AnD83XX Evaluation Board

AnD8320EB, AnD8302EB

Features

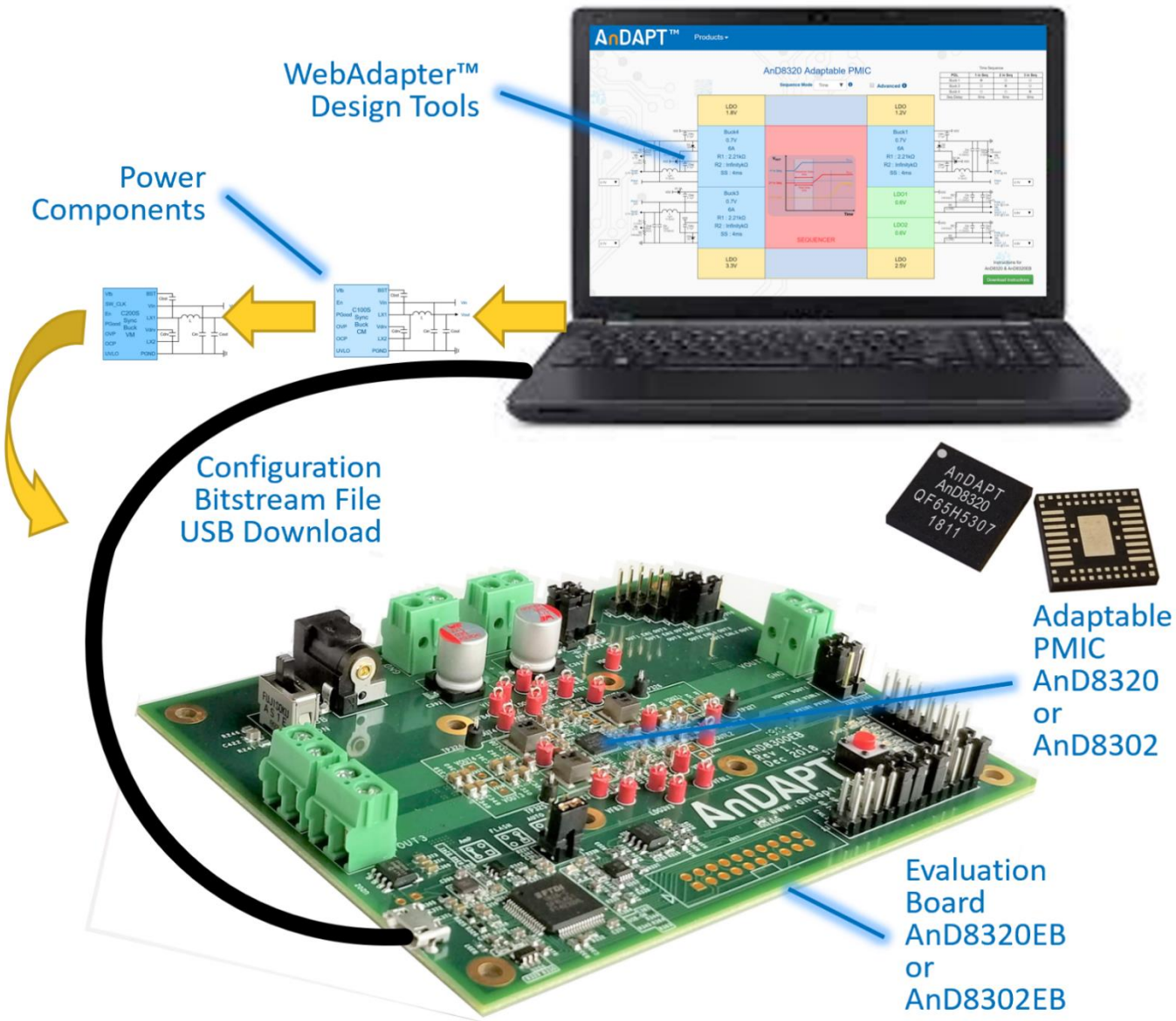
- Demonstrates AnD8320 or AnD8302 Adaptable PMIC:
  - Three 6A Synchronous Buck Regulators
  - Two LDOs (AnD8320) or Two Load Switches (AnD8302)
  - Four 0.2A auxiliary LDOs: 1.2V, 1.8V, 2.5V, 3.3V
  - Sequencing
- WebAdapter™ or WebAmP™ Tool Downloads Configuration Files:
  - .HAX file to configure the device directly
  - .HEX file (Intel HEX) to program on-board flash

Description

The AnD8320EB and AnD8302EB are ready to use Evaluation Boards to evaluate the Triple-Buck AnD8320 and AnD8302 PMICs. Simply apply PV_{IN}, then measure default settings of 0.7V on the 3 V_{OUT} terminals. To change V_{OUT}, adjust the resistor divider ratio according to: $R2 = Vfb * R1 / (V_{OUT} - Vfb)$ kΩ, or use the WebAdapter tool and select your desired V_{OUT}. The tool reports will provide the resistor required location and value. To access the WebAdapter tool, please use the following link: https://webadaptor.andapt.com/apmic

Optionally, the Bucks may be modified as needed by the WebAdapter design tool and downloaded over the USB cable. The .HAX file downloads to the AnD83XX Adaptable PMIC while the .HEX file downloads to the flash memory. Functionality may be extended using On-Demand WebAmP tools. For additional information, please check the following link: https://www.andapt.com/docs

Application of Evaluation Board



Getting Started: Power Up

Step 1. Set jumpers to the default **Load PMIC from FLASH** as shown in the Jumper Selection Table. Set switch SW1 UP (off) as shown below.

