

IoT Lock - Main board

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Revision history	
Rev. No.	Changes
1.0	Initial release

Title IoT Lock: Title page		
Size A4	Number IoT_L_1.0	Revision 1.0
Date: 31-Jul-17		Sheet 1 of 10
File: C:\Users\...\Title.SchDoc		Drawn By: fmarko

1

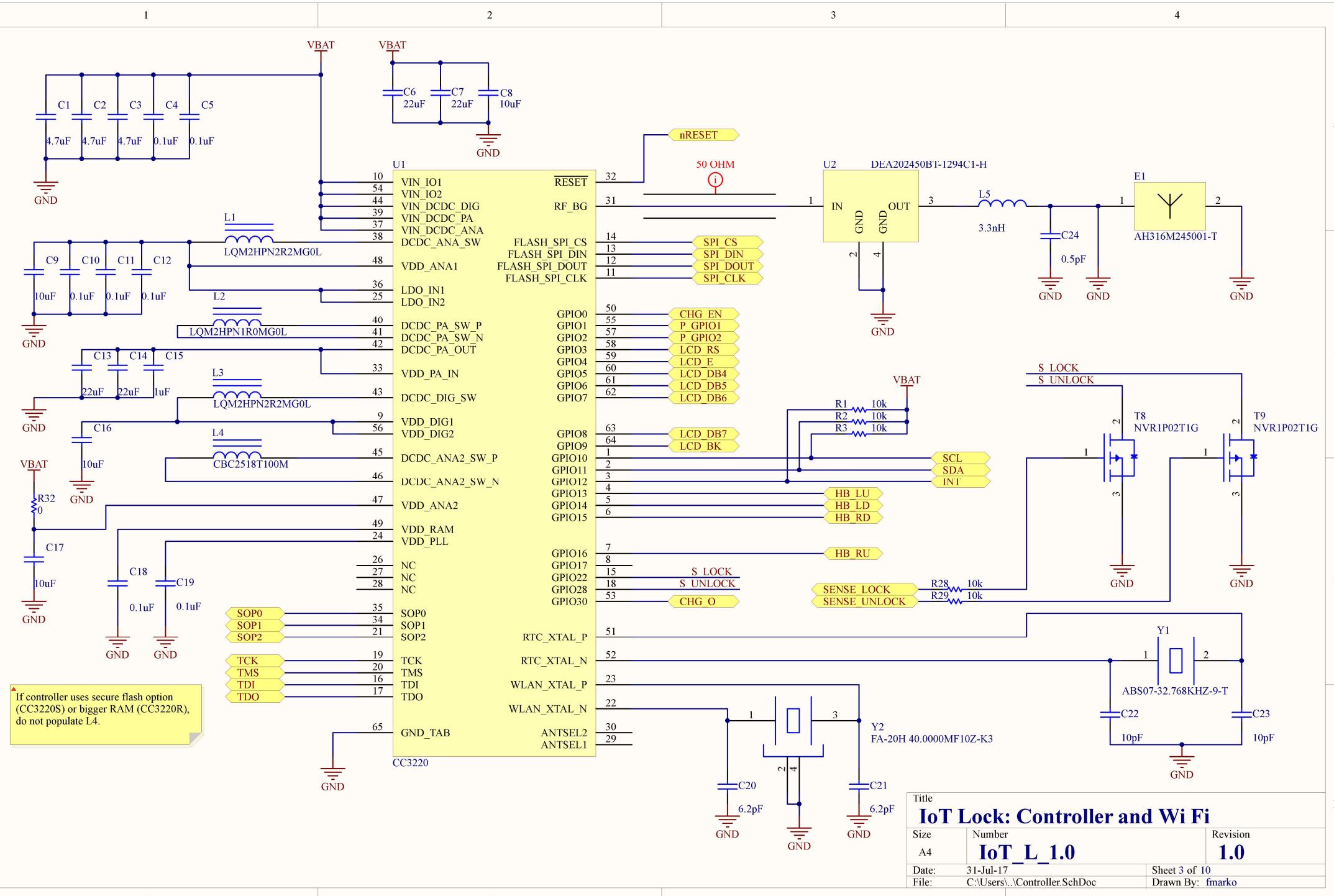
2

3

4

SH7
Connectors.SchDocSH6
Charger.SchDocSH1
Controller.SchDocSH5
Programming interface.SchDocBAT_NTC
BAT+BAT_NTC
BAT+CHG_EN
CHG_OnRESET
P_GPIO1nRESET
P_GPIO1

