

CHANGE HISTORY			
REV	PAGE/ZONE	DESCRIPTION OF CHANGE	DATE
R01	Alpha	Release	07/20/2016
R02	Production	Release	08/10/2016

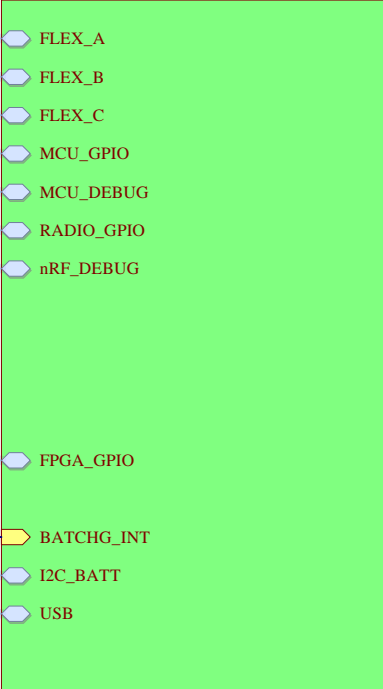
U_RevisionLog
RevisionLog.SchDoc



U_SouthSide
SouthSide.SchDoc



U_CoreModule
CoreModule.SchDoc



Design Notes:

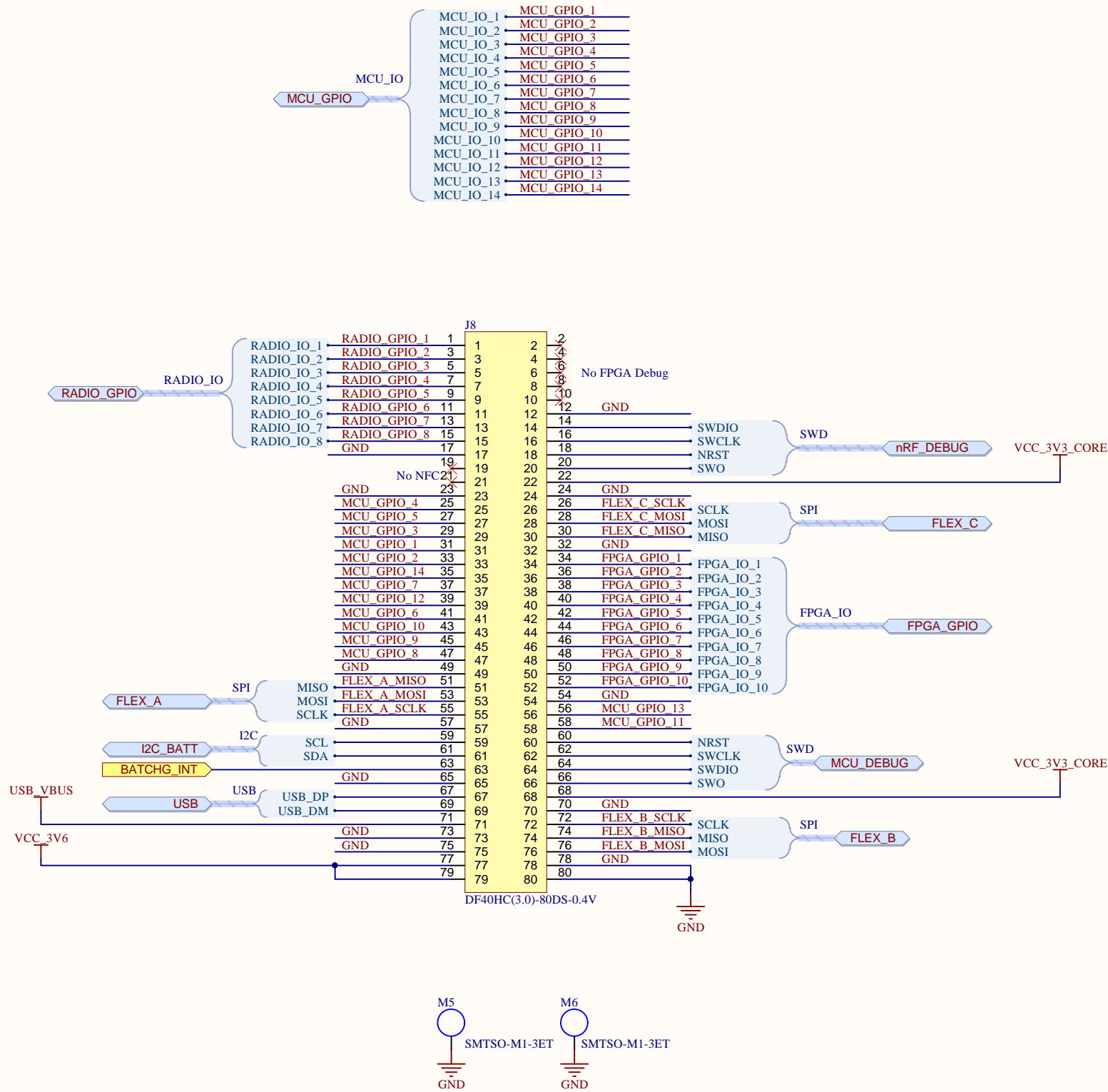
Layout Notes:

SYNAPSE

1511 6th Ave., Suite 400
Seattle, Washington 98101
206.361.0898 |
www.synapse.com

THE INFORMATION CONTAINED IN THIS
DRAWING IS PROPRIETARY AND
RESTRICTED. ANY REPRODUCTION INPART
OR WHOLE WITHOUT THE EXPRESS
WRITTEN PERMISSION OF THE OWNER IS
PROHIBITED.

Project: Ventriloquist	PCBA: EVM Application Board
Sheet Title: Block Diagram	
Drawn by: D. Bruey, M. Ciuffo	
Schematic Part Number: 602-100862	Schematic Revision: 02
Date: 9/19/2016	Sheet: 1 / 7



Design Notes:

Layout Notes:

SYNAPSE

1511 6th Ave., Suite 400
Seattle, Washington 98101
206.381.0898 |
www.synapse.com

PROPRIETARY AND CONFIDENTIAL

THE INFORMATION CONTAINED IN THIS
DRAWING IS PROPRIETARY AND
RESTRICTED. ANY REPRODUCTION INPART
OR WHOLE WITHOUT THE EXPRESS
WRITTEN PERMISSION OF THE OWNER IS
PROHIBITED.

Project: Ventriloquist

PCBA: EVM Application Board

Sheet Title: Core Module

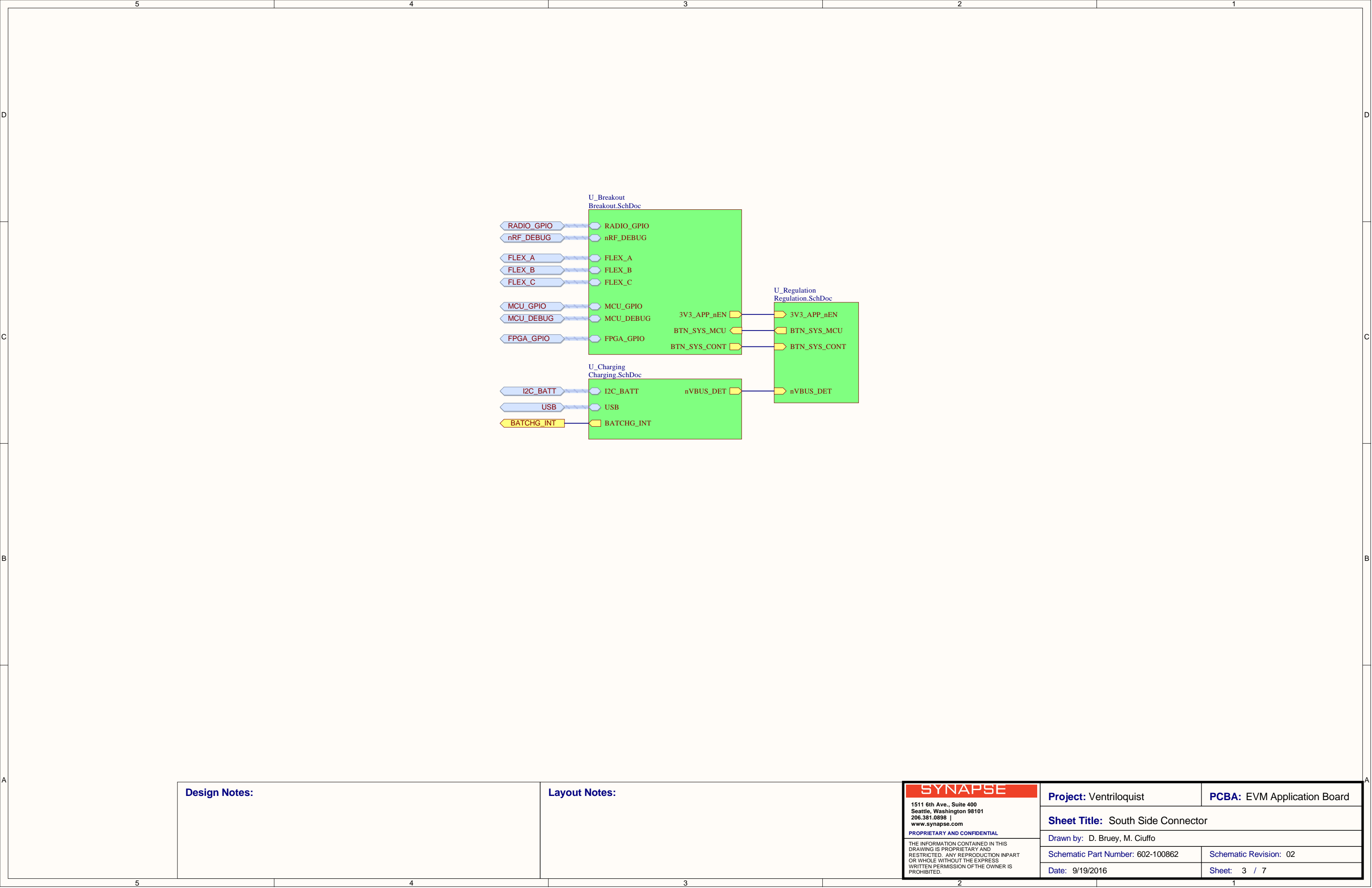
Drawn by: D. Bruey, M. Ciuffo

Schematic Part Number: 602-100862

Schematic Revision: 02

Date: 9/19/2016

Sheet: 2 / 7

