AnD82XX Evaluation Board

AnD8240EB, AnD8204EB

Features

- Demonstrates AnD8240 or AnD8204 Adaptable PMIC:
  - Two 6A Synchronous Buck Regulators
  - Four LDOs (AnD8240) or four Load Switches (AnD8204)
  - 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 AnD8240EB and AnD8204EB are ready to use Evaluation Boards to evaluate the Dual-Buck AnD8240 and AnD8204 PMICs. Simply apply PV_{IN}, then measure default settings of 0.7V on the 2 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 AnD82XX 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
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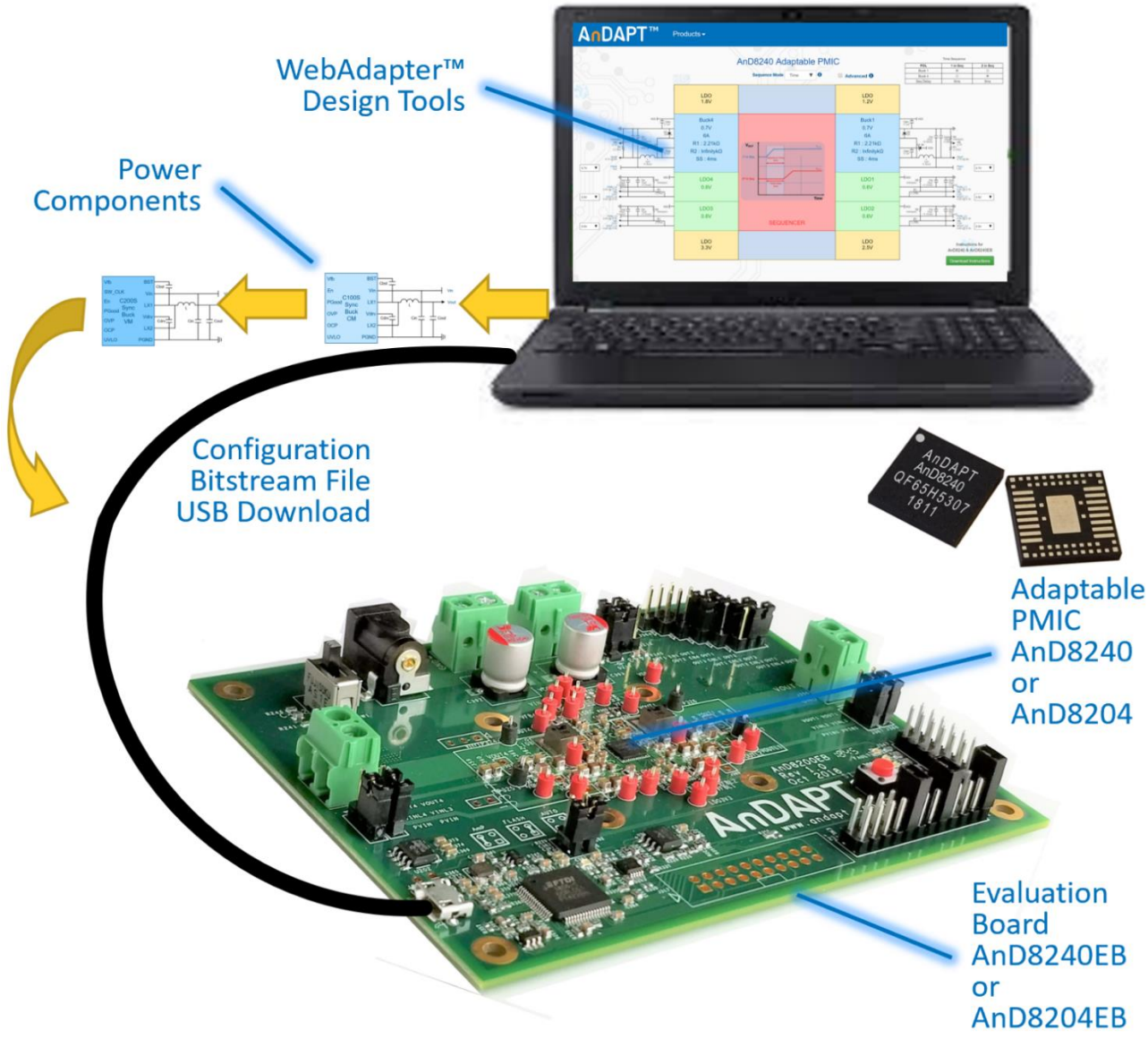
Application of Evaluation Board



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} and V_{OUT4} (0.7V default).

To change parameters:

Step 5. Open WebAdapter tool from AnDAPT web site

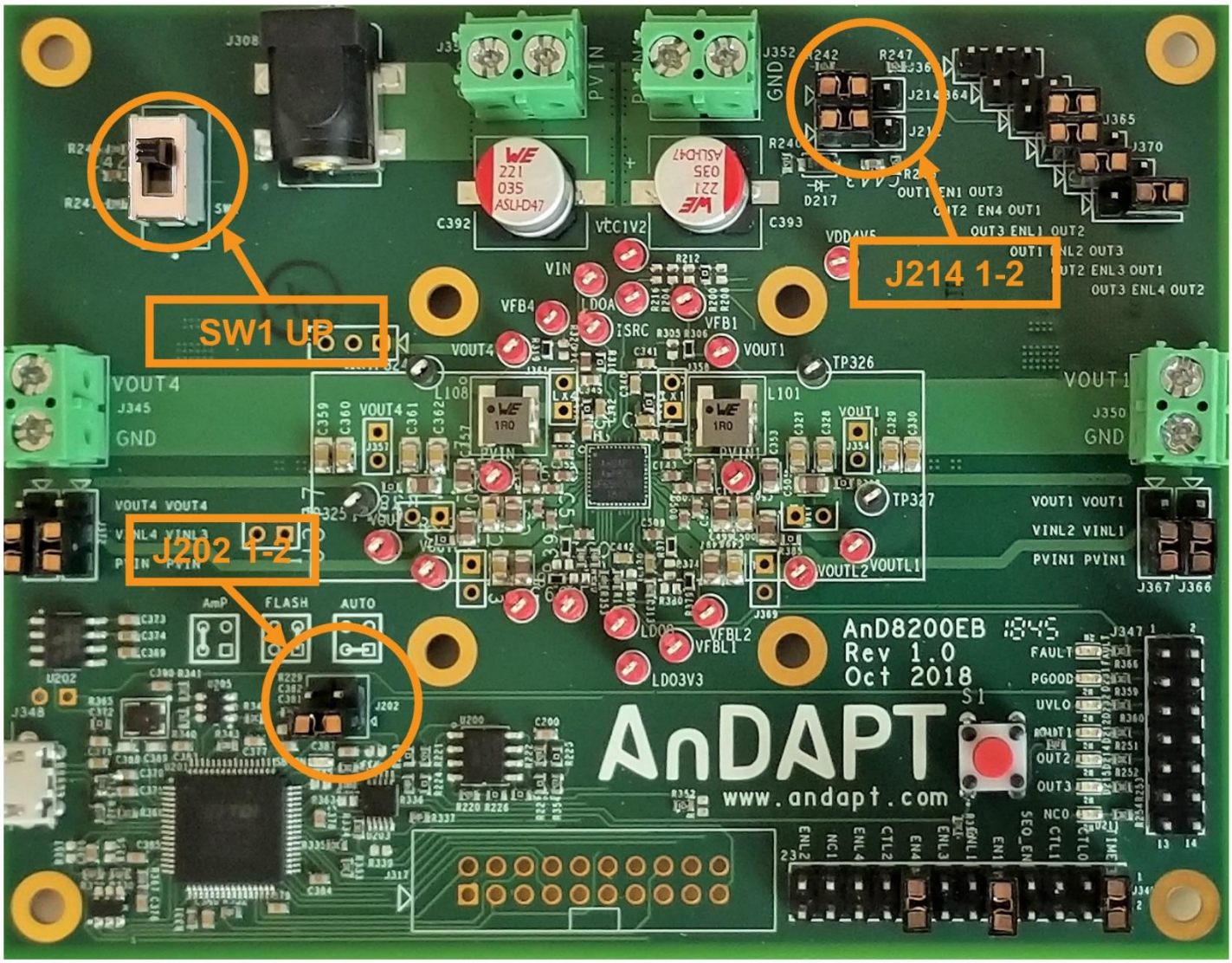
Step 6 Modify buck output voltages on V_{OUT1} and V_{OUT4} using WebAdapter Download Instructions (see WebAdapter™ View, page3)

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

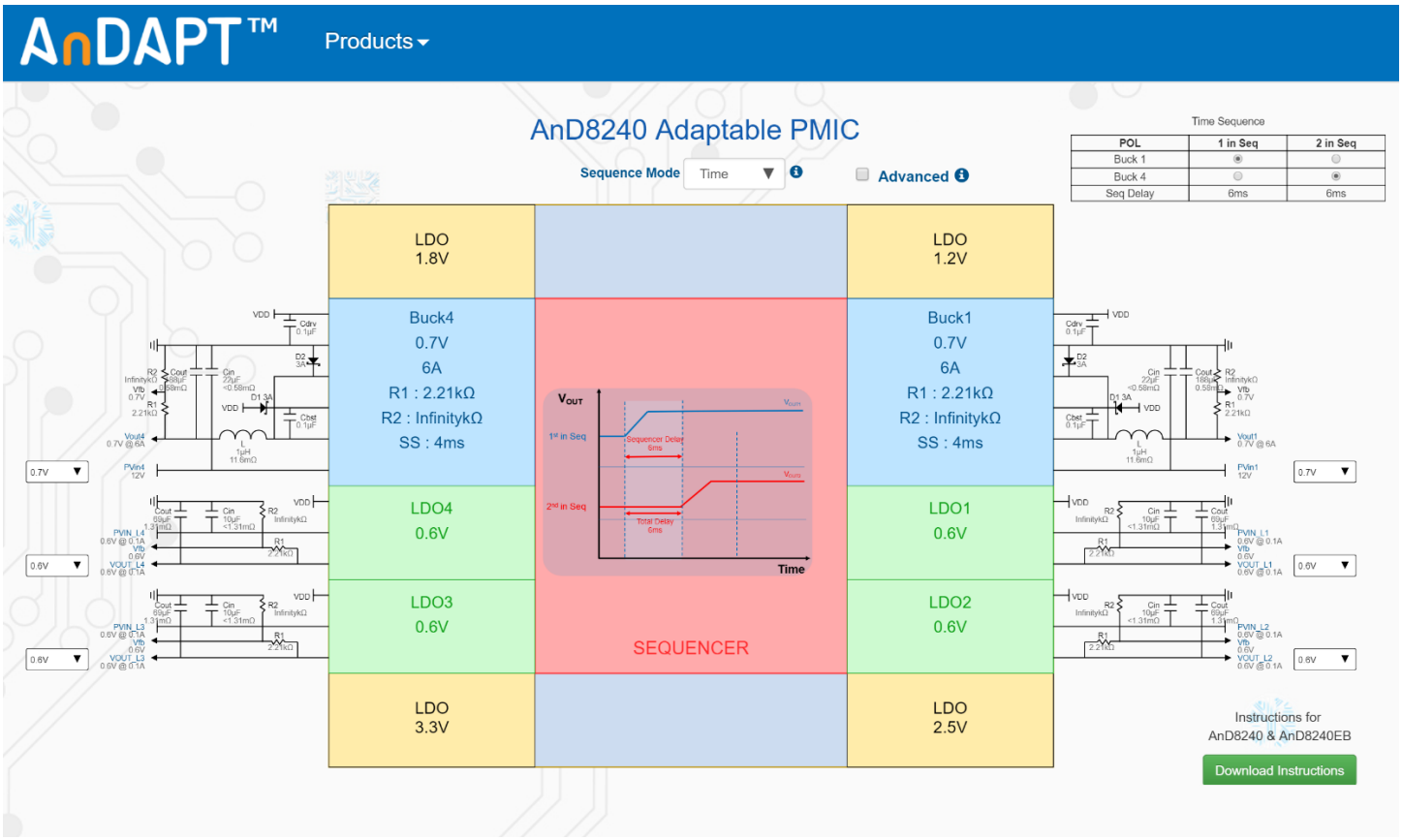
Jumper Selection Table for J202 and J214