</div



A

A

B

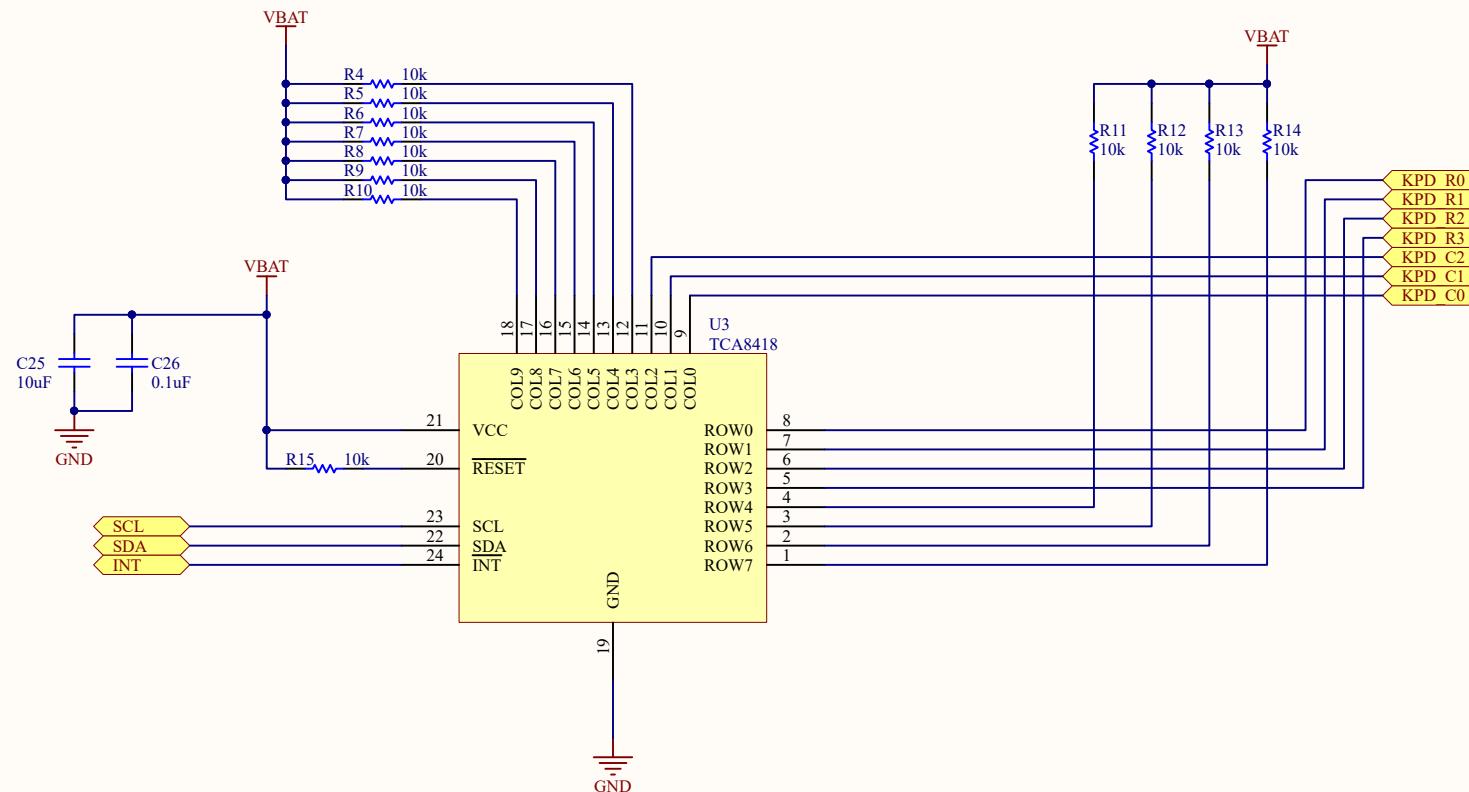
B

C

C

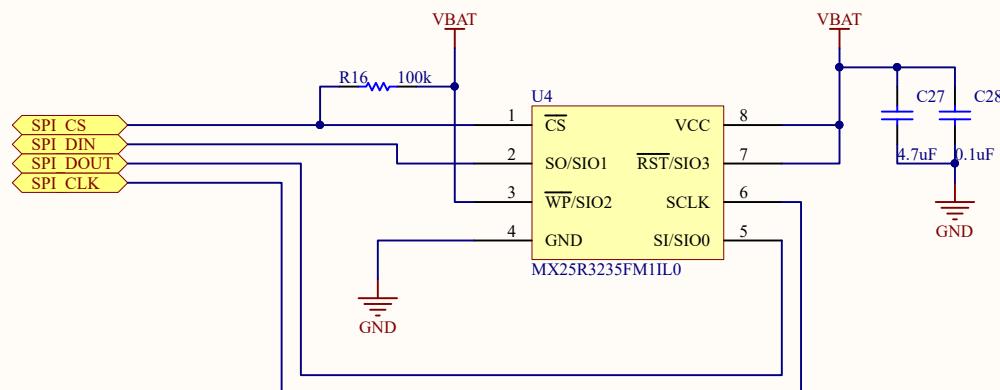
D

D



Title
IoT Lock: Keypad scanner

Size	Number	Revision
A4	IoT_L_1.0	1.0
Date:	31-Jul-17	Sheet 4 of 10
File:	C:\Users\.\Keypad Controller.SchDoc	Drawn By: fmarko



Title IoT Lock: Controller memory		