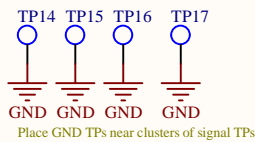
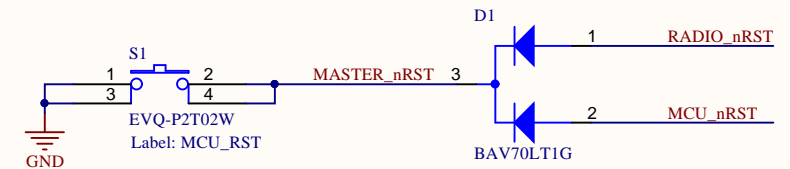
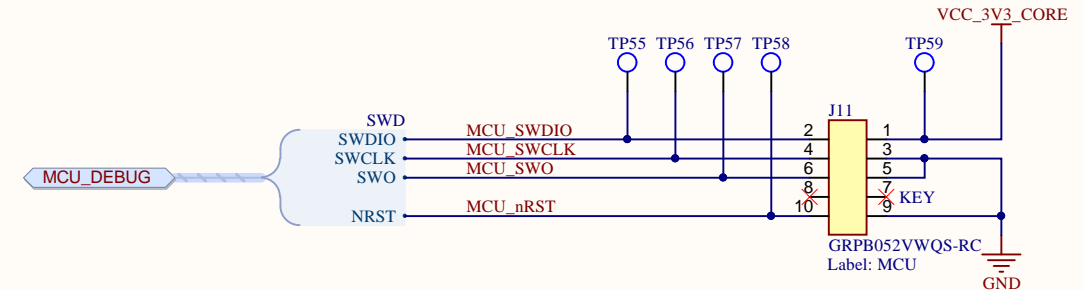
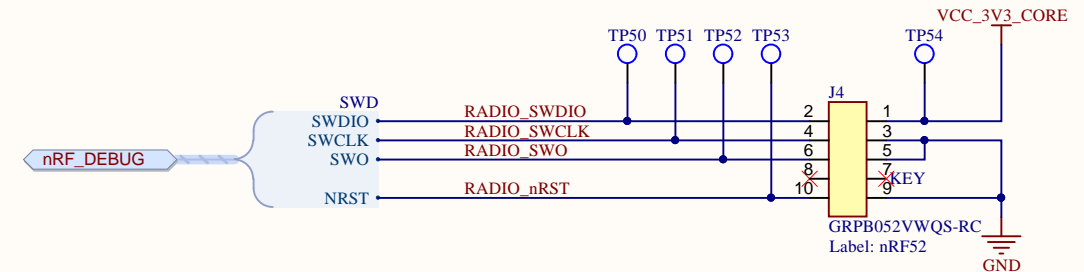
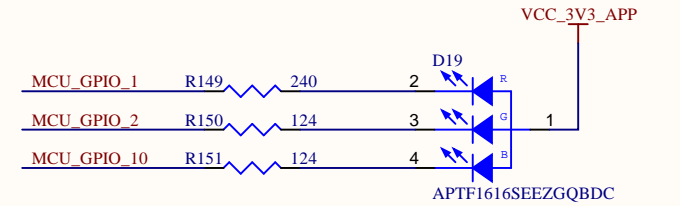
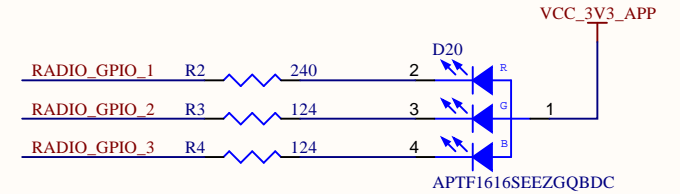
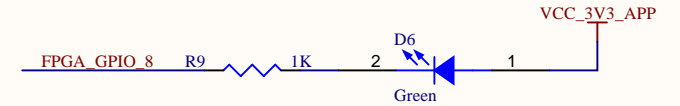
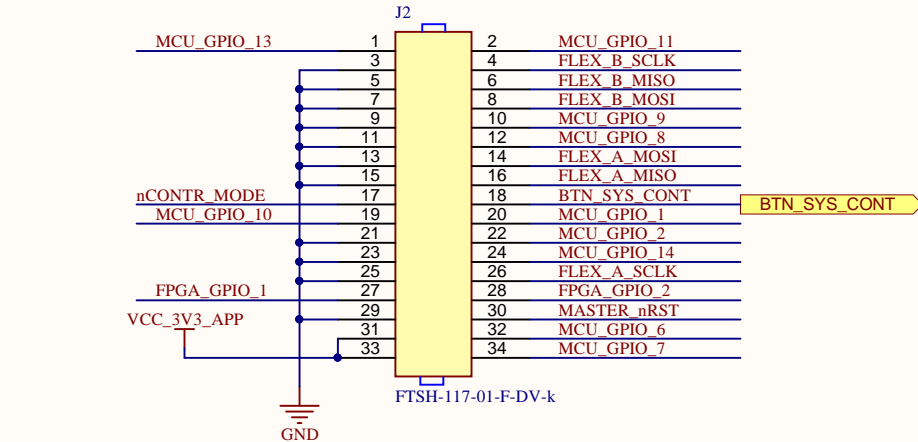
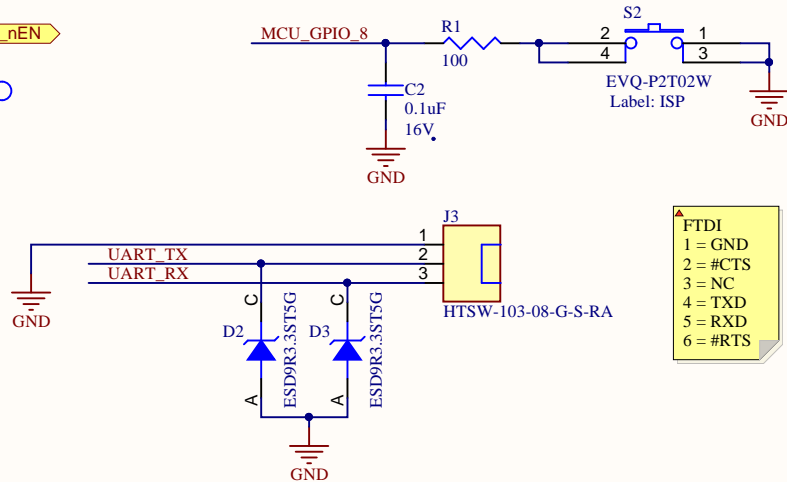
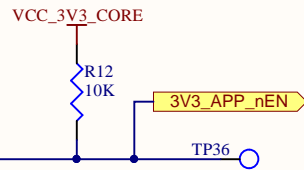
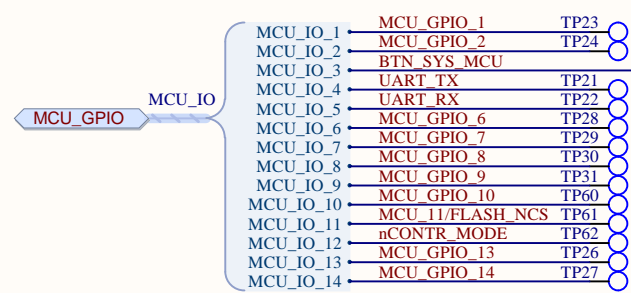
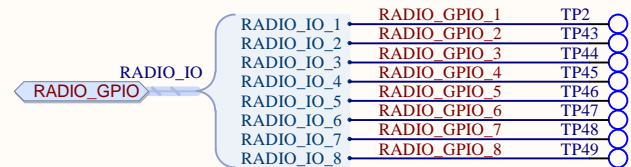
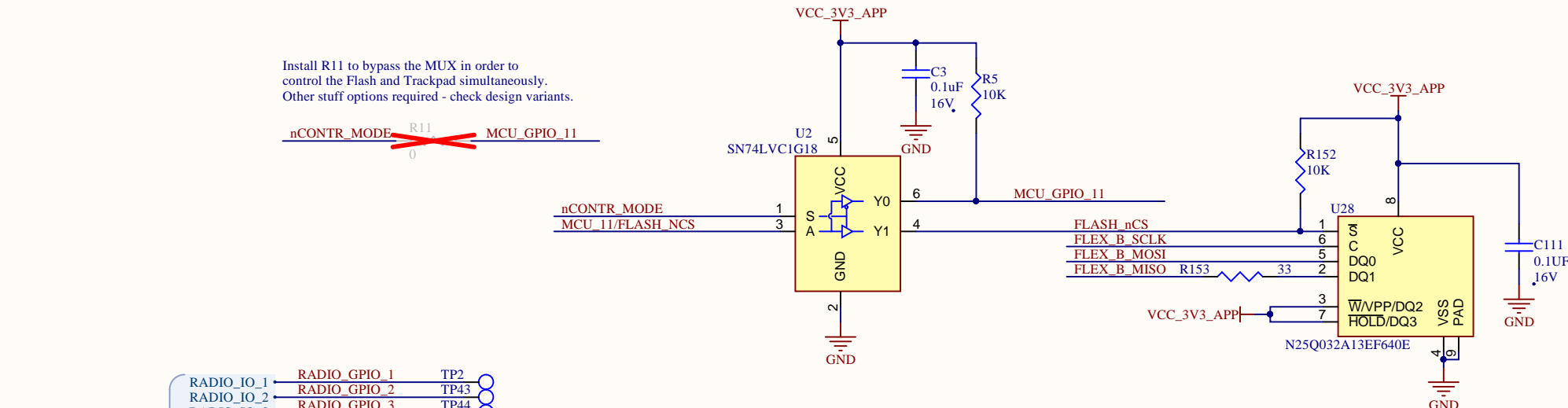