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 

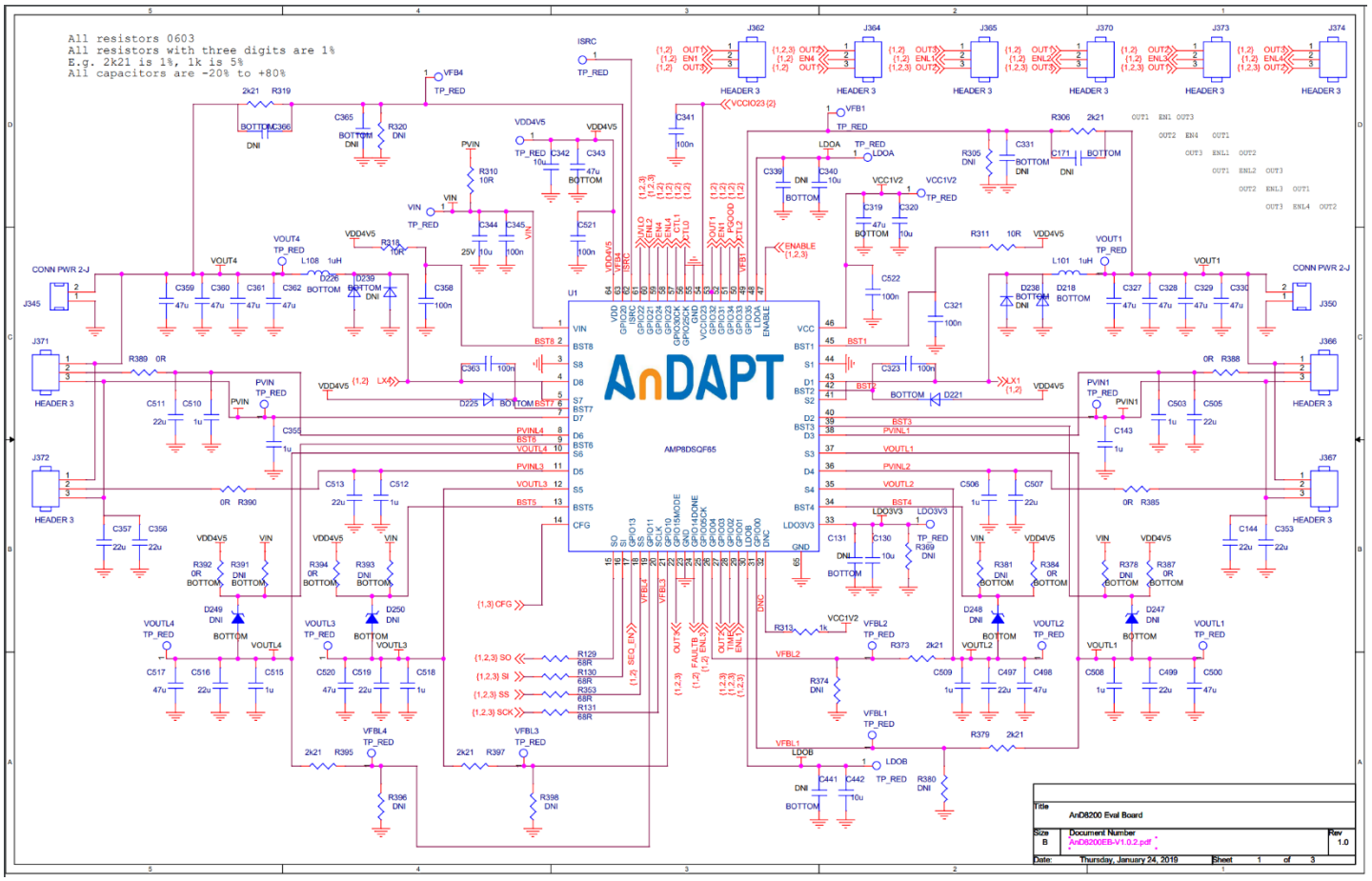
PMIC Power Up Jumper and Switch Settings



