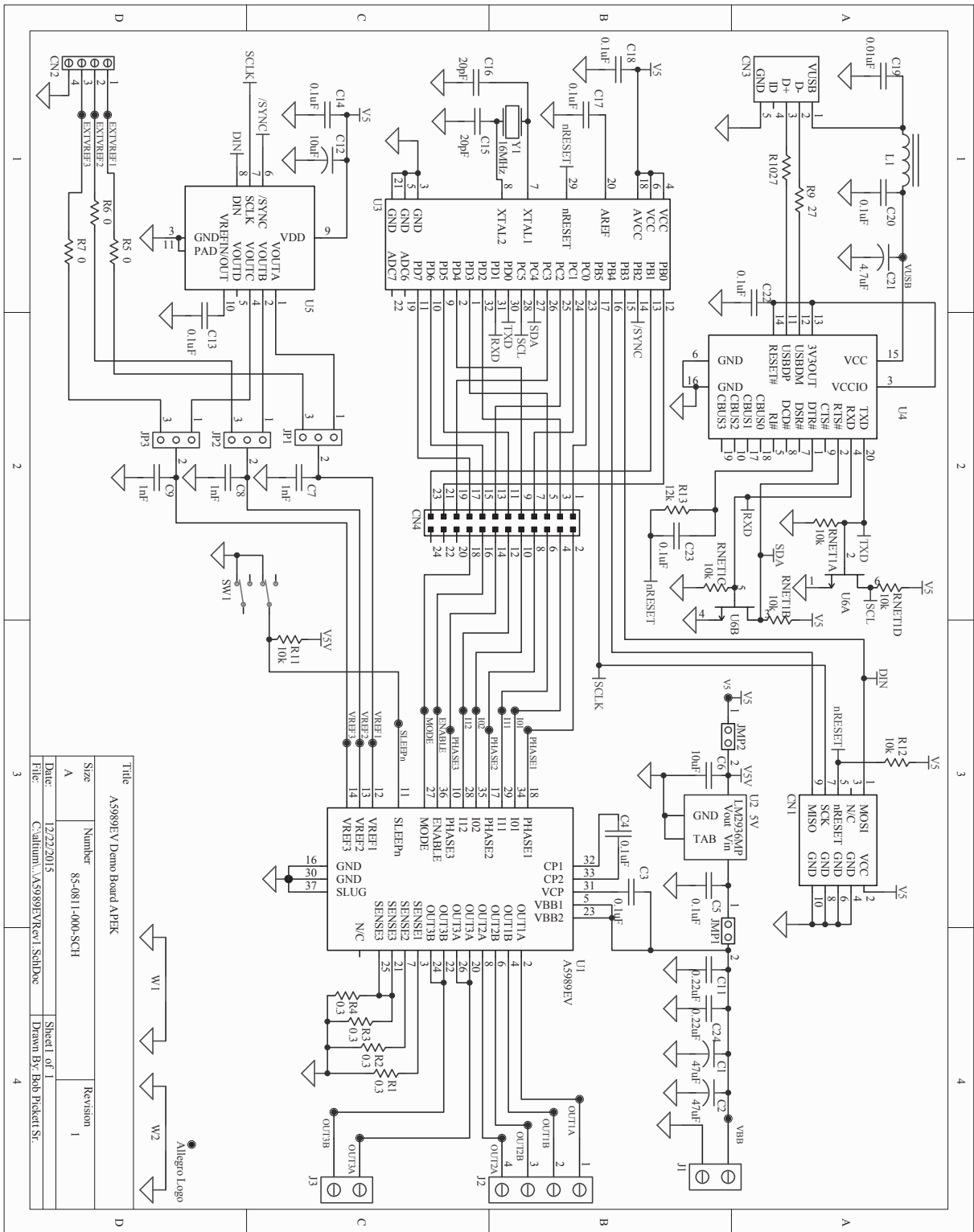


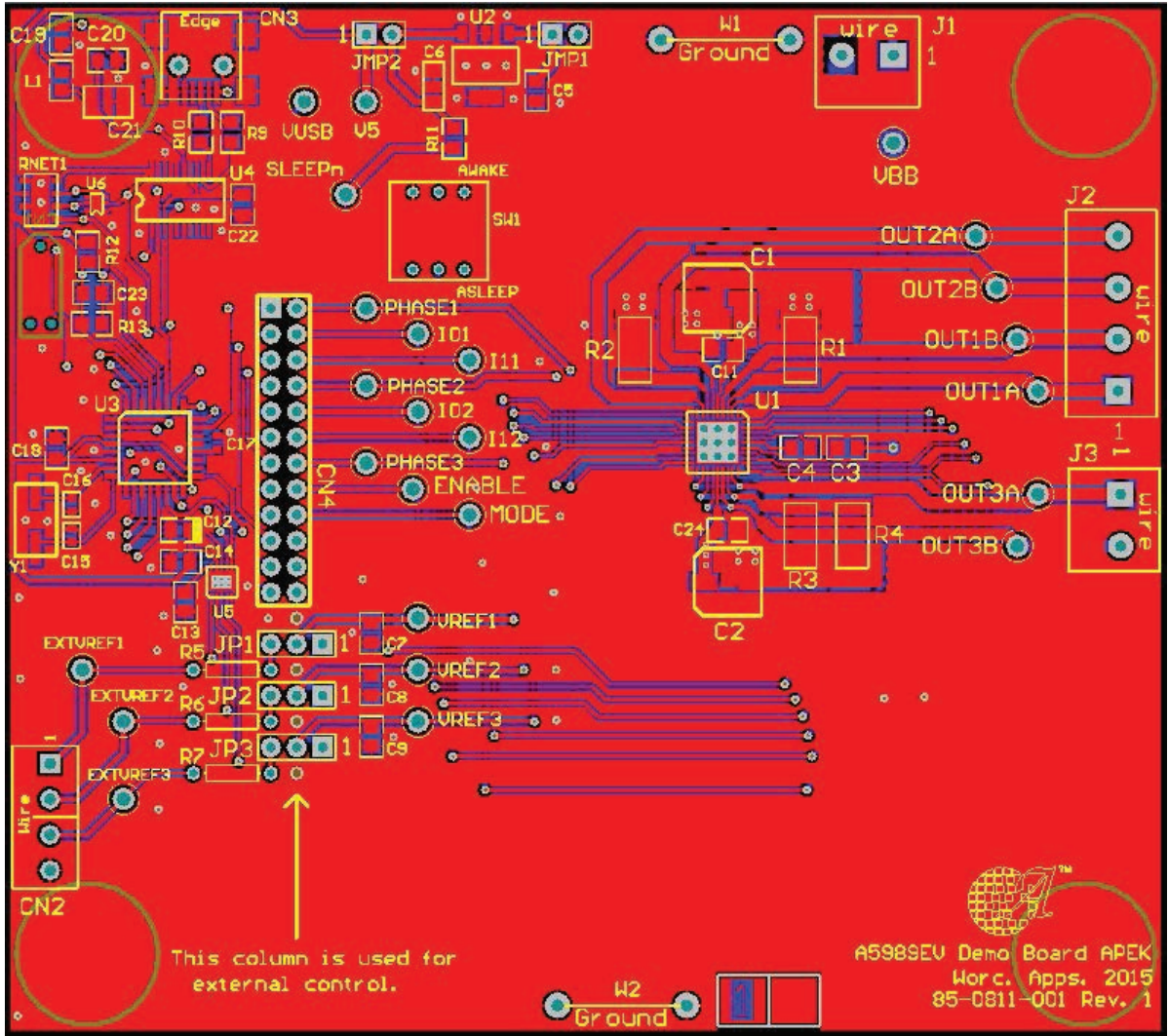
## Demo Board Schematic/Layout

