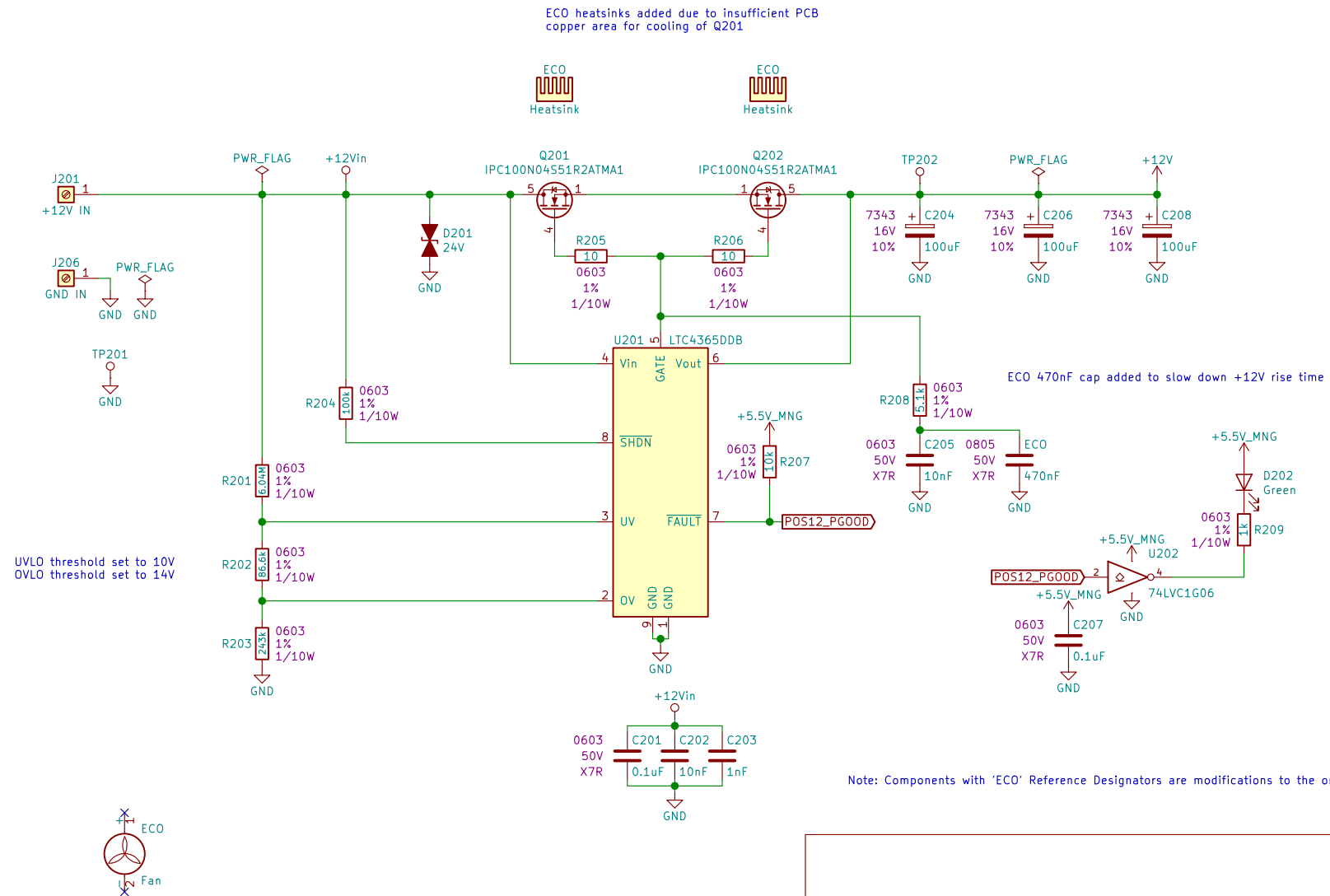
Size: A Date: 2018-11-28

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Rev: A

Id: 1/14

## 02. Power Input



Note: Components with 'ECO' Reference Designators are modifications to the original design

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Sheet: /Power Input/  
File: Power\_Input.sch