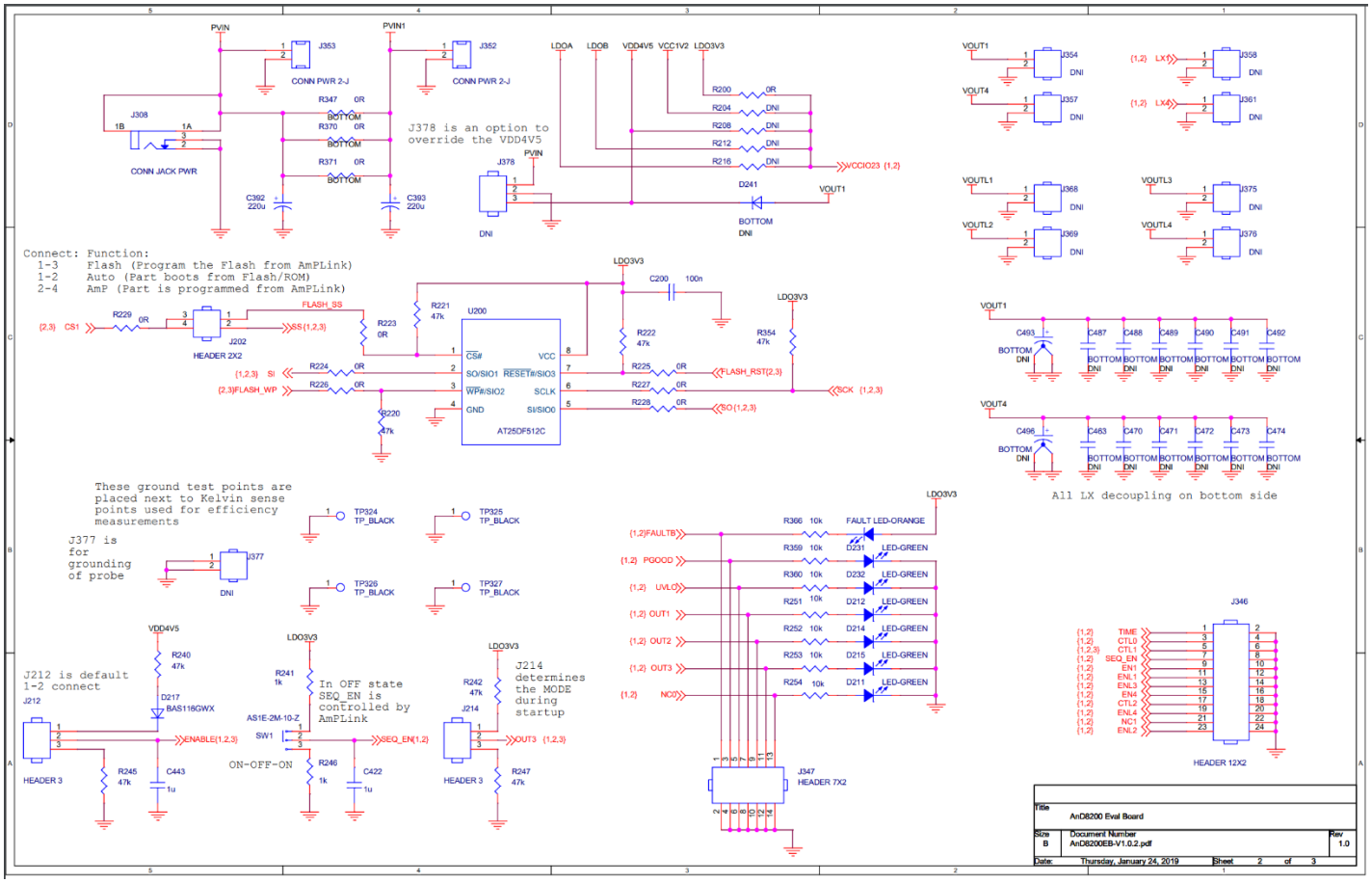
WebAdapter™ View, AnD8240 Web Design

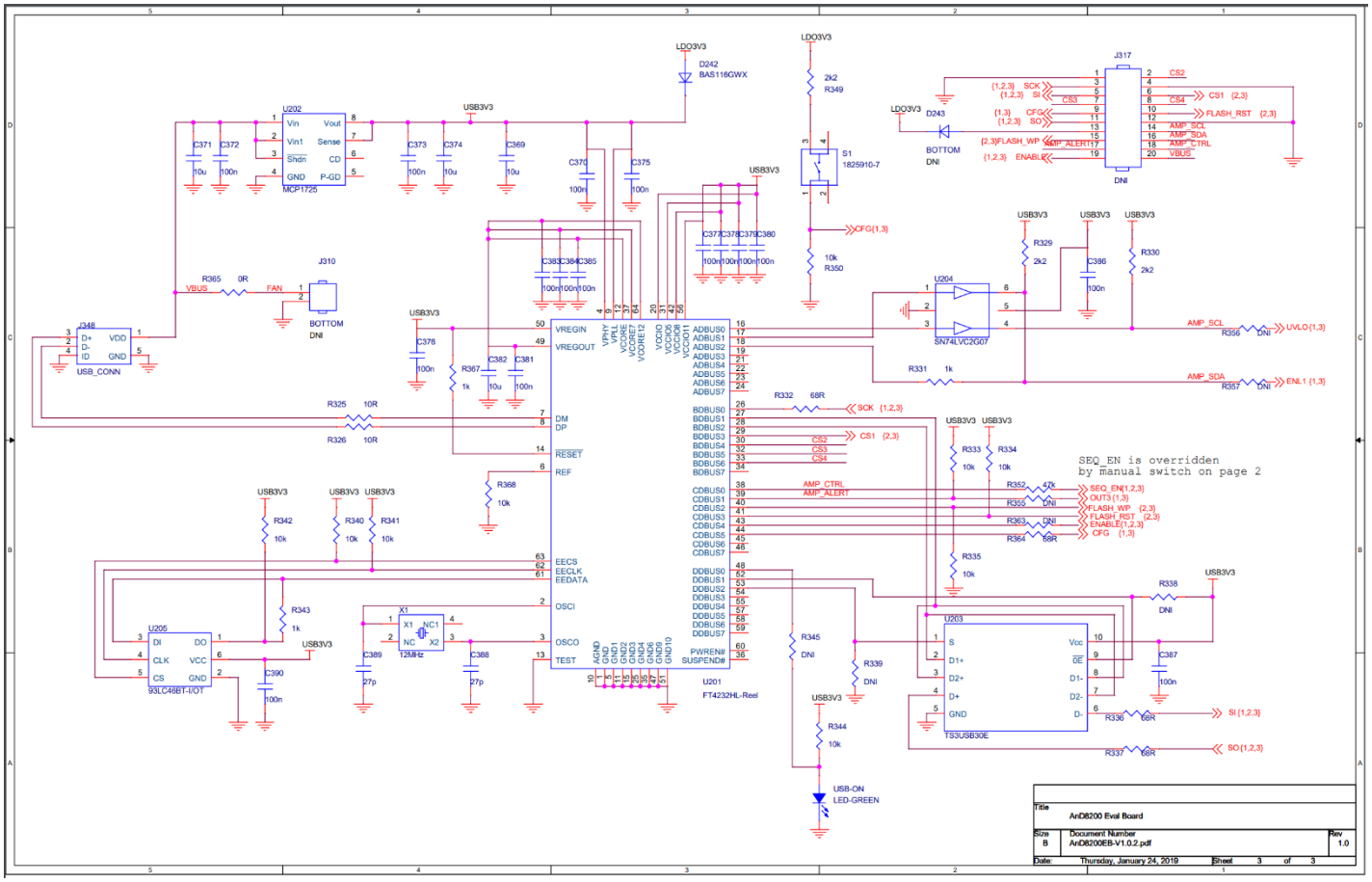


Schematics

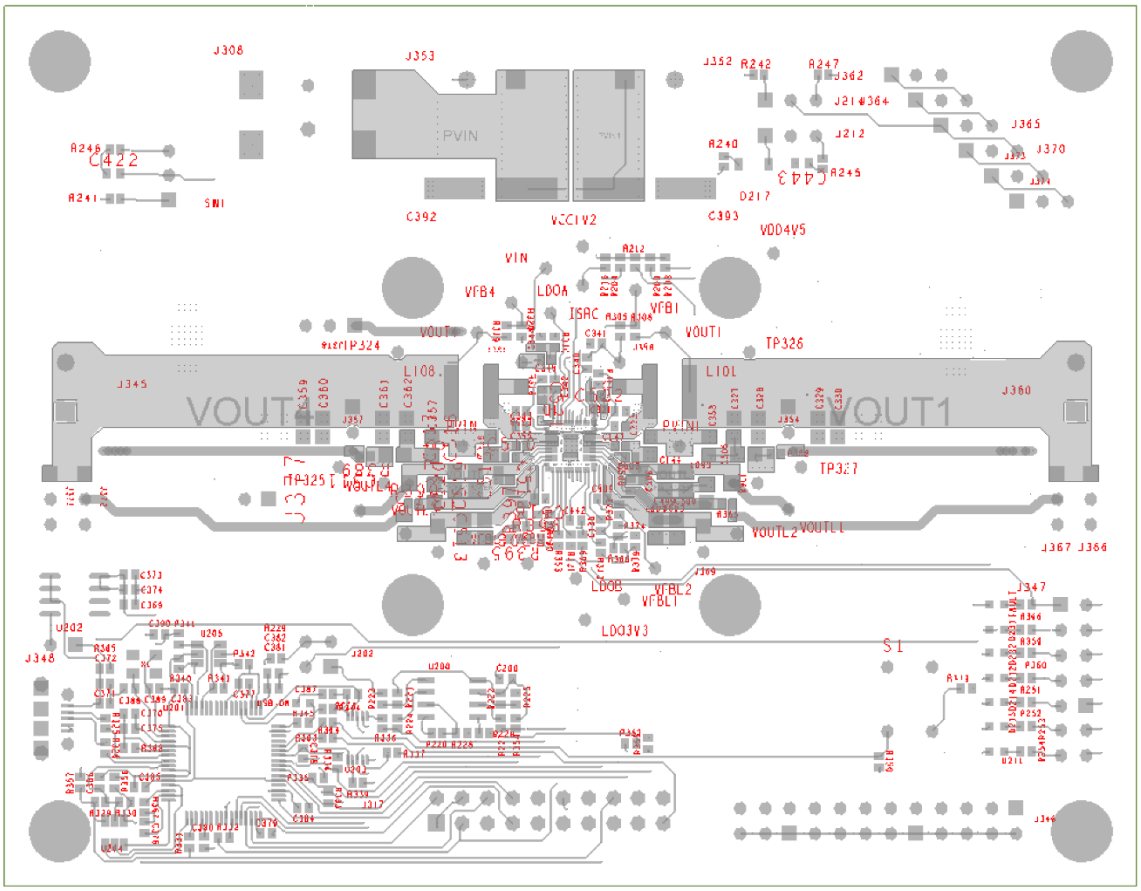


Schematics

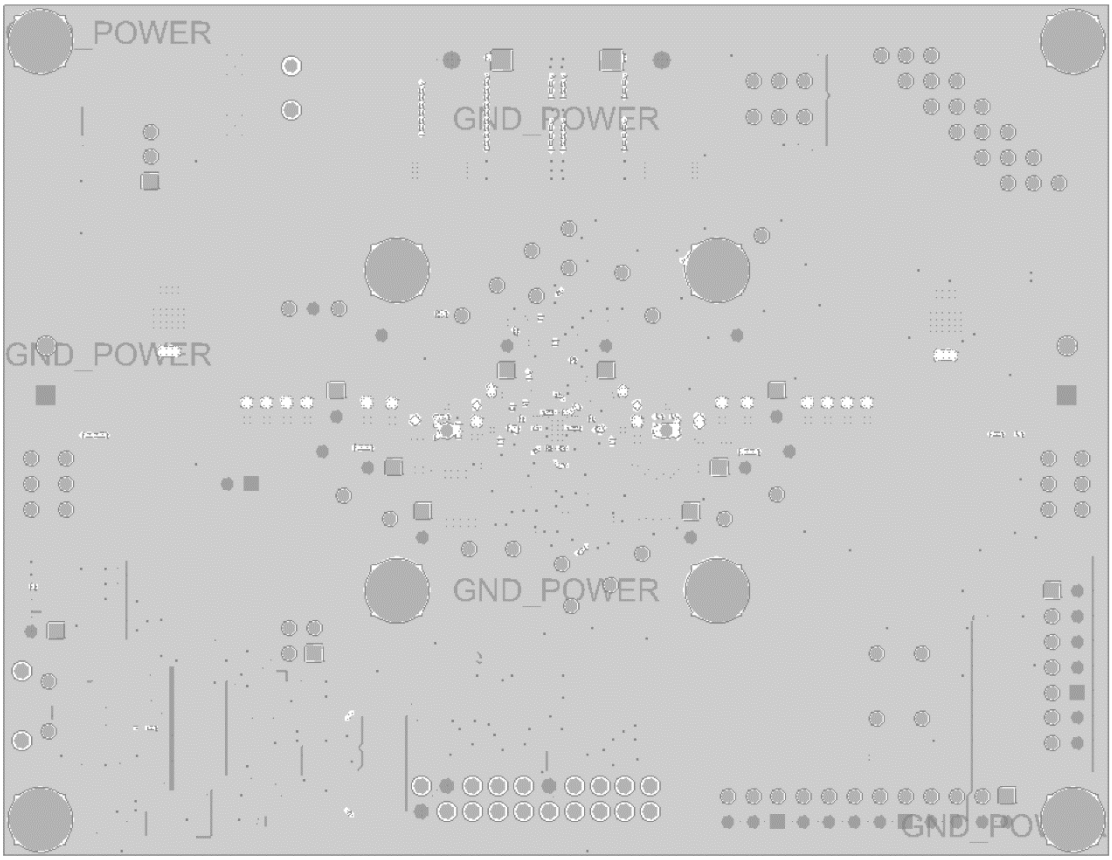

Connect: Function:
1-3 Flash (Program the Flash from AmPLink)
1-2 Auto (Part boots from Flash/ROM)
2-4 AmP (Part is programmed from AmPLink)
J378 is an option to override the VDD4V5
These ground test points are placed next to Kelvin sense points used for efficiency measurements
J377 is for grounding of probe
J212 is default 1-2 connect
In OFF state SEQ_EN is controlled by AmPLink
J214 determines the MODE during startup
All LX decoupling on bottom side
AnD8200 Eval Board
Document Number AnD8200EB-V1.0.2.pdf
Thursday, January 24, 2019


SEQ_EN is overridden by manual switch on page 2
AnD8200 Eval Board
Document Number AnD8200EB-V1.0.2.pdf
Thursday, January 24, 2019