Step 2. Connect 12V power supply to PV_{IN} Plug J308 or J353/J352.

Step 3. Turn ON board by switching SW1 DOWN (on).

Step 4. Measure buck output voltages on V_{OUT1}, V_{OUT2} and V_{OUT4} (0.7V default).

To change parameters:

Step 5. Open WebAdapter tool from AnDAPT web site

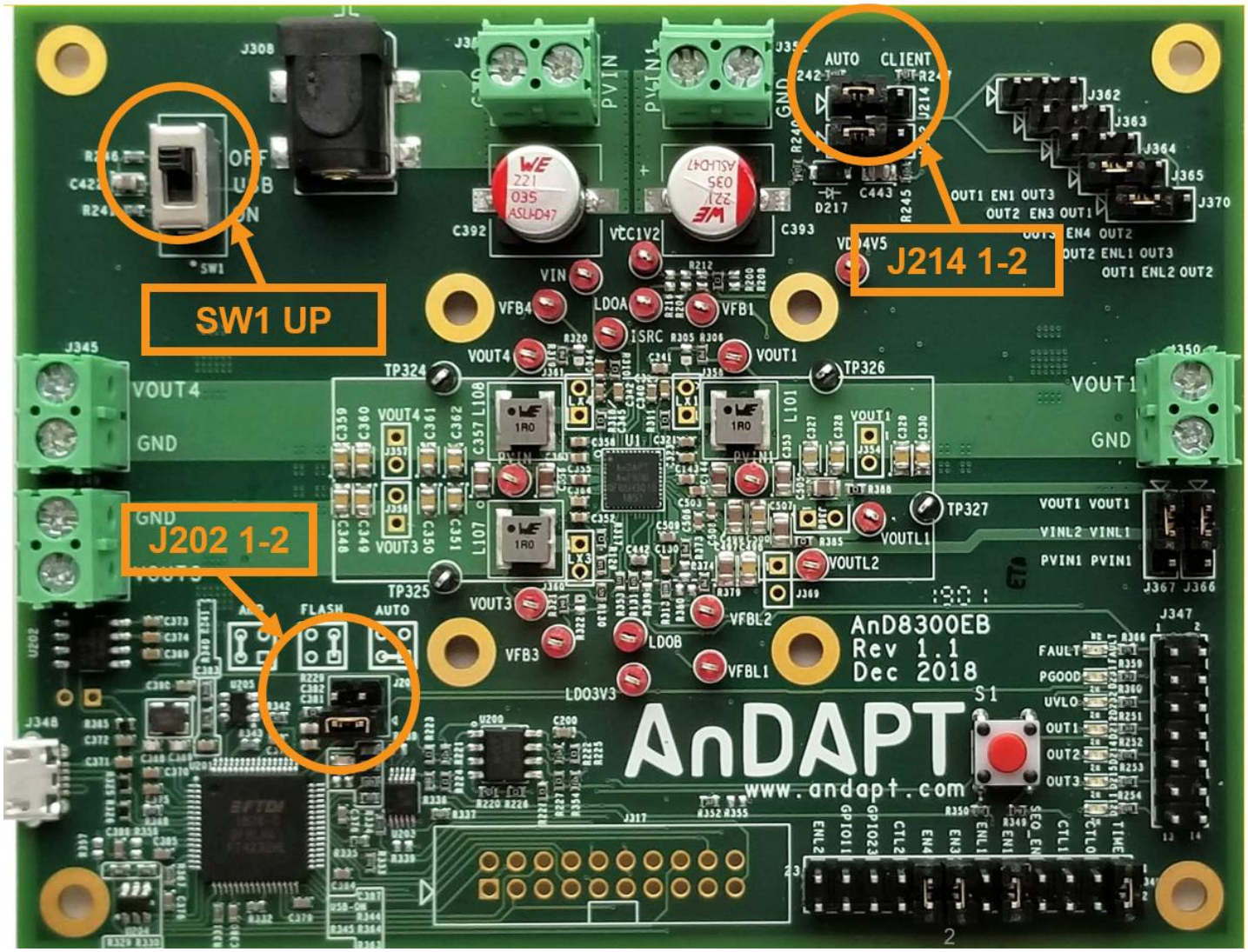
Step 6 Modify buck output voltages on V_{OUT1}, V_{OUT2} and V_{OUT4} using WebAdapter Download Instructions (see WebAdapter™ View, page3)

Step 7 Modify buck sequences using using WebAdapter Download Instructions (see WebAdapter™ View, page3)