Design Notes:

Layout Notes:

<div>SYNAPSE</div> <div>1511 6th Ave., Suite 400 Seattle, Washington 98101 206.361.0898 www.synapse.com</div> <div>PROPRIETARY AND CONFIDENTIAL</div> <div>THE INFORMATION CONTAINED IN THIS DRAWING IS PROPRIETARY AND RESTRICTED. ANY REPRODUCTION INPART OR WHOLE WITHOUT THE EXPRESS WRITTEN PERMISSION OF THE OWNER IS PROHIBITED.</div>	Project: Ventriloquist	PCBA: EVM Application Board
	Sheet Title: South Side Connector	
	Drawn by: D. Bruey, M. Ciuffo	
	Schematic Part Number: 602-100862	Schematic Revision: 02
	Date: 9/19/2016	Sheet: 3 / 7

Install R11 to bypass the MUX in order to control the Flash and Trackpad simultaneously.
Other stuff options required - check design variants.



Design Notes:

Layout Notes:

SYNAPSE

1511 6th Ave., Suite 400
Seattle, Washington 98101
206.361.0898 |
www.synapse.com

PROPRIETARY AND CONFIDENTIAL

THE INFORMATION CONTAINED IN THIS
DRAWING IS PROPRIETARY AND
RESTRICTED. ANY REPRODUCTION IN PART
OR WHOLE WITHOUT THE EXPRESS
WRITTEN PERMISSION OF THE OWNER IS
PROHIBITED.