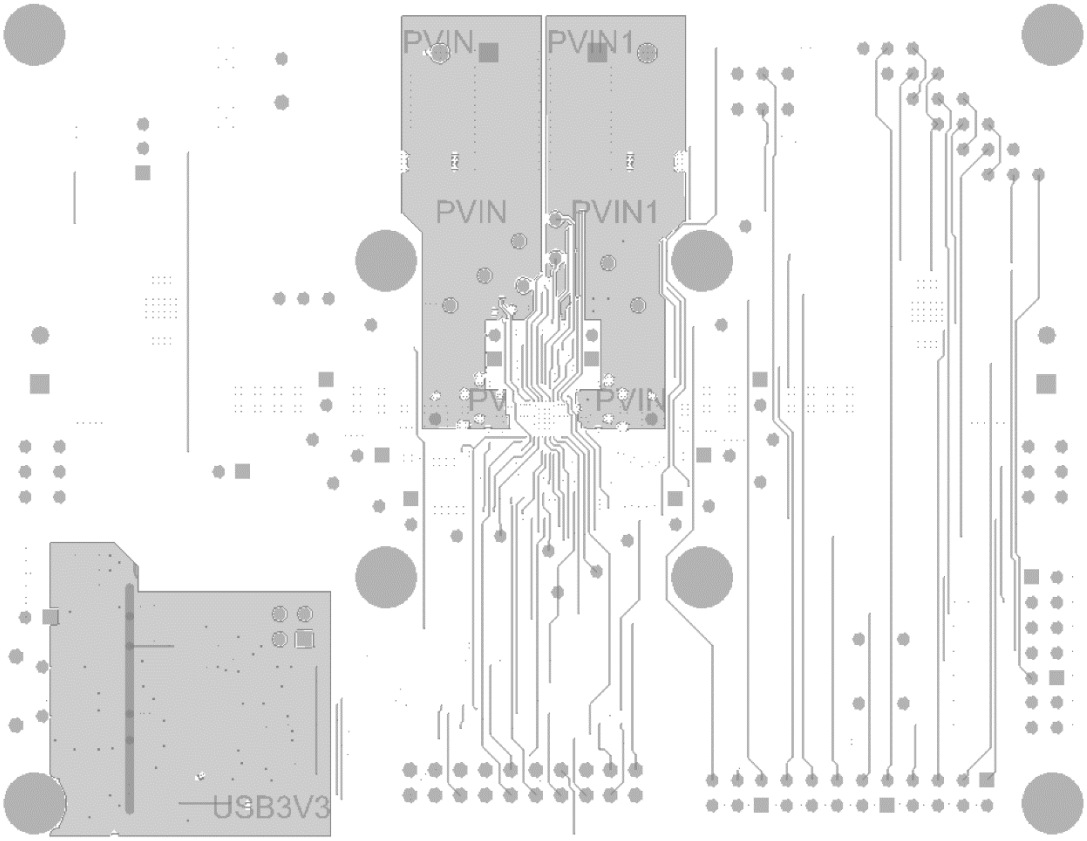
PCB Top Layer with Silk Screen



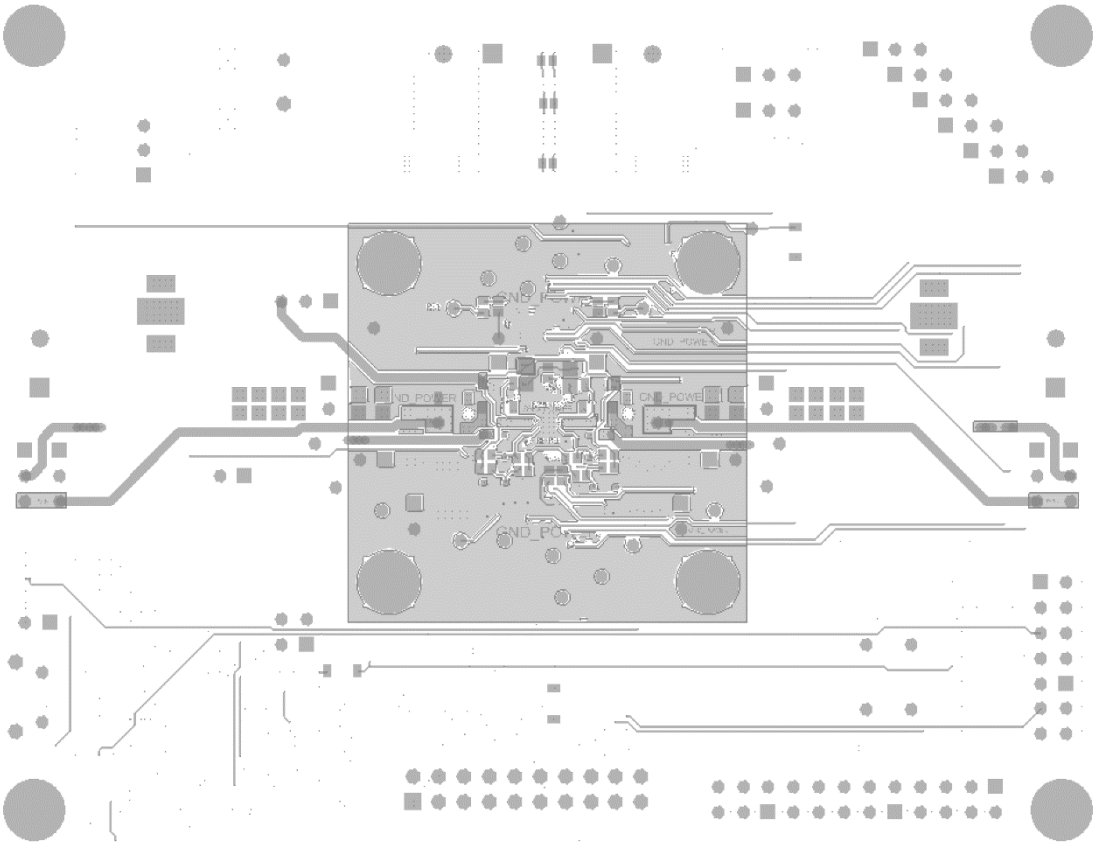
PCB Layer 2 GND



PCB Layer 3 PVIN



PCB Bottom Layer with Silk Screen



Bill of Materials

Item	Qty	Reference	Value	Manufacturer
1	10	C130,C131,C320,C340,C342,	CAP CER 10UF 10V X5R 0603	490-10474-2-ND or equivalent
		C369,C371,C374,C382,C442		
1a	1	C344	CAP CER 10UF 25V X5R 0603	490-7202-2-ND or equivalent
2	22	C131,C171,J310,C331,C339,		
		C365,C366,C441,C463,C470,		
		C471,C472,C473,C474,C487,		
		C488,C489,C490,C491,C492,		
		C493,C496		
3	12	C143,C355,C422,C443,C503,	CAP CER 1UF 35V X7R 0603	445-174215-2-ND or 25V+ rating X7R or X5Requivalent
		C506,C508,C509,C510,C512,		
		C515,C518		
4	12	C144,C353,C356,C357,C497,	22u	490-10749-1-ND
		C499,C505,C507,C511,C513,		
		C516,C519		
5	25	C200,C321,C323,C341,C345,	100n	Wurth 885012206095
		C358,C363,C370,C372,C373,		
		C375,C376,C377,C378,C379,		
		C380,C381,C383,C384,C385,		
		C386,C387,C390,C521,C522		
6	2	C319,C343	47u	Wurth 885012107006
7	12	C327,C328,C329,C330,C359,	47u	Wurth 885012107006
		C360,C361,C362,C498,C500,		
		C517,C520		
8	2	C388,C389	27p	399-1054-6-ND
9	2	C392,C393	220u	732-8513-1-ND
10	7	D211,D212,D214,D215,D231,	LED-GREEN	732-4971-6-ND (Wurth 150060GS75000)
		D232,USB-ON		
11	2	D217, D242	BAS116GWX	1727-7321-1-ND
12	4	D218,D221,D225,D226	BOTTOM	DB2W40300LDKR-ND
13	4	D238,D239,D241,D243	BOTTOM	
14	4	~~D247,D248,D249,D250~~	5V6	1727-8226-1-ND
15	1	FAULT	LED-ORANGE	732-4978-6-ND (Wurth 150060RS75000)
16	21	VOUTL1,VOUT1,VFBL1,VFB1,	TP_RED	36-5000-ND
		PVIN1,VOUTL2,VFBL2,		
		VOUTL3,VFBL3,VOUTL4,		
		VOUT4,VFBL4,VFB4,VCC1V2,		
		LDO3V3,VDD4V5,VIN,PVIN,		
		LDOB,LDOA,ISRC		
17	1	J202	HEADER 2X2	732-5294-ND (Wurth 61300421121)
18	12	J212,J214,J362,J364,J365,	HEADER 3	732-5316-ND (Wurth 61300311121)
		J366,J367,J370,J371,J372,		