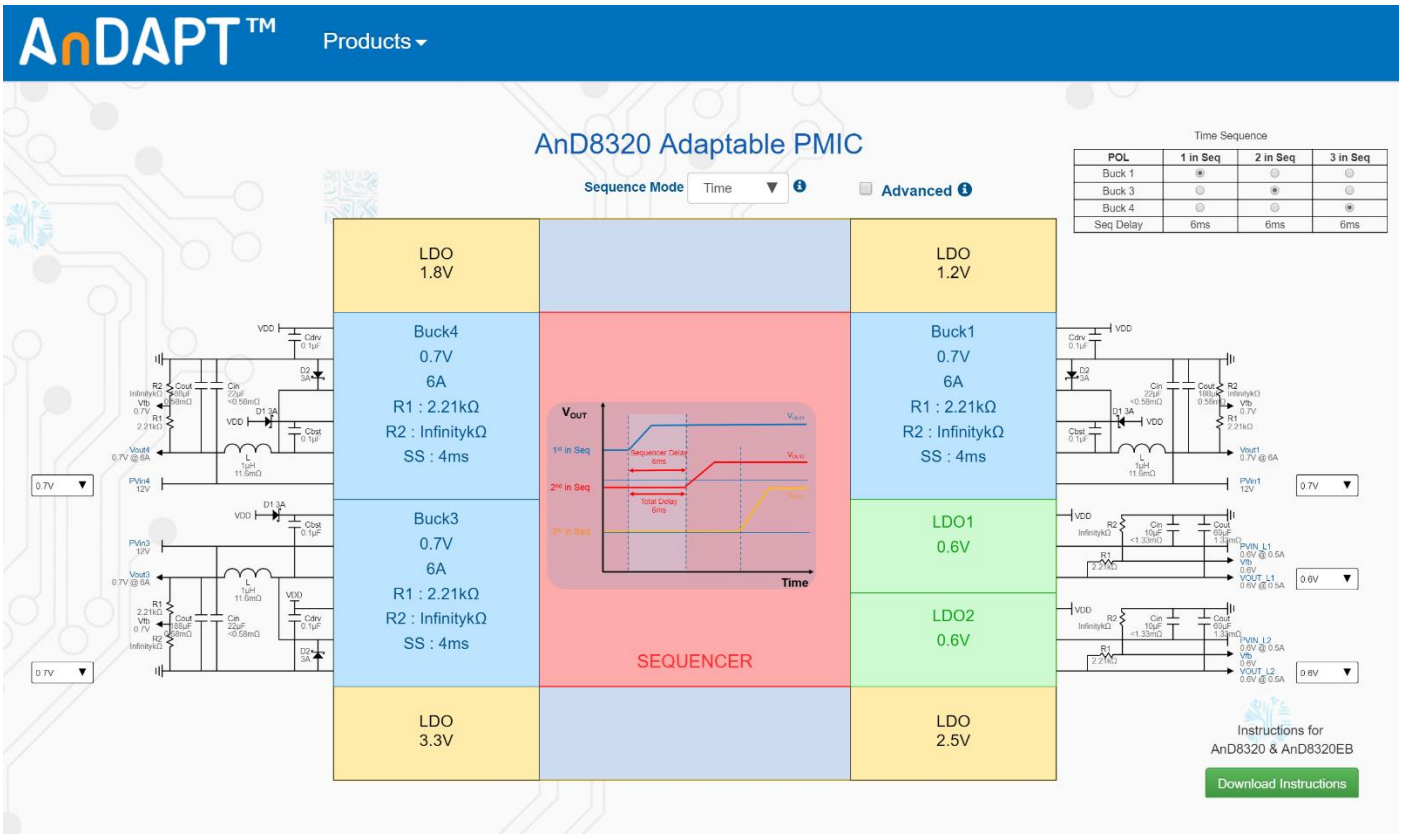
Jumper Selection Table for J202 and J214

Function	Header	Load PMIC from FLASH	Load PMIC from USB	Program FLASH from USB
Chip Select	J202 	1-2 	2-4 	1-3 
Mode	J214 	1-2 	2-3 	2-3 

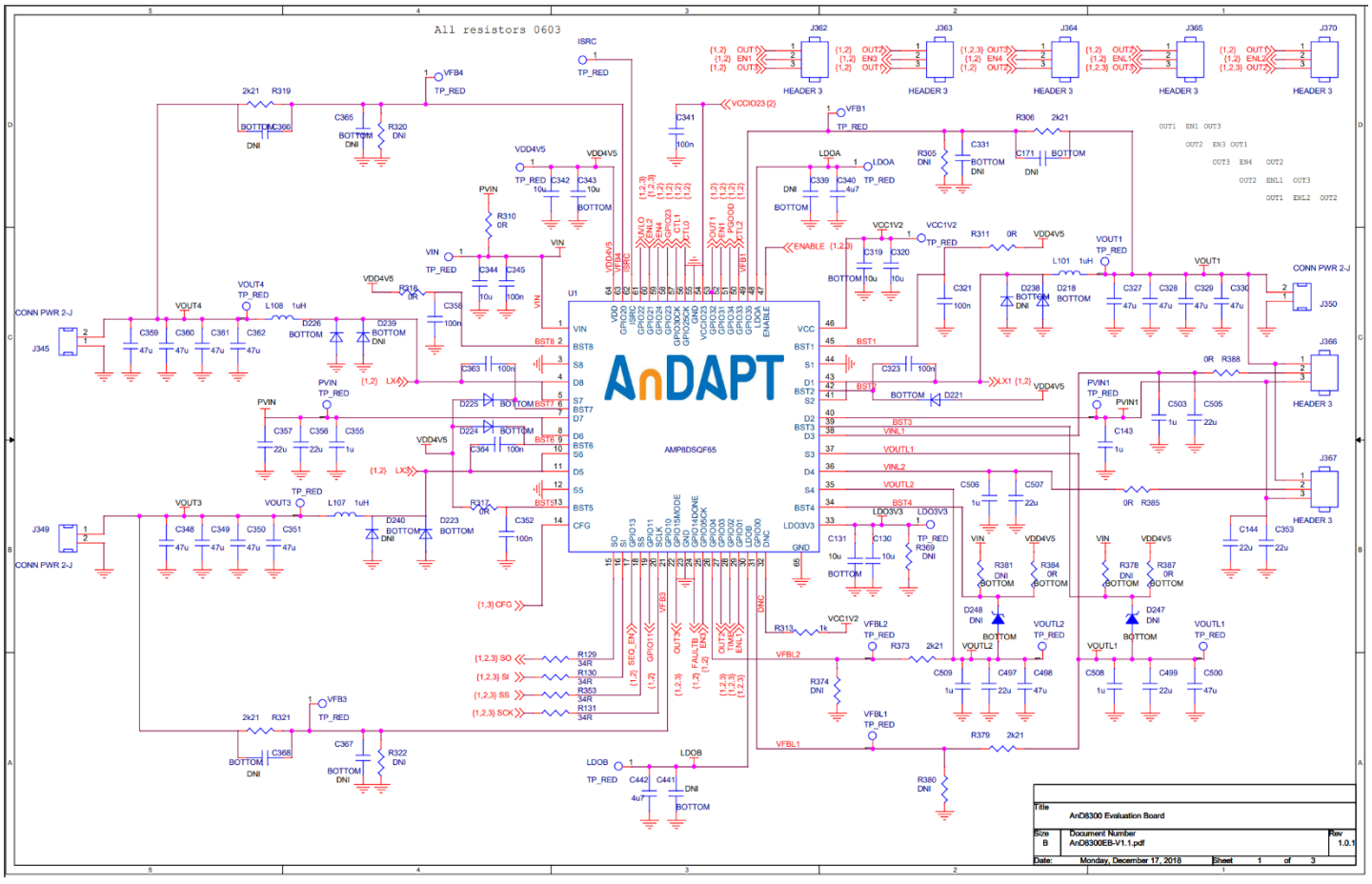
PMIC Power Up Jumper and Switch Settings