### SCHEMATIC

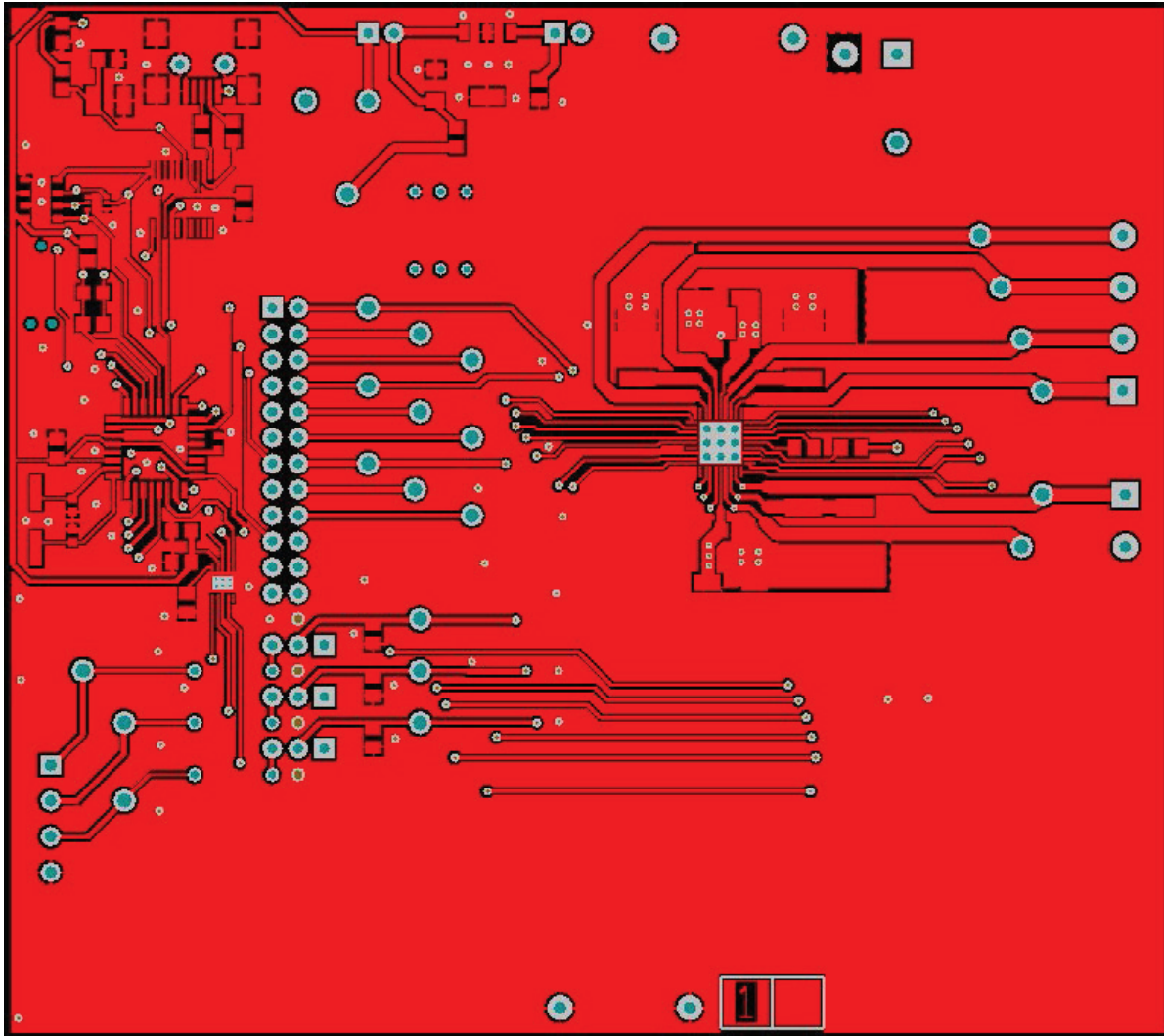


Title		A5989EV Demo Board APEK	
Size	Number	85-0811-000-SCH	
Date	12/22/2015	Sheet 1 of 1	
File	C:\allegro\A5989EV\Rev1.SchDoc	Drawn By:	Bob Pickett Sr.
Revision		1	

