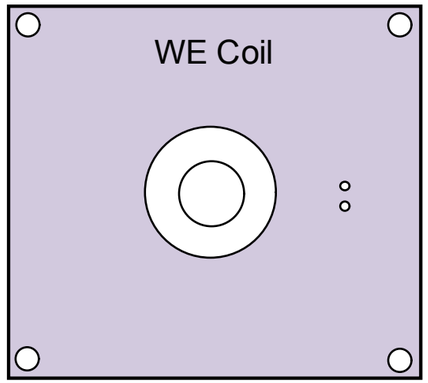
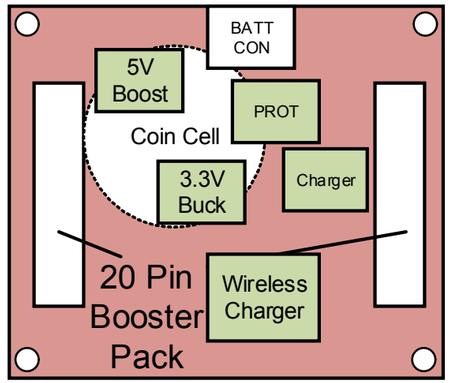
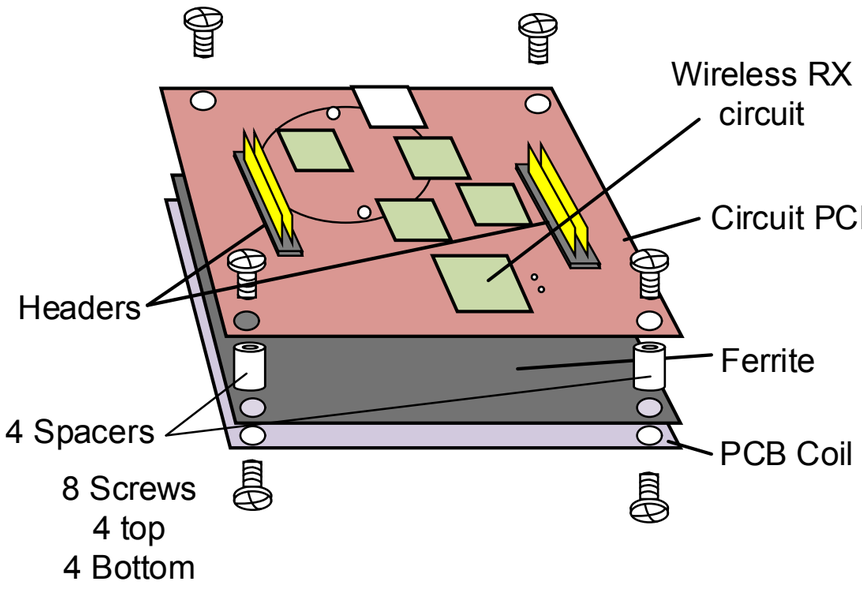
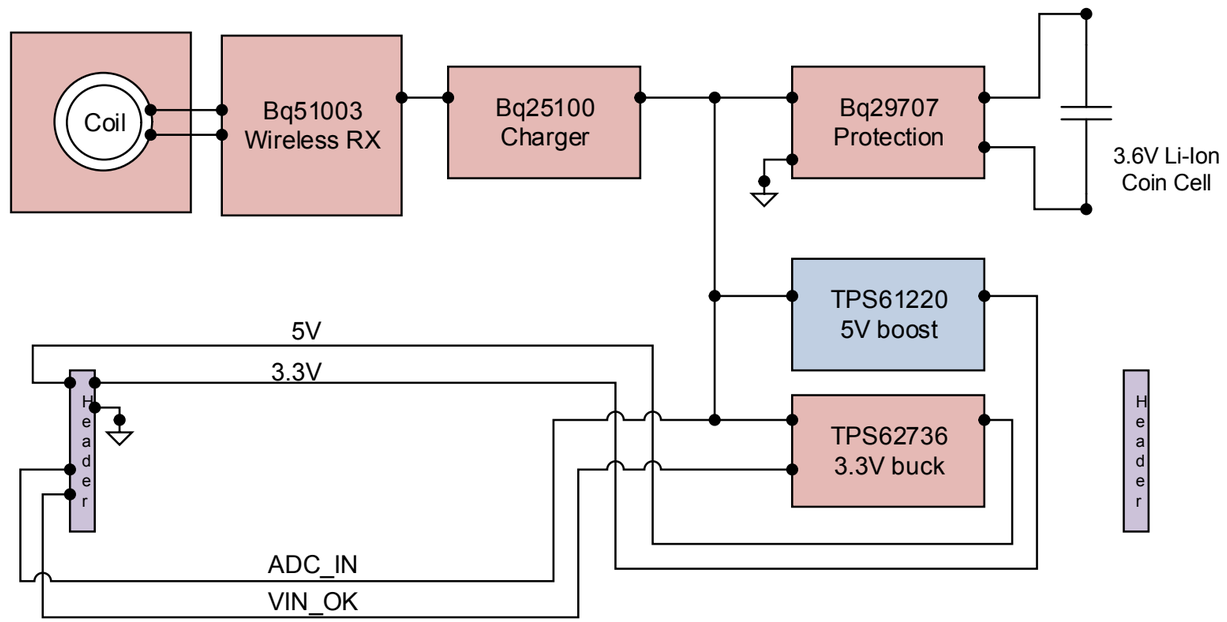
Revision History	
Revision	Notes