Project: Ventriloquist

PCBA: EVM Application Board

Sheet Title: MCU Breakout

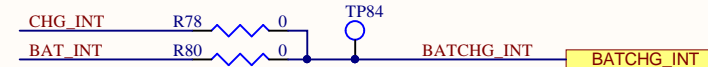
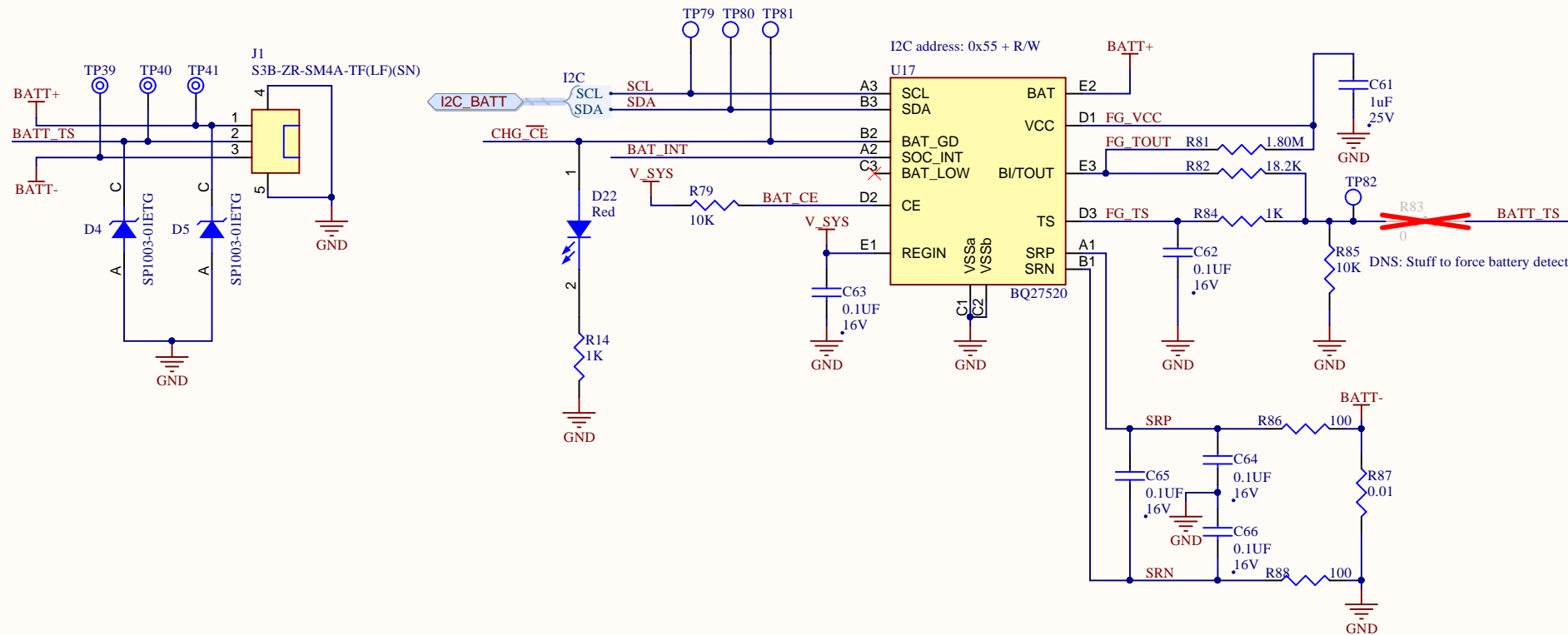
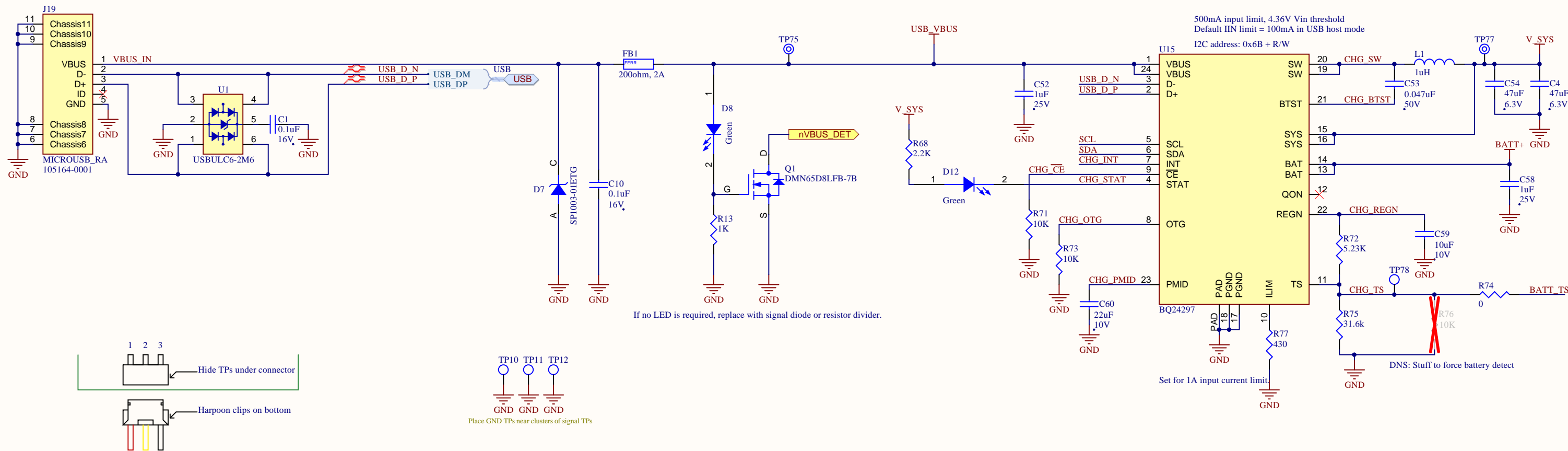
Drawn by: D. Bruey, M. Ciuffo