**Title: Electronic Display Power Board**

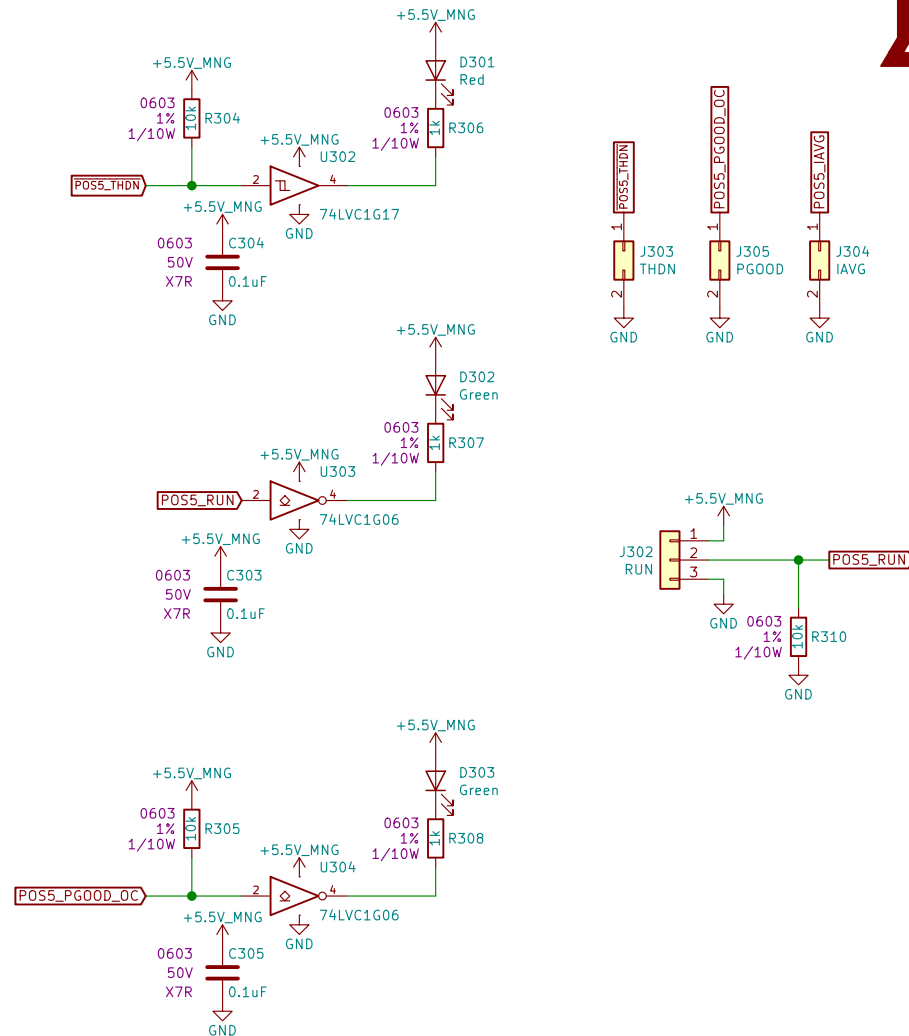
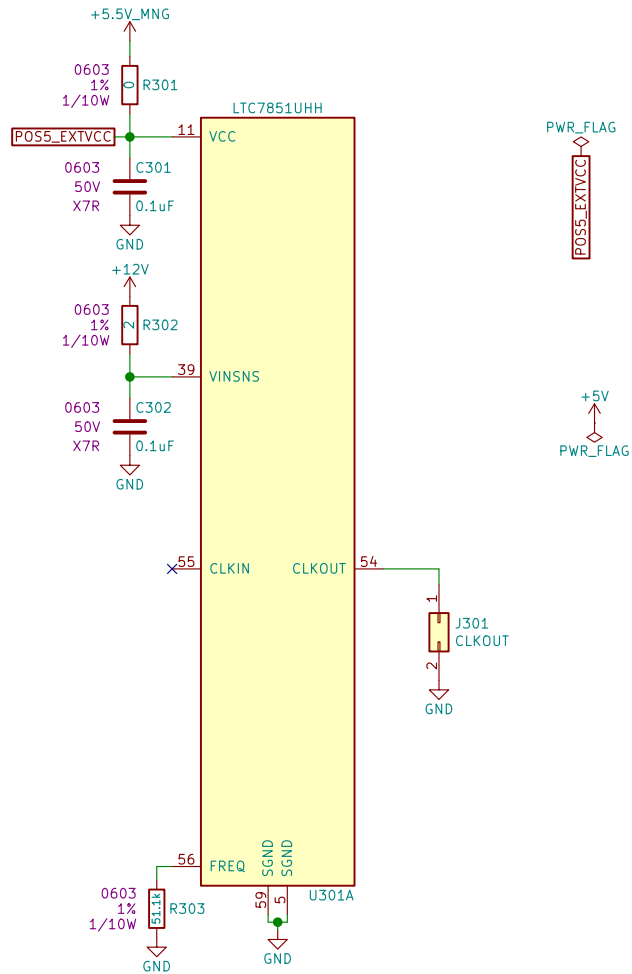
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### 03. +5V Control



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Sheet: /POS5 Control/  
File: POS5\_Control.sch