Size A4	Number IoT_L_1.0	Revision 1.0
Date: 31-Jul-17		Sheet 5 of 10
File: C:\Users\.\Memory.SchDoc		Drawn By: fmarko

A

A

B

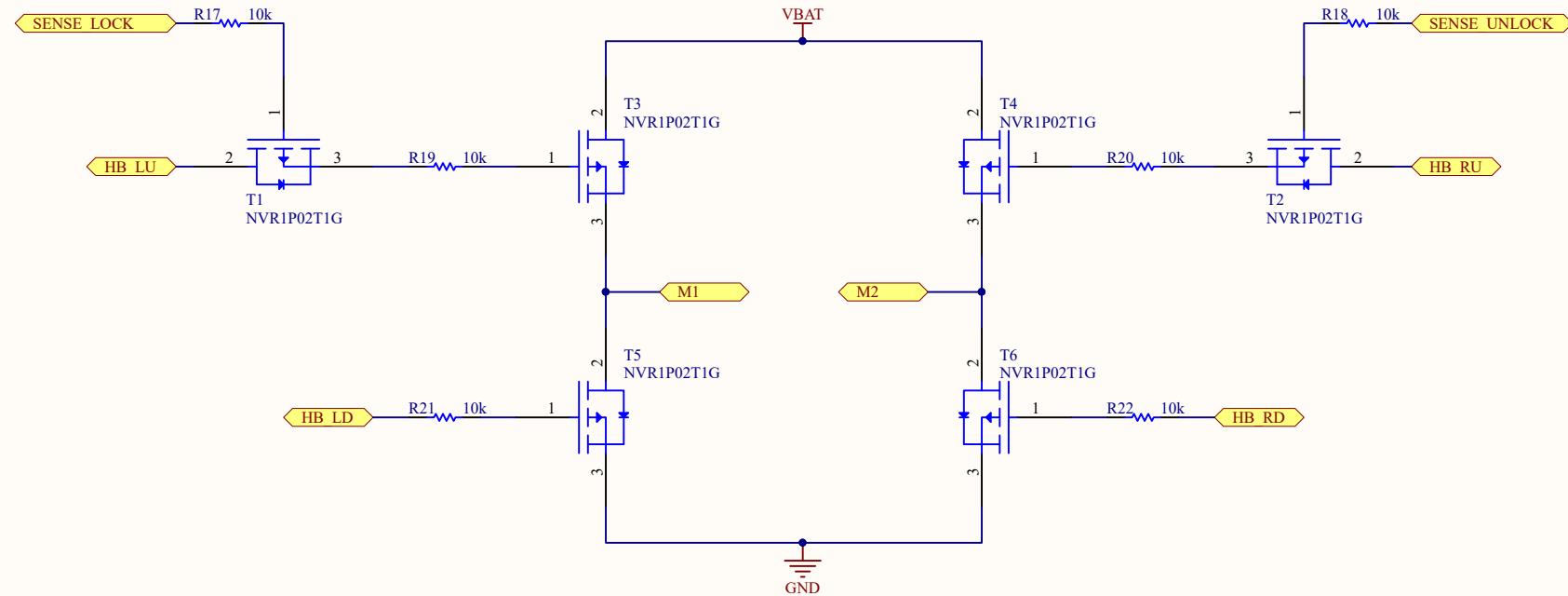
B

C

C

D

D



Title
IoT Lock: Motor driver

Size	Number	Revision
A4	IoT_L_1.0	1.0
Date:	31-Jul-17	Sheet 6 of 10
File:	C:\Users\.\Motor driver.SchDoc	Drawn By: fmarko