Schematic Part Number: 602-100862

Date: 9/19/2016

Schematic Revision: 02

Sheet: 4 / 7



Design Notes:

BQ24297 calculations

$I_{\text{ripple}} = (3V \cdot (5V - 3V)) / (5V \cdot 1.5\text{MHz} \cdot 1\mu\text{H})$
0.8A
 $I_{\text{Peak}} = 1A + (0.8A / 2) = 1.400\text{mA}$
Assume 10k NTC B(25/85)=3977
 $R_{\text{NTC}}@60C = 10\text{ke}^{(3977 \cdot (1/333 - 1/298))}$
2459ohm
 $R_{\text{NTC}}@0C = 10\text{ke}^{(3977 \cdot (1/333 - 1/273))}$
3394ohm
Safe range = 44.7-73.5% of VREGN

Layout Notes:

Minimize current loop of input/output caps of TPS630252

SYNAPSE

1511 6th Ave., Suite 400
Seattle, Washington 98101
206.381.0898 |
www.synapse.com

PROPRIETARY AND CONFIDENTIAL

THE INFORMATION CONTAINED IN THIS
DRAWING IS PROPRIETARY AND
RESTRICTED. ANY REPRODUCTION IN PART
OR WHOLE WITHOUT THE EXPRESS
WRITTEN PERMISSION OF THE OWNER IS
PROHIBITED.