**Title: Electronic Display Power Board**

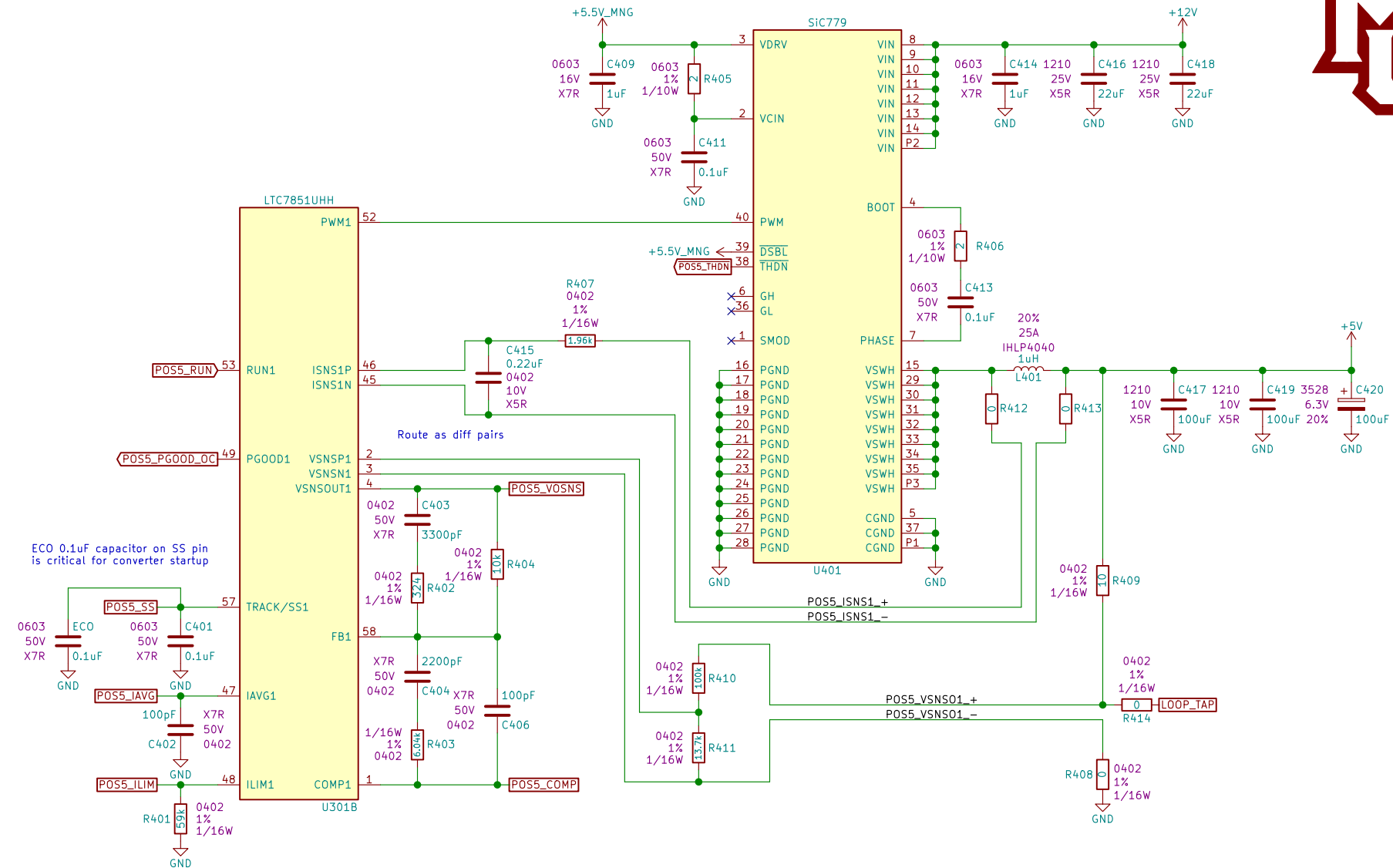
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Rev: A

Id: 3/14

# 04. +5V Phase 1



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Sheet: /POS5 Phase 1/

File: POS5\_Phase\_1.sch

Title: Electronic Display Power Board

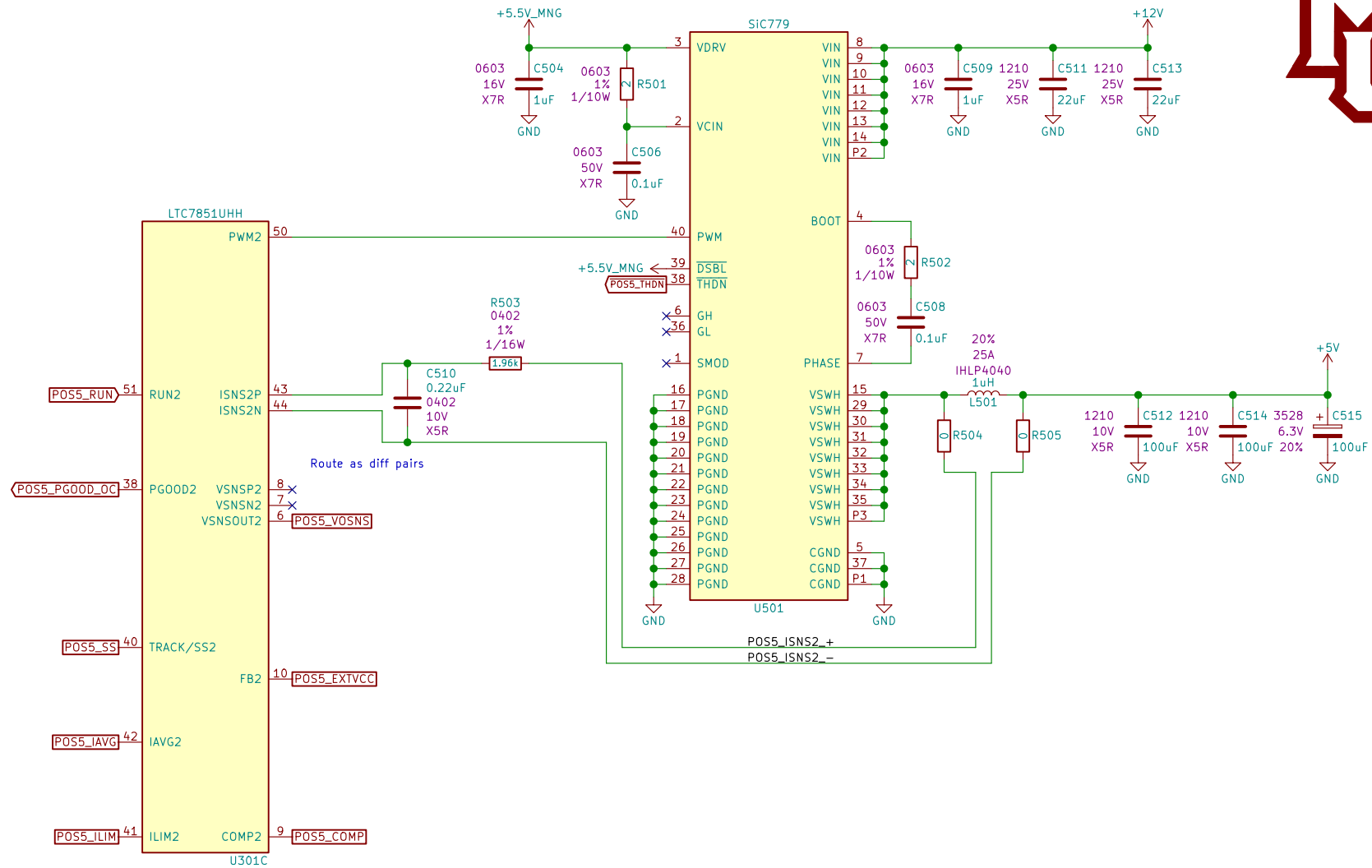
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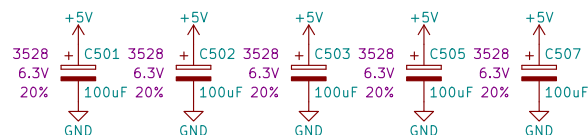
Rev: A