The TIDA-00881 uses the TIDA-00668 PCB and the TIDA-00668-C02 coil PCB

Orderable: N_A	Designed for: Public Release	Mod. Date: 12/11/2015
TID #: TIDA-00668/TIDA-00881	Project Title: 50mA Wireless Power Booster Pack	
Number: TIDA-00668 Rev: A	Sheet Title:	
SVN Rev: Version control disabled	Assembly Variant: [No Variations]	Sheet: 1 of 3
Drawn By:	File: TIDA-00668_block.SchDoc	Size: B
Engineer: Gordon Varney	Contact: http://www.ti.com/support	

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http://www.ti.com

Fast-charge - ISET K=135 R=135/Current	
Icc(A)	R(ohm)
0.24	560
0.22	620
0.20	680
0.18	750
0.15	910
0.12	1100
0.10	1300
0.08	1800
0.05	2700
0.01	13000

Pre-charge - PRETERM K=300 16(%)x300=4.87kohm	
% of CC(%)	R(kohm)
100	30
90	27
80	24
67	20
60	18
50	15
40	12
30	9.1
21	6.2
10	3

Battery Protection Circuit

Over-charge Detection Voltage 4.28V
Over-discharge Detection Voltage 2.80V
Current Limit 100mA

LIR2032 Maxell LI-Ion Recharable ONLY
3.6V nom/ 4.2Vmax - 50mAH
30mA Max Charge Rate
60mA Max Dis-Charge Rate

Current Shunt
J1
PBC02SAAN

Icc = 25mA
Pre = 16% - 4mA
Term = 8% - 2mA

U1
BQ51003YFPR

U2
BQ25100YFP

U5
BQ29707DSER

BT1
3.6V

J8
S2B-PH-SM4-TB(LF)(SN)

J2
PBC02SAAN

Output test pins
DO NOT USE A JUMPER

J8 Mating Connector
JST: 02KR-6H-P (CONN SOCKET 2POS 2MM IDC)

PCB Coil
J3
PBC02SAAN

Q1A
CSD85301Q2

Q1B
CSD85301Q2

Current Limit - ILIM
K=314
RLIM=314/ILIM

Iout(A)	R(ohm)
0.62	510
0.56	560
0.51	620
0.42	750
0.35	910
0.31	1,000
0.24	1,300
0.17	1,800
0.12	2,700
0.06	5,100