		J373,J374		
19	1	J308	CONN JACK PWR	732-5933-6-ND (Wurth 694108106102)

Item	Qty	Reference	Value	Manufacturer
20	29	R204,R208,R212,R216,R305,	DNI	
		J317,R320,R338,R339,R345,		
		J354,R355,R356,R357,J357,		
		J358,J361,R363,J368,R369,		
		J369,R374,J375,J376,J377,		
		J378,R380,~~R384,R387,R392~~,		
		~~R394~~,R396,R398		
21	4	J345,J350,J352,J353	CONN PWR 2-J	277-1667-ND
22	1	J346	HEADER 12X2	S2012EC-20-ND
23	1	J347	HEADER 7X2	S2012EC-20-ND
24	1	J348	USB_CONN	609-4618-6-ND
25	2	L101,L108	1uH	(Wurth 74438357010)
26	8	R129,R130,R131,~~R325,R326~~,	68R	1% resistor - any supplier
		R332,R336,R337,R353,R364		
27	23	R200,R223,R224,R225,R226,	0R	any supplier
		R227,R228,R229,R347,R365,		
		R370,R371,R385,R388,R389,		
		R390, R310, R311, R318		
		R384,R387,R392, R394		
28	9	R220,R221,R222,R240,R242,	47k	1% resistor - any supplier
		R245,R247,R352,R354		
29	6	R241,R246,R313,R331,R343,	1k	1% resistor - any supplier
		R367		
30	16	R251,R252,R253,R254,R333,	10k	1% resistor - any supplier
		R334,R335,R340,R341,R342,		
		R344,R350,R359,R360,R366,		
		R368		
31	6	R306,R319,R373,R379,R395,	2k21	1% resistor - any supplier
		R397		
32	2	~~R310,R311,R318~~ R325,R326	10R	1% resistor - any supplier
33	3	R329,R330,R349	2k2	1% resistor - any supplier
34	0	~~R378,R381,R391,R393~~	DNI	1% resistor - any supplier
35	1	SW1	AS1E-2M-10-Z	563-1582-ND
36	1	S1	1825910-7	450-1804-ND
37	4	TP324,TP325,TP326,TP327	TP_BLACK	36-5001-ND
38	1	U1	AMP8DSQF65	Andapt Part
39	1	U200	AT25DF512C	1265-1114-6-ND
40	1	U201	FT4232HL-Reel	768-1026-1-ND
41	1	U202	MCP1725	MCP1725-3302E/SN-ND
42	1	U203	TS3USB30E	296-25495-1-ND
43	1	U204	SN74LVC2G07	296-13494-1-ND
44	1	U205	93LC46BT-I/OT	93LC46BT-I/OTCT-ND
45	1	X1	12MHz	1253-1168-1-ND

Additional Resources

- AnD8240 Datasheet
- AnD8204 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

Trademarks