Id: 4/14

## 05. +5V Phase 2



Do not populate any of the capacitors below:  
C501, C502, C503, C505, C507



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Sheet: /POS5 Phase 2/  
File: POS5\_Phase\_2.sch

**Title: Electronic Display Power Board**

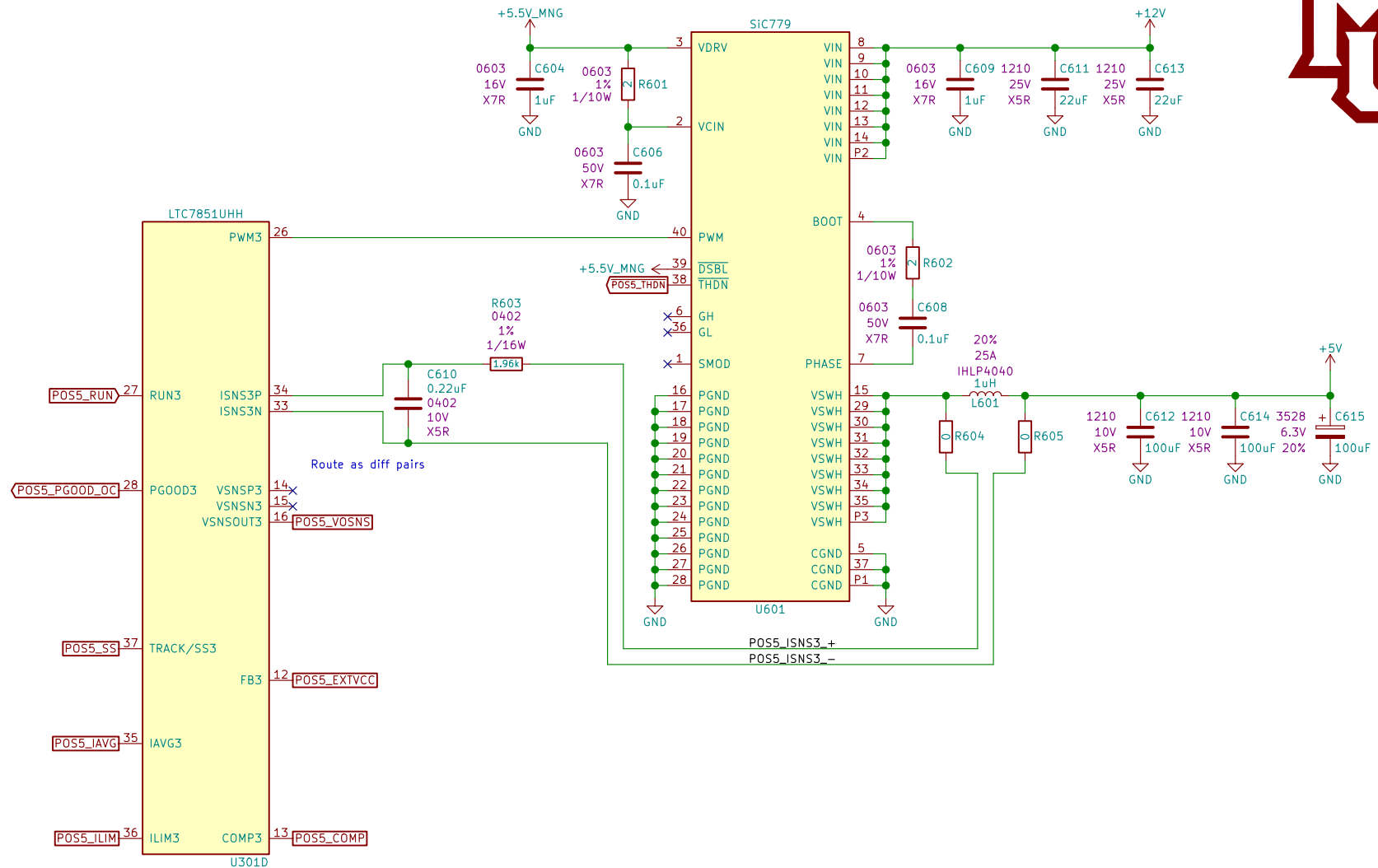
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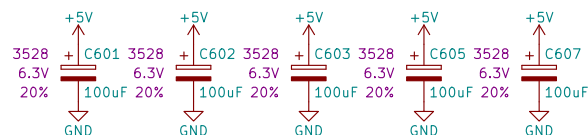
Rev: A