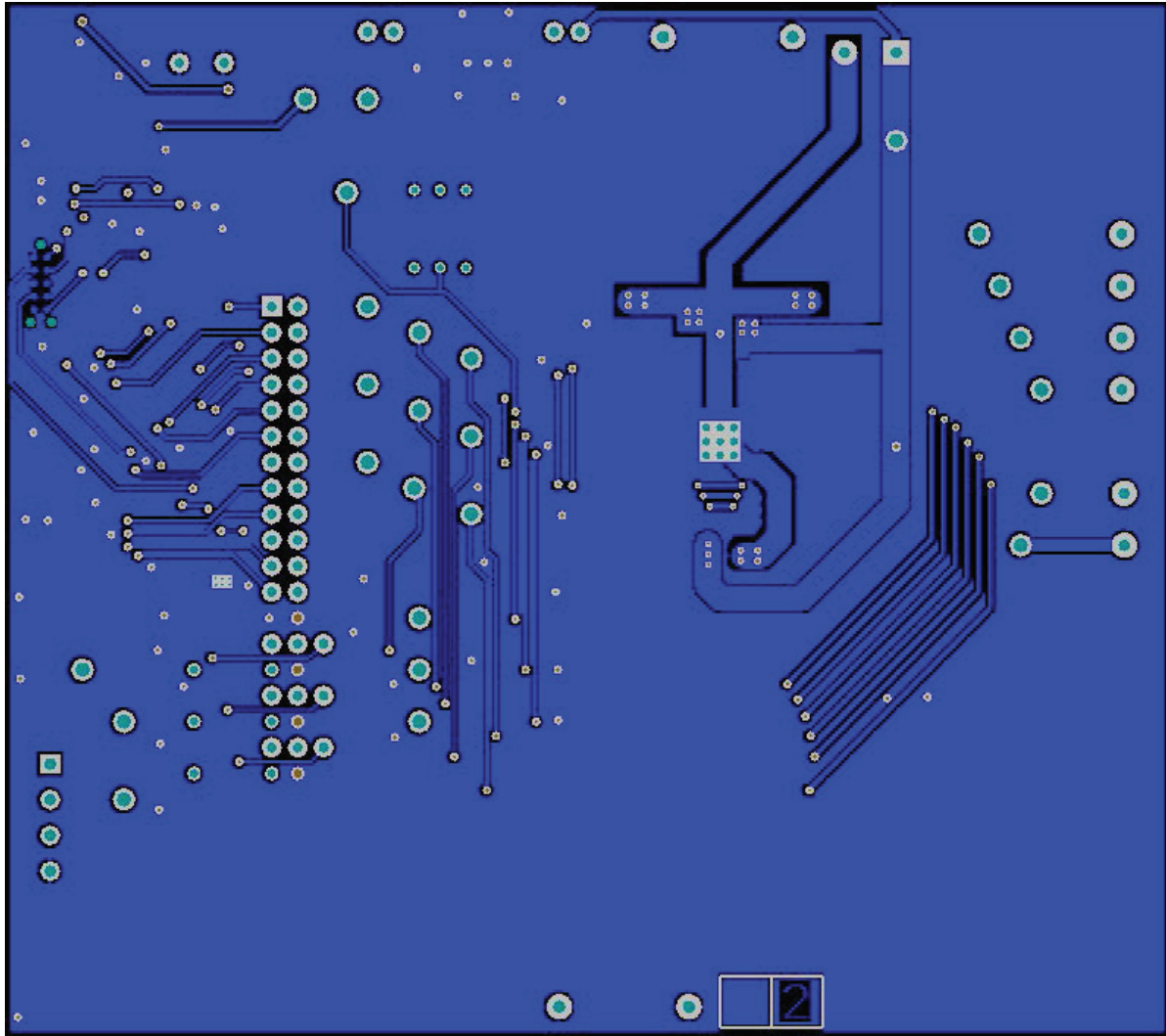
LAYOUT



LAYOUT



LAYOUT



## BILL OF MATERIALS

APEK\_BOARD\_DEMO\_A5989EV

85-0811-000-BOM

All Devices MUST be ROHS Compliant

Page 1 of 1

Bill of Materials

Rev. 1

12/22/2015

Item	Quantity	Designator	value	Description	PartType	Footprint
1	2	C1, C2	47uF	50V Capacitor	Chem-Con EMZA500ADA470MF80G; Digikey 565-2568-1-ND	UCC F61 Cap
2	3	C3, C4, C5	0.1uF	50V Capacitor	TDK C2012X7R1H104K085AA; Digikey 445-7534-1-ND	0805
3	1	C6	10uF	10V Capacitor	Taiyo Yuden LMK316BJ106KL-T; Digikey 587-1342-1-ND	1206
4	3	C7, C8, C9	1nF	50V Capacitor	Panasonic ECJ-2VB1H102K; Digikey PCC102BNCT-ND	0805
5	2	C11, C24	0.22uF	50V Capacitor	Murata GCM21BR71H224KA37L; Digikey 490-4970-1-ND	0805
6	1	C12	10uF	10V Capacitor	Abrakon ATCC-211P-010-106M-T; Digikey ATCC-211P-010-106M-TCT-ND	Polarized0805Cap
7	6	C13, C14, C18, C20, C22, C23	0.1uF	16V Capacitor	Murata GRM219R71C104KA01D; Digikey 490-1683-1-ND	0805
8	2	C15, C16	20pF	50V Capacitor	TDK C1608COG1H200J; Digikey 445-5052-1-ND	0603