A

A

B

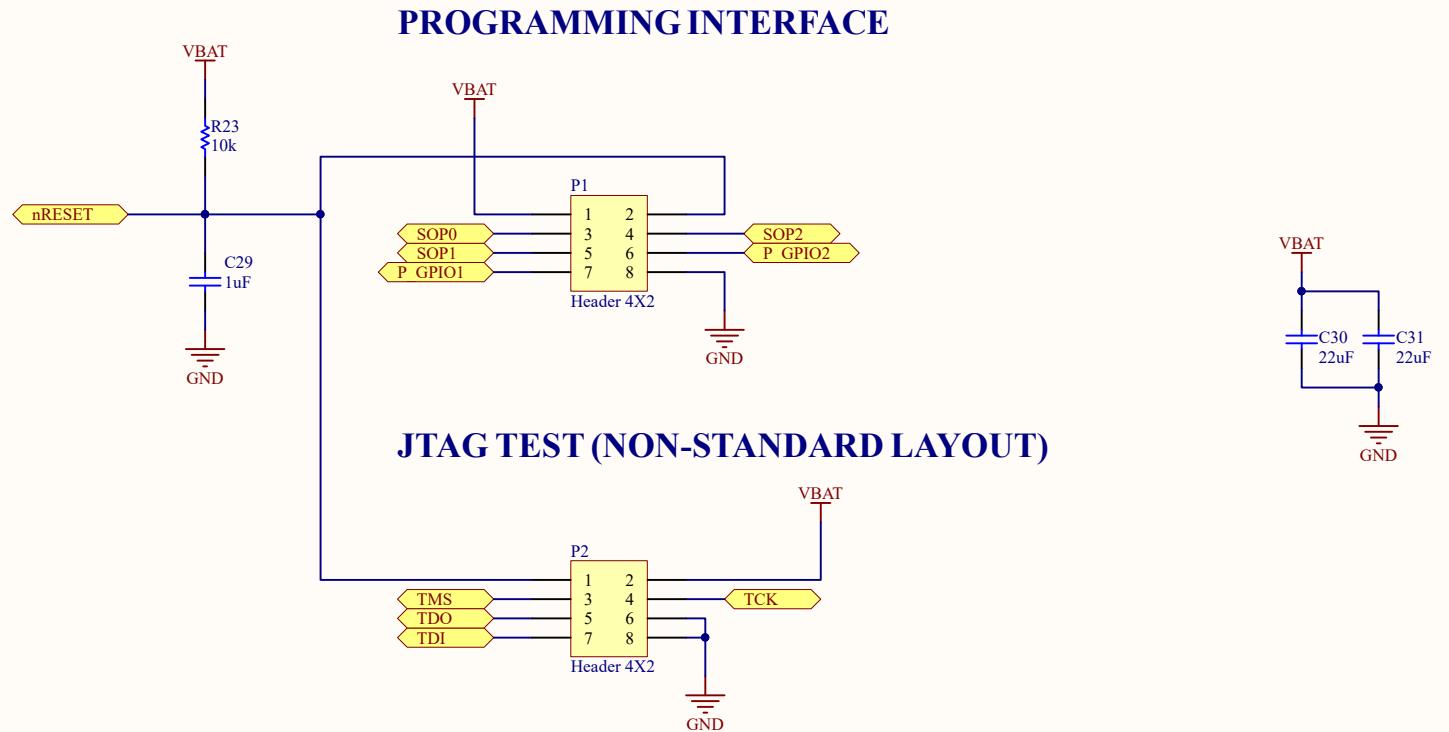
B

C

C

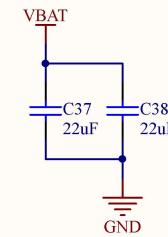
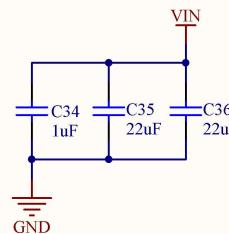
D