Id: 5/14

## 06. +5V Phase 3



Do not populate any of the capacitors below:  
C601, C602, C603, C605, C607



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Sheet: /POS5 Phase 3/  
File: POS5\_Phase\_3.sch

**Title: Electronic Display Power Board**

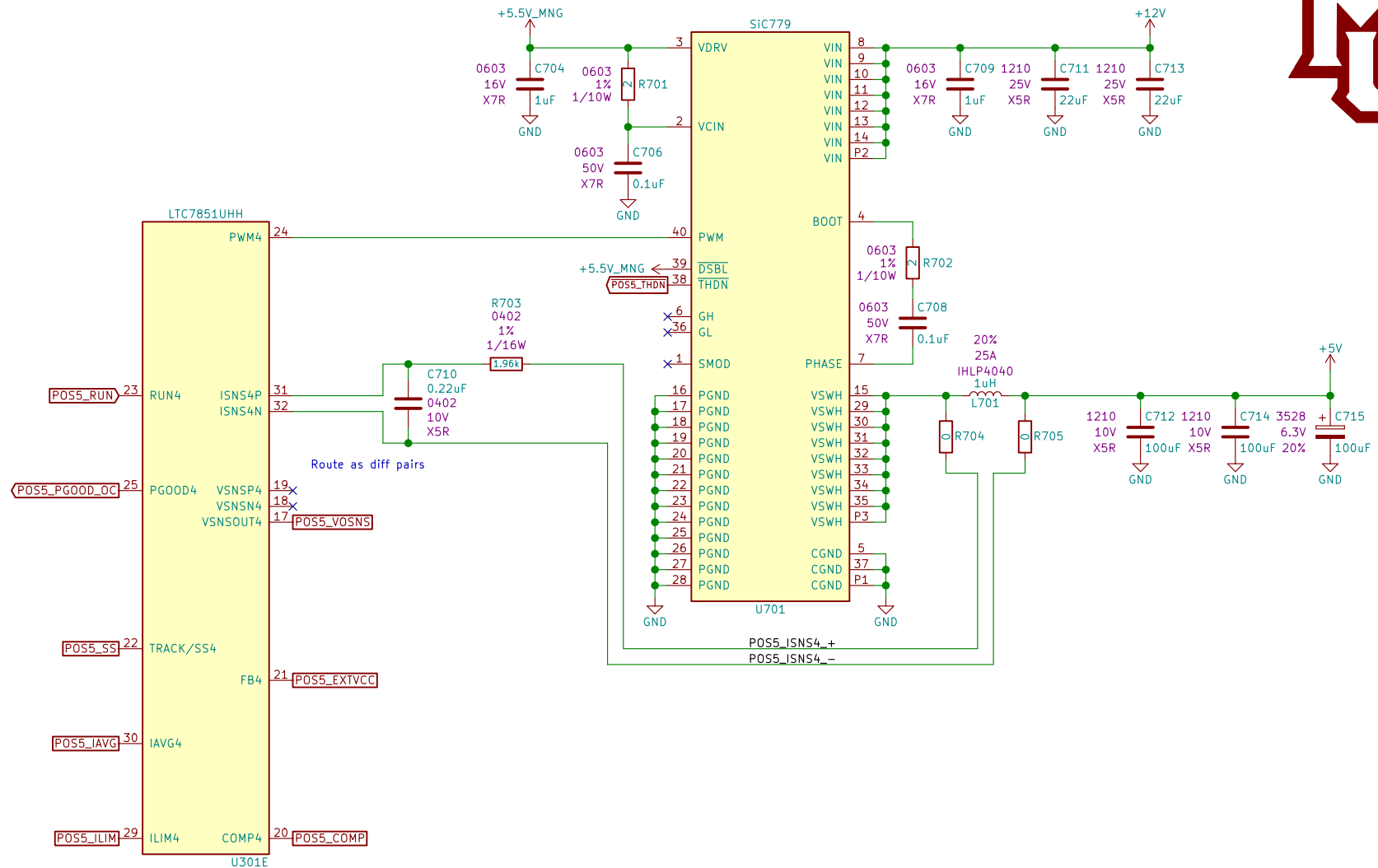
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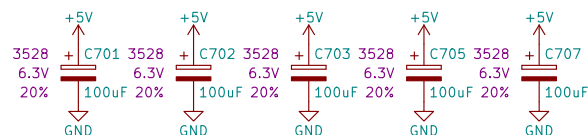
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Id: 6/14

## 07. +5V Phase 4



Do not populate any of the capacitors below:  
C701, C702, C703, C705, C707



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Sheet: /POS5 Phase 4/  
File: POS5\_Phase\_4.sch