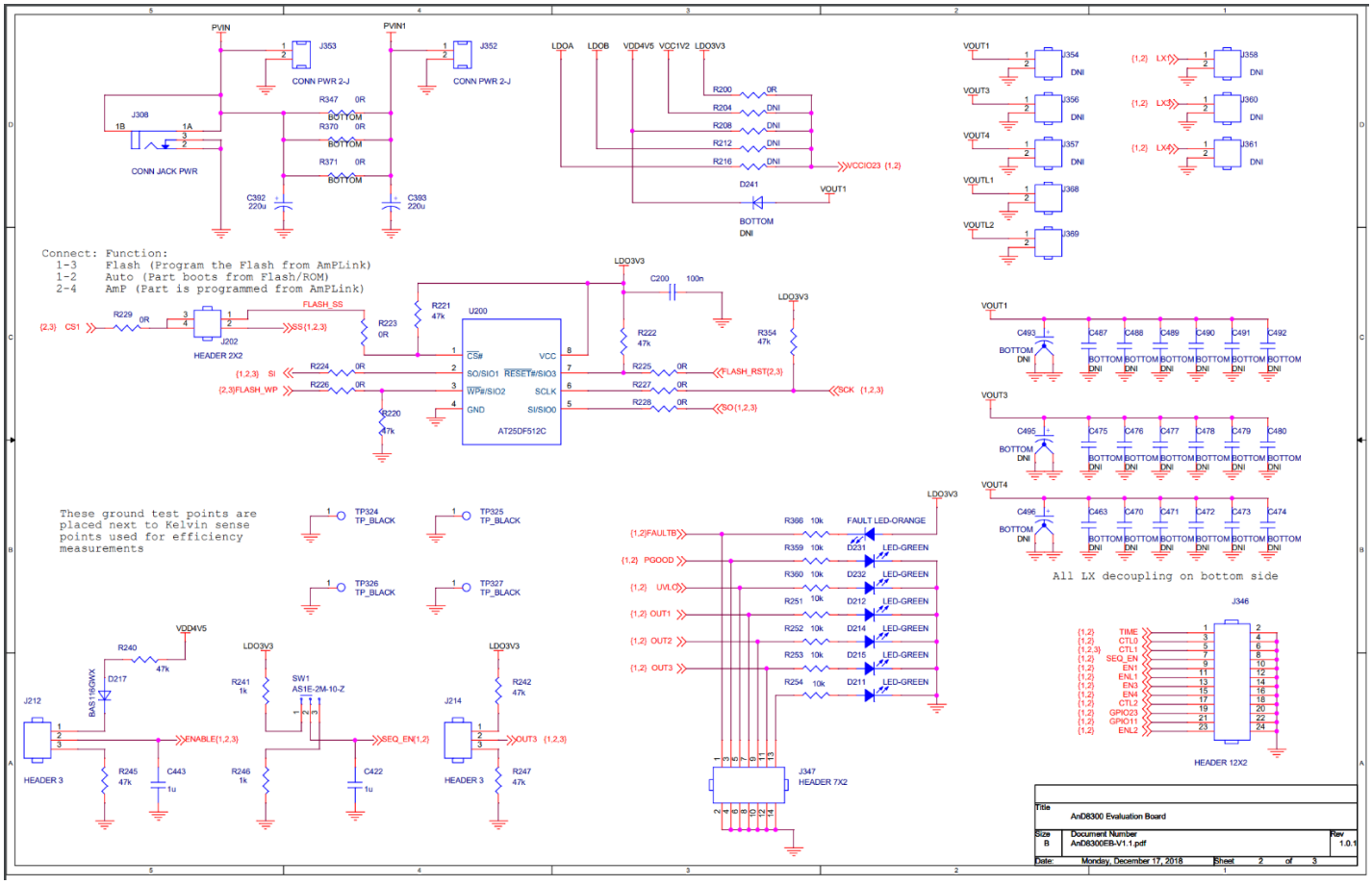
WebAdapter™ View, AnD8320 Web Design

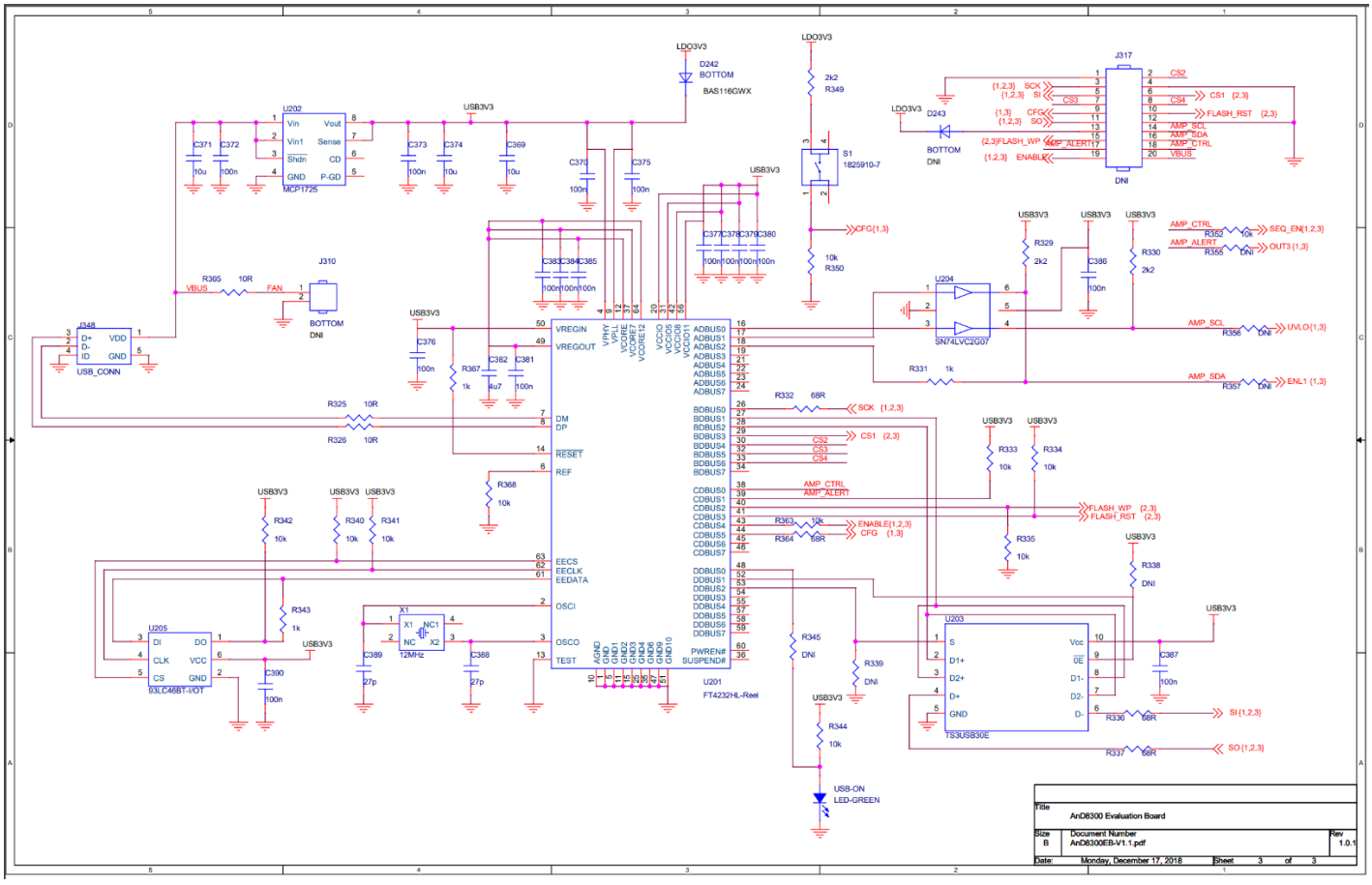


Schematics

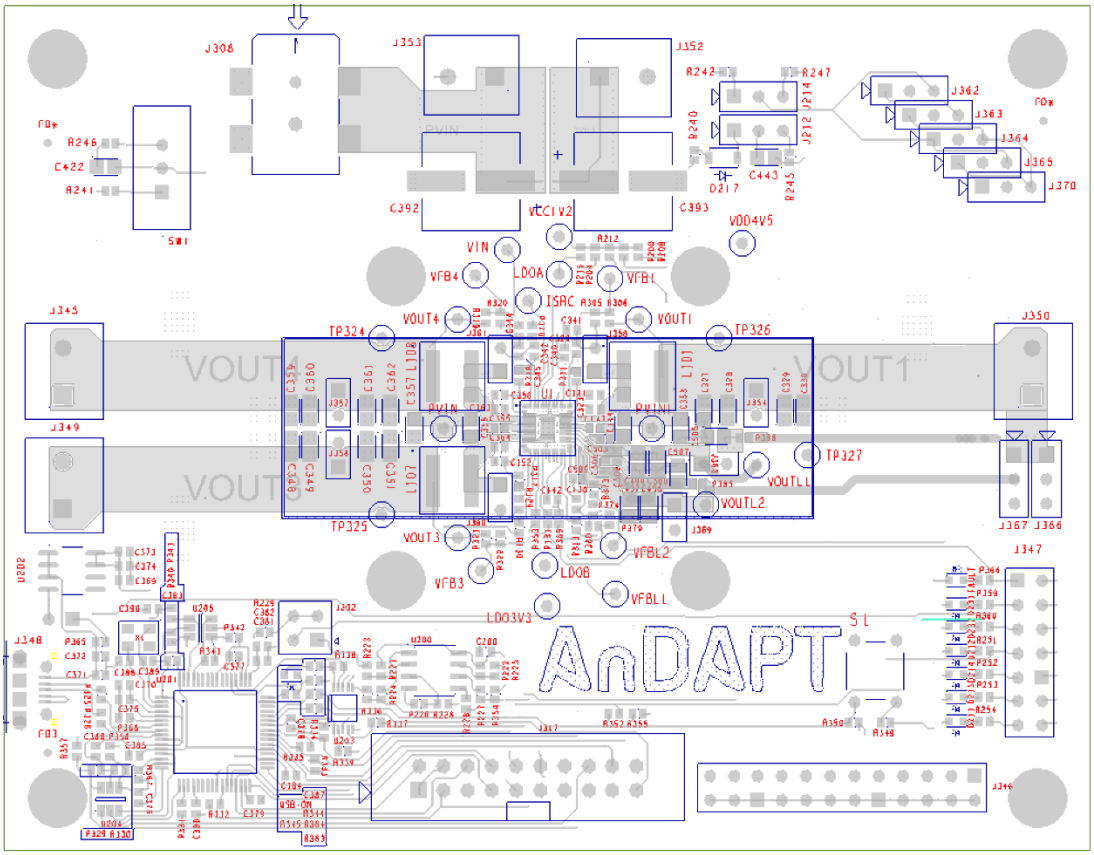


Schematics