Charging LED

5V Output Disconnect

5Vdc Boost

U3
TPS61220DCK

L1 4.7uH
EPL3015-472MLB

J4
PBC02SAAN

50mA max current
+5V

J5
PBC02SAAN

5V Enable

3.3V Output Disconnect

3.3Vdc Buck

U4
TPS62736RGYR

L2 10uH
74404024100

J6
PBC02SAAN

50mA max current
+3.3V

J7
PBC02SAAN

3.3V Enable

VIN_OK = >3.4V

JP1
TSM-110-01-T-DV-P

JP2
TSM-110-01-T-DV-P

Orderable: N_A		Designed for: Public Release	Mod. Date: 9/24/2015
TID #: TIDA-00668/TIDA-00881		Project Title: 50mA Wireless Power Booster Pack	
Number: TIDA-00668	Rev: A	Sheet Title: Main Schematic	
SVN Rev: Version control disabled		Assembly Variant: [No Variations]	Sheet: 2 of 3
Drawn By: Gordon Varney		File: TIDA-00668_sch.SchDoc	Size: B
Engineer: Gordon Varney		Contact: http://www.ti.com/support	

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SH-J1 SH-J4 SH-J5 SH-J6 SH-J7

H1 NY PMS 440 0025 PH
H2 NY PMS 440 0025 PH
H3 NY PMS 440 0025 PH
H4 NY PMS 440 0025 PH
H5 NY PMS 440 0025 PH
H6 NY PMS 440 0025 PH
H7 NY PMS 440 0025 PH
H8 NY PMS 440 0025 PH

HS5 1902B
HS6 1902B
HS7 1902B
HS8 1902B

FID1 FID2 FID3

PCB Number: TIDA-00668
PCB Rev: A

PCB LOGO
Texas Instruments

PCB LOGO
Pb-Free Symbol

PCB LOGO
FCC disclaimer

Ferrite 1

SMXRXXXXXXXXXXX
Ferrite sheet
WE-FSFS
2.36x2.36x0.01

C01

PCB Number: TIDA-00668
PCB Rev: A

C02

PCB Number: TIDA-00668
PCB Rev: A

L3

SMXRXXXXXXXXXXX
Wireless coil
760308101214
19mm Round
26uH Qi/PMA

This coil is a stick on and solder addition to the C02 PCB

Use with the TIDA-00881

Label Table	
Variant	Label Text
C01	Coil on PCB
C02	Ext Coil on PCB

ZZ1
Assembly Note
These assemblies are ESD sensitive, ESD precautions shall be observed.

ZZ2
Assembly Note
These assemblies must be clean and free from flux and all contaminants. Use of no clean flux is not acceptable.

ZZ3
Assembly Note
These assemblies must comply with workmanship standards IPC-A-610 Class 2, unless otherwise specified.

ZZ4
Assembly Note
Wireless Coil 1 will be attached to the PCB C02 on the bottom of the board stack. The wires will be soldered to the PCB.

ZZ5
Assembly Note
The Ferrite Shield must be custom cut to fit the PCB. Only the four mounting holes are allowed.

ZZ6
Assembly Note
Nylon screws and spacers only for this assembly. The only copper on PCB C01 and C02 is for the wire holes. No extra copper is allowed on PCB C01 and C02.

ZZ7
Assembly Note
Use 2 strands, 3 inch Length, of 26 gauge litz wire to connect the PCB C02 board to the main PCB connector J3. Attach the litz wire to PCB C01 and leave hanging.

ZZ8
Assembly Note
The assembly build will use PCB C02. Bag and ship PCB C01 with the assembly.

Orderable: N_A	Designed for: Public Release	Mod. Date: 12/11/2015
TID #: TIDA-00668/TIDA-00881	Project Title: 50mA Wireless Power Booster Pack	
Number: TIDA-00668 Rev: A	Sheet Title:	
SVN Rev: Version control disabled	Assembly Variant: [No Variations]	Sheet: 3 of 3
Drawn By:	File: TIDA-00668_hdw.SchDoc	Size: B
Engineer: Gordon Varney	Contact: http://www.ti.com/support	

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