D

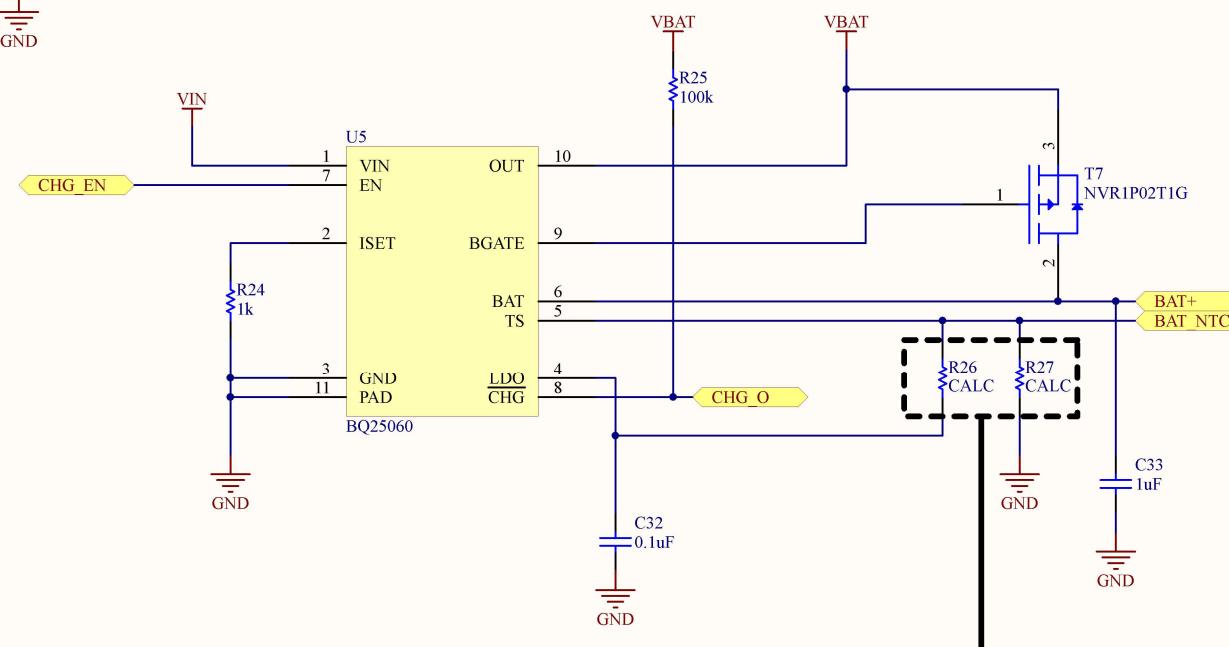


Title IoT Lock: Programming int. & connectors		
Size A4	Number IoT_L_1.0	Revision 1.0
Date: 31-Jul-17		Sheet 7 of 10
File: C:\Users\.\Programming interface.SchDoc	Drawn By: fmarko	

A



B



R26 is calculated by:

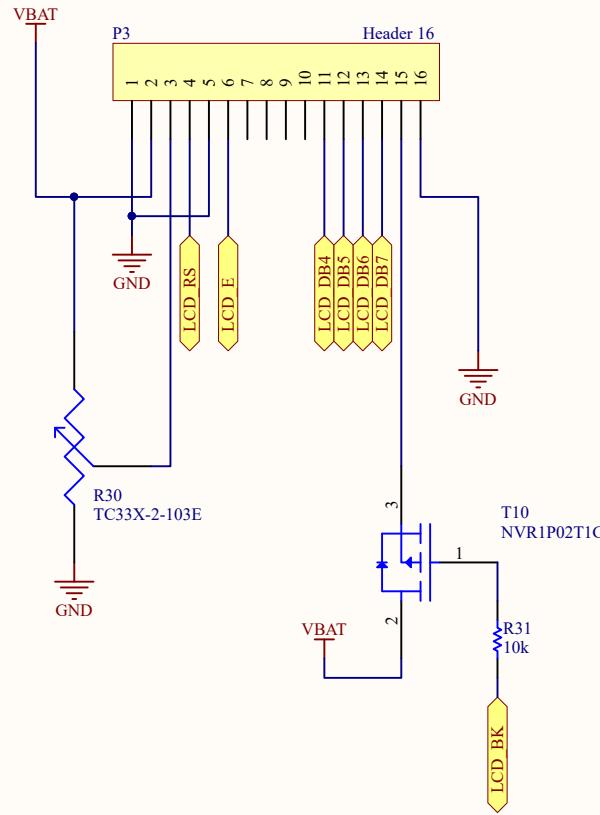
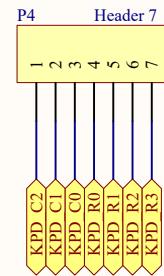
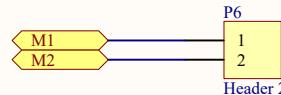
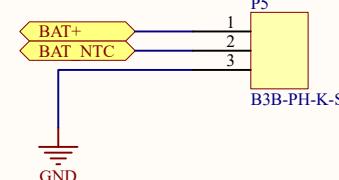
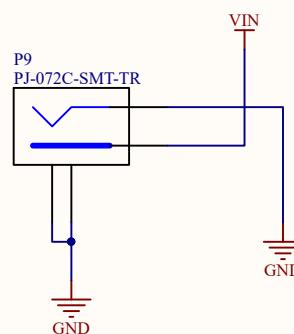
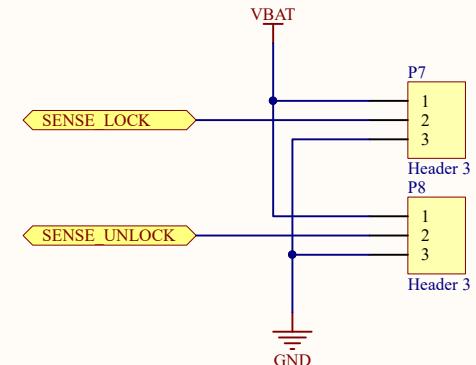
$$-R27 * R(\text{hot}) * (0.125 - 1) / 0.125 * (R27 + R(\text{hot}))$$