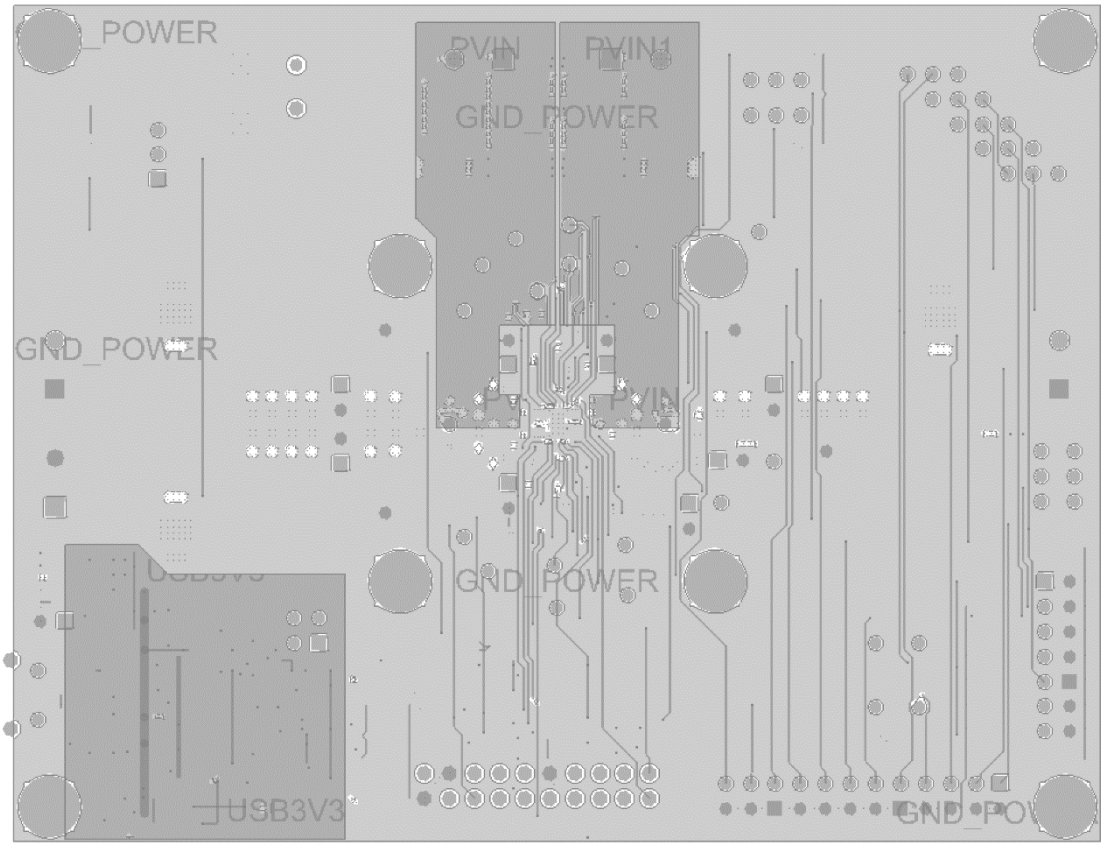

Connect: Function:
1-3 Flash (Program the Flash from AmPLink)
1-2 Auto (Part boots from Flash/ROM)
2-4 AmP (Part is programmed from AmPLink)
These ground test points are placed next to Kelvin sense points used for efficiency measurements
All LX decoupling on bottom side
AnD8300 Evaluation Board
Monday, December 17, 2018