**Title: Electronic Display Power Board**

Size: A	Date: 2018-11-28
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Size: A	Date: 2018
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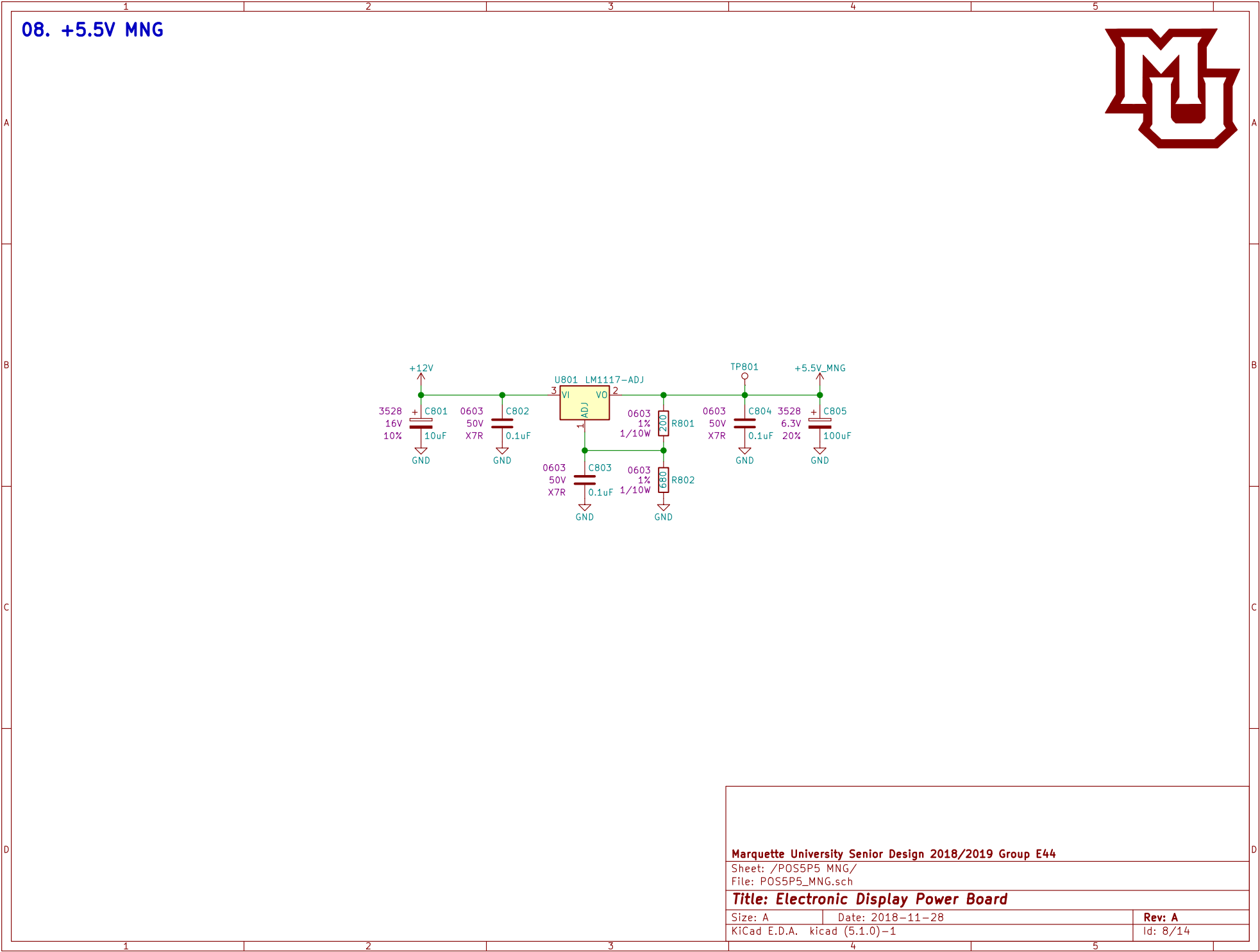
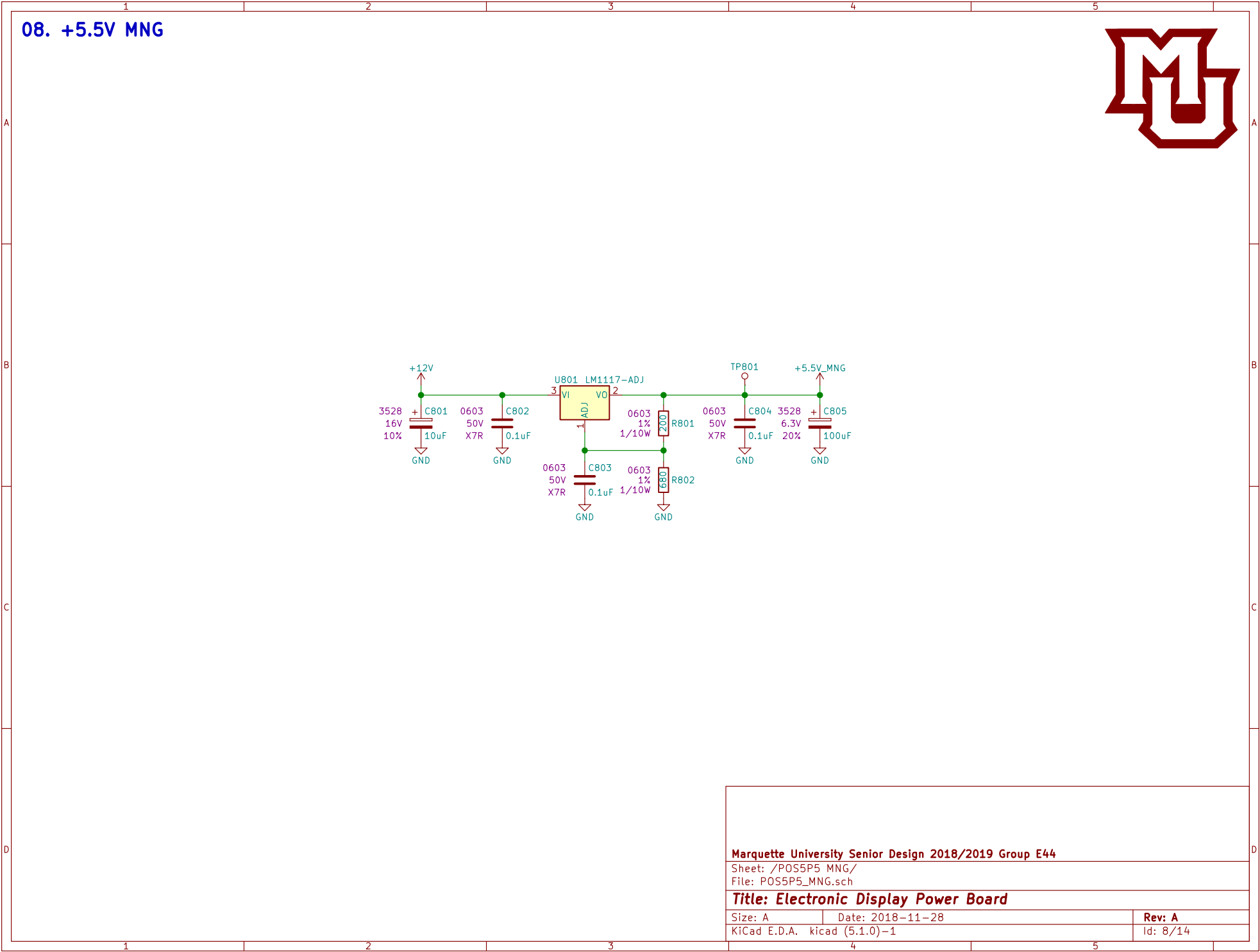
Rev: A