Project: Ventriloquist

PCBA: EVM Application Board

Sheet Title: Charging

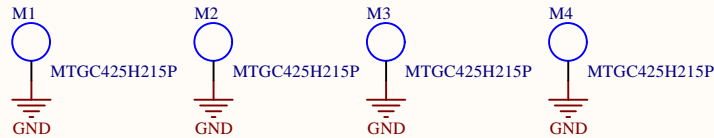
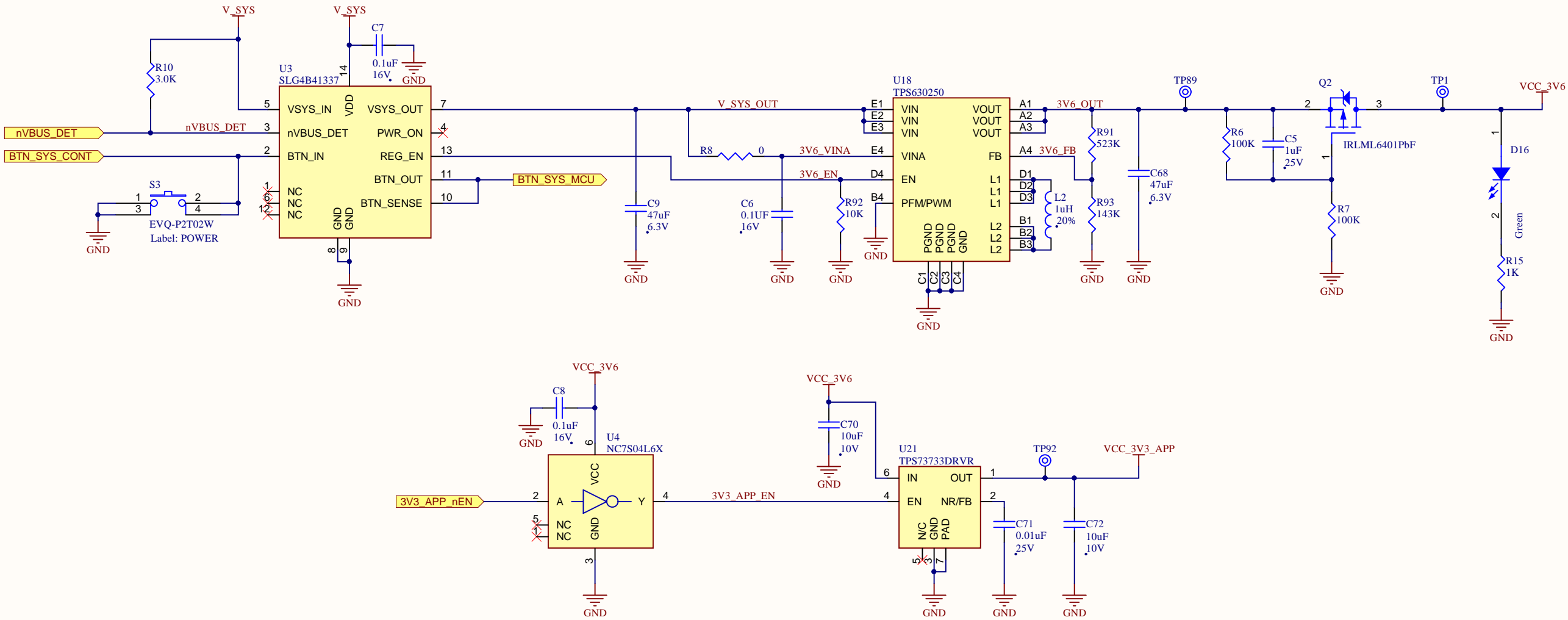
Drawn by: D. Bruey, M. Ciuffo

Schematic Part Number: 602-100862

Schematic Revision: 02

Date: 9/19/2016

Sheet: 5 / 7



Design Notes:

TPS630252 Assumptions:
Minimum battery voltage: 3.0V
Peak current @ 3.6V: 1A
Efficiency: 90%
Calculated Peak inductor current: 1.428A
Calculated Frhpz: 398.5kHz (7)
Used (5)(6)(7) on TPS630252 datasheet
(.8V/150k)*(150k+523k) = 3.589V

Layout Notes:

Minimize current loop of input/output caps of TPS630252

SYNAPSE

1511 6th Ave., Suite 400
Seattle, Washington 98101
206.381.0898 |
www.synapse.com

PROPRIETARY AND CONFIDENTIAL

THE INFORMATION CONTAINED IN THIS
DRAWING IS PROPRIETARY AND
RESTRICTED. ANY REPRODUCTION INPART
OR WHOLE WITHOUT THE EXPRESS
WRITTEN PERMISSION OF THE OWNER IS
PROHIBITED.

Project: Ventriloquist

PCBA: EVM Application Board

Sheet Title: Regulation

Drawn by: D. Bruey, M. Ciuffo

Schematic Part Number: 602-100862

Date: 9/19/2016

Schematic Revision: 02

Sheet: 6 / 7

CHANGE HISTORY		
REV	DESCRIPTION OF CHANGE	DATE
R01	Alpha Release	07/20/2016
R02	Moved Q1 gate from REGN to VBUS Removed U1 from VBUS Added D7 and C10 to VBUS Changed D4 TVS to 7.5 VDC Added R10 to nVBUS_DET Added R12 from 3V3_APP_EN to VCC_3V3_CORE Updated U3 programmed part number	08/10/2016

Design Notes:

Layout Notes:

SYNAPSE

1511 6th Ave., Suite 400
Seattle, Washington 98101
206.381.0898 |
www.synapse.com

PROPRIETARY AND CONFIDENTIAL

THE INFORMATION CONTAINED IN THIS
DRAWING IS PROPRIETARY AND
RESTRICTED. ANY REPRODUCTION INPART
OR WHOLE WITHOUT THE EXPRESS
WRITTEN PERMISSION OF THE OWNER IS
PROHIBITED.

Project: Ventriloquist

PCBA: EVM Application Board

Sheet Title: Revision Log

Drawn by: D. Bruey, M. Ciuffo

Schematic Part Number: 602-100862

Schematic Revision: 02

Date: 9/19/2016

Sheet: 7 / 7