AnD8300 Evaluation Board
Monday, December 17, 2018

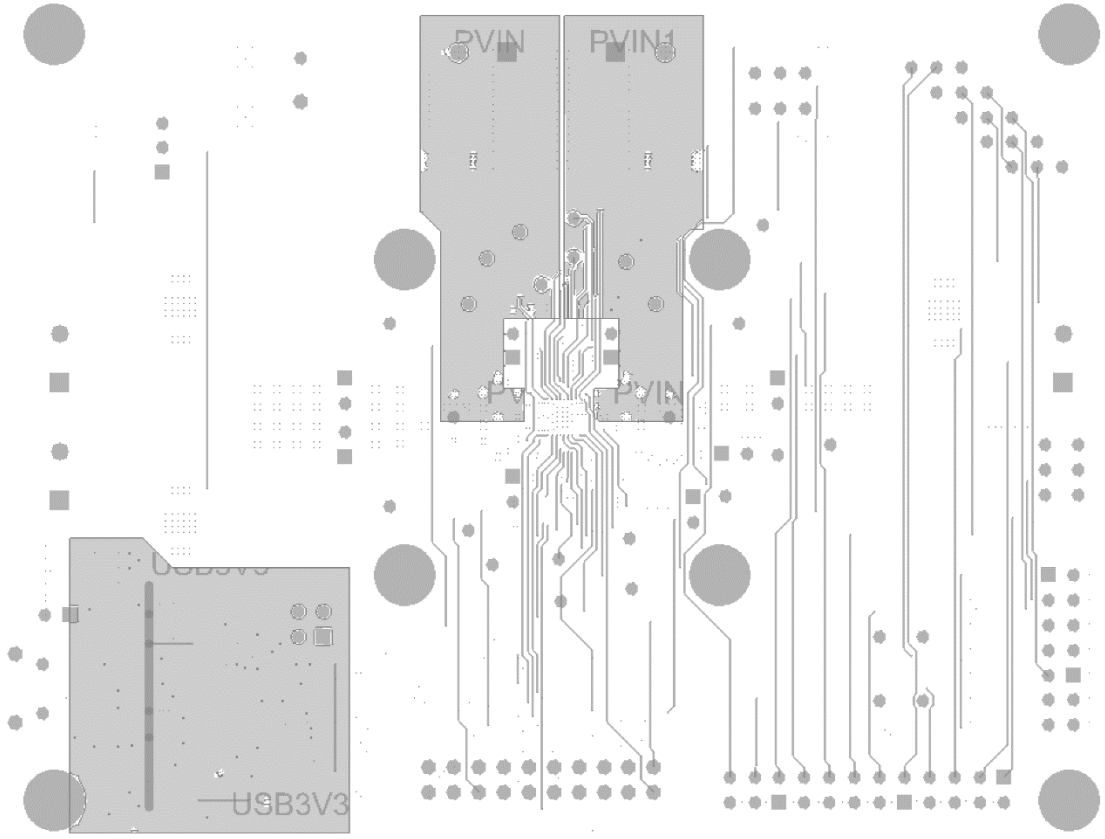
PCB Top Layer with Silk Screen



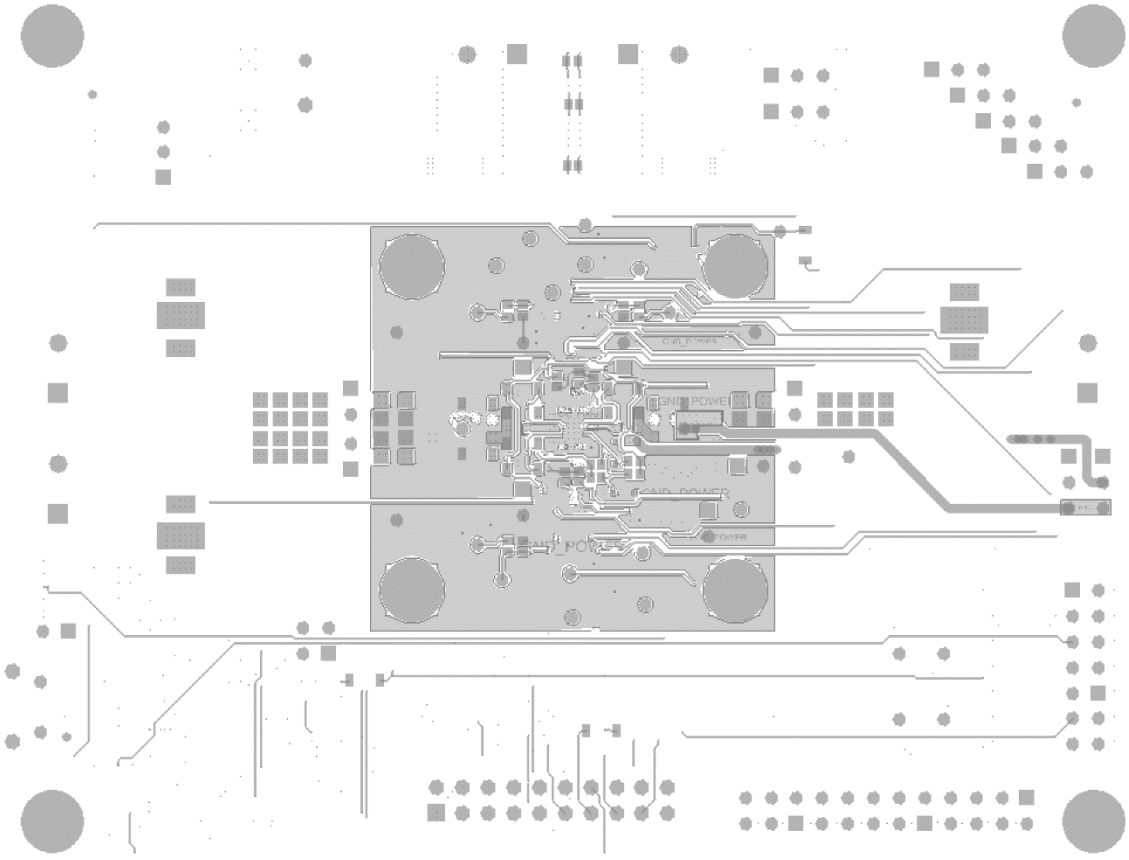
PCB Layer 2 GND



PCB Layer 3 PVIN



PCB Bottom Layer with Silk Screen



Bill of Materials

Item	Qty	Reference	Value	Manufacturer
1	7	C130,C320,C342,C344,C369,	10u	490-10474-1-ND
		C371,C374		
1a	3	C131,C319,C343	10u	490-10474-1-ND
1b	1	C344	10u	490-10991-1-ND
2	2	C422, C443	1u	1276-2926-1-ND
3	6	C143,C355,C503,	1u	490-10749-1-ND
		C506,C508,C509		
4	8	C144,C353,C356,C357,C497,	22u	490-10749-1-ND
		C499,C505,C507		
5	30	C171,J310,C331,C339,C365,	DNI	
		C366,C367,C368,C441,C463,		
		C470,C471,C472,C473,C474,		
		C475,C476,C477,C478,C479,		
		C480,C487,C488,C489,C490,		
		C491,C492,C493,C495,C496		
6	25	C200,C321,C323,C341,C345,	100n	1276-1012-2-ND
		C352,C358,C363,C364,C370,		
		C372,C373,C375,C376,C377,		
		C378,C379,C380,C381,C383,		
		C384,C385,C386,C387,C390		
7	14	C327,C328,C329,C330,C348,	47u	490-9960-1-ND
		C349,C350,C351,C359,C360,		
		C361,C362,C498,C500		
8	3	C340,C382,C442	4u7	1276-1044-1-ND
9	2	C388,C389	27p	399-1054-6-ND
10	2	C392,C393	220u	732-8513-1-ND
11	7	D211,D212,D214,D215,D231,	LED-GREEN	732-4971-6-ND
		D232,USB-ON		
12	2	D217, D242	BAS116GWX	
13	6	D218,D221,D223,D224,D225,	BOTTOM	DB2W40300LDKR-ND
		D226		
14	5	D238,D239,D240,D241,D243	DNI	
16	2	D247,D248	5V6	1727-8226-1-ND
17	1	FAULT	LED-ORANGE	732-4978-6-ND
18	19	VOUTL1,VOUT1,VFBL1,VFB1,	TP_RED	36-5000-ND
		PVIN1,VOUTL2,VFBL2,VOUT3,		
		VFB3,VOUT4,VFB4,VCC1V2,		
		LDO3V3,VDD4V5,VIN,PVIN,		
		LDOB,LDOA,ISRC		
19	1	J202	HEADER 2X2	732-5294-ND
20	9	J212,J214,J362,J363,J364,	HEADER 3	732-5316-ND
		J365,J366,J367,J370		
21	1	J308	CONN JACK PWR	732-5933-6-ND