Id: 7/14

08. +5.5V MNG

The schematic diagram illustrates a +5.5V MNG power supply circuit. It begins with a +12V input, which is filtered by a 10uF capacitor (C801) and a 0.1uF capacitor (C802) to ground. The input to the LM1117-ADJ (U801) is connected to the output of C802. The output of U801 is connected to a 200 ohm resistor (R801) and a 0.1uF capacitor (C803) to ground. The output of R801 is connected to a 50 ohm resistor (R802) and a 0.1uF capacitor (C804) to ground. The output of R802 is connected to a 6.3V capacitor (C805) and a 100uF capacitor (C806) to ground. The output of C805 is labeled +5.5V\_MNG.

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Sheet: /POS5P5 MNG/  
File: POS5P5\_MNG.sch  
**Title: Electronic Display Power Board**  
Size: A Date: 2018-11-28 Rev: A  
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Sheet: /POS5P5_MNG/ File: POS5P5_MNG.sch		
<b>Title: Electronic Display Power Board</b>		
Size: A	Date: 2018-11-28	Rev: A
KiCad E.D.A. kicad (5.1.0)-1		Id: 8/14

Sheet: POS5P5\_MNG  
File: POS5P5\_MNG.sch

**Title: Electronic Display Power Board**

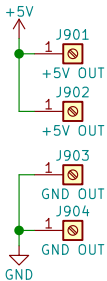
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09. Power Output



Marquette University Senior Design 2018/2019 Group E44		
Sheet: /Power Output/ File: Power_Output.sch		
Title: Electronic Display Power Board		
Size: A	Date: 2018-11-28	Rev: A
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10. Mounting Holes and Mechanical Components