R27 is calculated by:

$$-R(\text{hot}) * R(\text{cold}) * (0.125 - 0.250) / R(\text{hot}) * 0.250 * (0.125 - 1) + R(\text{cold}) * 0.125 * (1 - 0.250)$$

Where is:
 R(thot): Battery thermistor resistance at maximum allowed battery temperature (e.g. +70 °C)
 R(tcold): Battery thermistor resistance at minimum allowed battery temperature (e.g. -10°C)

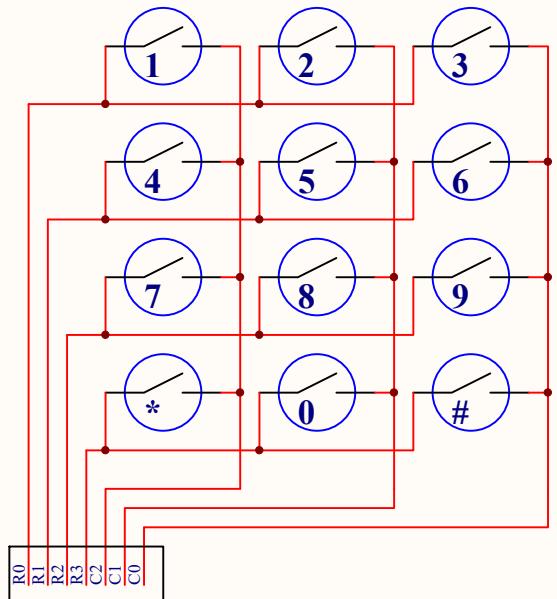
Title		
Size	Number	Revision
A4	IoT_L_1.0	1.0
Date:	31-Jul-17	Sheet 8 of 10
File:	C:\Users...\Charger.SchDoc	Drawn By: fmarko

LCD connector**Keyboard connector****Motor connector****Battery connector****Power connector****Lock sensors connectors**

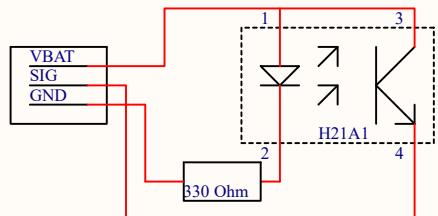
Title
IoT Lock: I/O connectors

Size	Number	Revision
A4	IoT_L_1.0	1.0
Date:	31-Jul-17	Sheet 9 of 10
File:	C:\Users\.\Connectors.SchDoc	Drawn By: fmarko

Keyboard diagram:



Sensor diagram:



Notes:

For connection error elimination, change sensor connector footprints (P7, P8) to one way connecting connectors

Change battery connector footprint after selecting battery
Add R26 and R27 values

Title **IoT Lock: Notes**

Size	Number	Revision
A4	IoT_L_1.0	1.0
Date:	31-Jul-17	Sheet 10 of 10
File:	C:\Users\...\Notes.SchDoc	Drawn By: fmarko