Item	Qty	Reference	Value	Manufacturer
22	27	R204,R208,R212,R216,J317,	DNI	
		R338,R339,R345,J354, R305,R320,		
		R355,R356,J356,R357,J357,R322		
		J358,J360,J361,J368,R369,		
		J369,R374,R380,R384,R387		
23	5	J345,J349,J350,J352,J353	CONN PWR 2-J	277-1667-ND
24	1	J346	HEADER 12X2	S2012EC-20-ND
25	1	J347	HEADER 7X2	combine with 12x2 header
26	1	J348	USB_CONN	609-4618-6-ND
27	3	L101,L107,L108	1uH	
28	4	R129,R130,R131,R353	34R	
29	17	R200,R223,R224,R225,R226,	0R	
		R227,R228,R229,R311,R317,		
		R318,R347,R370,R371,R385,		
		R388, R310		
30	8	R220,R221,R222,R240,R242,	47k	
		R245,R247,R354		
31	6	R241,R246,R313,R331,R343,	1k	
		R367		
32	18	R251,R252,R253,R254,	10k	
		R333,R334,R335,R340,R341,		
		R342,R344,R350,R359,R360,		
		R363,R366,R368, R352		
33	8	R306,R319,R321,R329,R330,	2k21	
		R349,R373,R379		
34	3	R325,R326,R365	10R	
37	4	R332,R336,R337,R364	68R	
38	2	R378,R381	330k	
39	1	SW1	AS1E-2M-10-Z	563-1582-ND
40	1	S1	1825910-7	450-1804-ND
41	4	TP324,TP325,TP326,TP327	TP_BLACK	36-5001-ND
42	1	U1	AMP8DSQF65	rev H
43	1	U200	AT25DF512C	1265-1114-6-ND
44	1	U201	FT4232HL-Reel	768-1026-1-ND
45	1	U202	MCP1725	MCP1725-3302E/SN-ND
46	1	U203	TS3USB30E	296-25495-1-ND
47	1	U204	SN74LVC2G07	296-13494-1-ND
48	1	U205	93LC46BT-I/OT	93LC46BT-I/OTCT-ND
49	1	X1	12MHz	1253-1168-1-ND

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Additional Resources

- AnD8320 Datasheet
- AnD8302 Datasheet
- AmP Platform Datasheet
- AmPLink Configuration and Control

Revision History

Date	Revision
08/19/2019	Updated Jumper Selection Table for J202 and J214
01/29/2019	Initial

AnDAPT

On-Demand Power Management

https://www.andapt.com

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