MH1001  
MountingHole



MH1003  
MountingHole



MH1004  
MountingHole



MH1006  
MountingHole



4-40 Screw  
MK1001



4-40 Screw  
MK1009



4-40 Screw  
MK1002



4-40 Screw  
MK1010



4-40 Standoff  
MK1003



4-40 Standoff  
MK1011



4-40 Standoff  
MK1004



4-40 Standoff  
MK1012



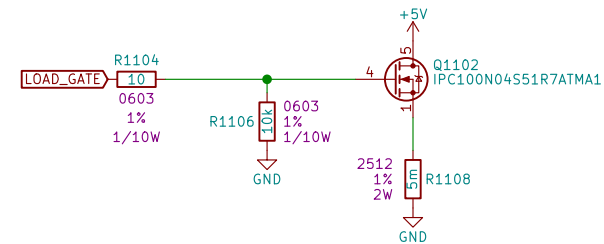
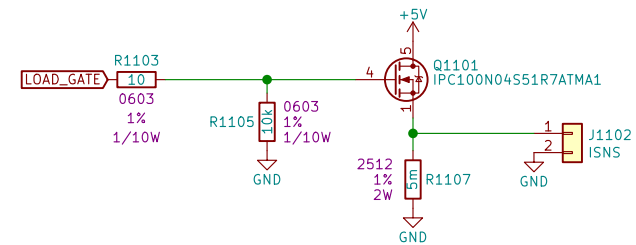
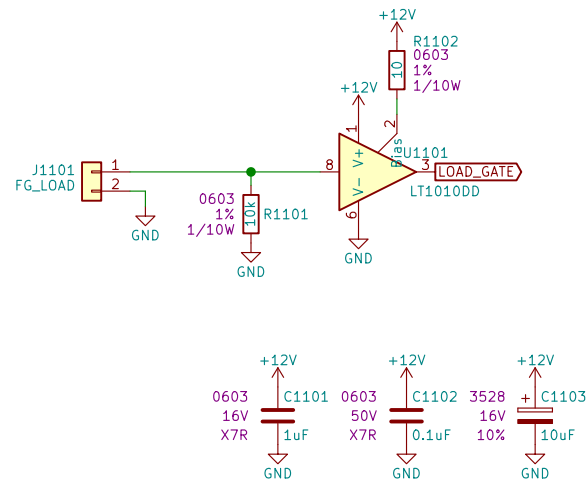
Marquette University Senior Design 2018/2019 Group E44

Sheet: /Mechanical/  
File: Mechanical.sch

Title: Electronic Display Power Board

Size: A	Date: 2018-11-28	Rev: A
KiCad E.D.A. kicad (5.1.0)-1		Id: 10/14

## 11. Active Load Driver and Active Load Bank 1



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Sheet: /Active Load 1/

File: Active\_Load\_1.sch

**Title: Electronic Display Power Board**

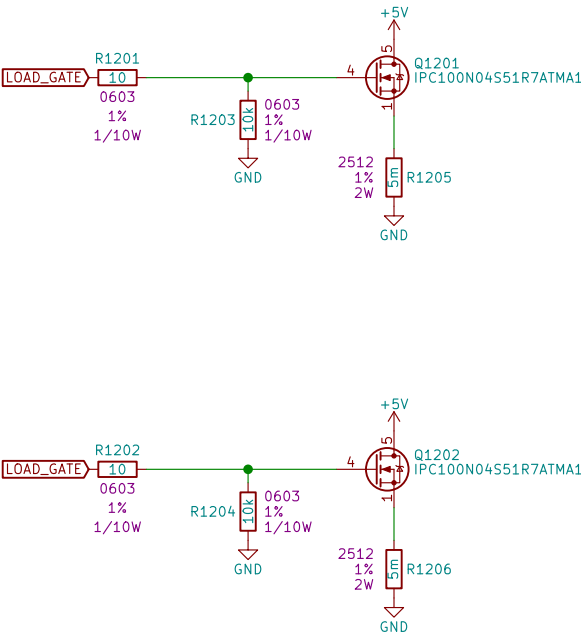
Size: A Date: 2018-11-28

KiCad E.D.A. kicad (5.1.0)-1

Rev: A

Id: 11/14

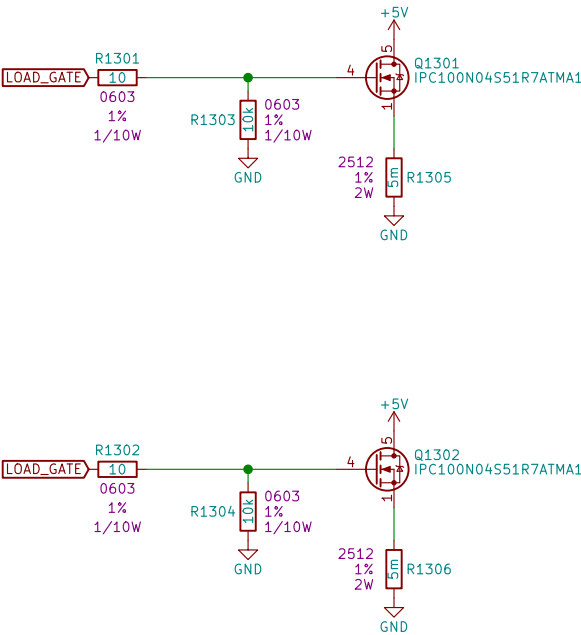
12. Active Load Bank 2



Do not populate any components on this sheet

Marquette University Senior Design 2018/2019 Group E44		
Sheet: /Active Load 2/ File: Active_Load_2.sch		
Title: <b>Electronic Display Power Board</b>		
Size: A	Date: 2018-11-28	Rev: A
KiCad E.D.A. kicad (5.1.0)-1		Id: 12/14

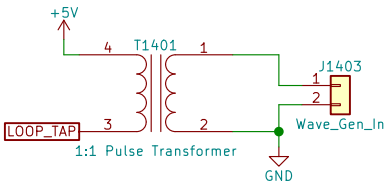
13. Active Load Bank 3



Do not populate any components on this sheet

Marquette University Senior Design 2018/2019 Group E44		
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Title: <b>Electronic Display Power Board</b>		
Size: A	Date: 2018-11-28	Rev: A
KiCad E.D.A. kicad (5.1.0)-1		Id: 13/14

14. Open Loop Transfer Function Test Components



Do not populate any components on this sheet

Marquette University Senior Design 2018/2019 Group E44		
Sheet: /Loop Response/ File: Loop_Response.sch		
Title: Electronic Display Power Board		
Size: A	Date: 2018-11-28	Rev: A
KiCad E.D.A. kicad (5.1.0)-1		Id: 14/14