9	1	C17	0.1uF	50V Capacitor	TDK C1608X7R1H104K080AA; Digikey 445-1314-1-ND	CAPC1608L
10	1	C19	0.01uF	50V Capacitor	Murata GRM216R71H103KA01D; Digikey 490-1664-1-ND	0805
11	1	C21	4.7uF	16V Capacitor	Taiyo Yuden EMK325B7475KN-T; Digikey 587-1392-1-ND	1210
12	2	CN2		Use two 2-Pin Connectors	On Shore ED555/2DS; Digikey ED1514-ND	4-Pin 3.5mm Screwdown Connector2
13	1	CN3		USB Mini B Recepticle	JAE Electronics DX2R005HN2E700; Digikey 670-1190-1-ND	DX2R005HN2E700
14	1	CN4		Cut from 40-Pin Strip	Tyco 9-146257-0; Digikey A34977-40-ND	24-Pin Dual Row 0.1" Connector
15	25	ENABLE, EXTREF1, EXTREF2, EXTREF3, I01, I02, I11, I12, MODE, OUT1A, OUT1B, OUT2A, OUT2B, OUT3A, OUT3B, PHASE1, PHASE2, PHASE3, SLEEPn, V5, VBB, VREF1, VREF2, VREF3, VUSB		Large Test Point	Keystone Electronics 5010; Digikey 5010K-ND	PAD 57 125 TP HB
16	4			Bumpom Foot	3M SJ-5303 (CLEAR); Digikey SJ5303-7-ND	Bumpom Foot
17	2	J1, J3		2-Pin Screw Down Connector	On Shore Technology ED120/2DS; Digikey ED1609-ND	2-pin screw down connector, 2-pin screw down connector2
18	1	J2		4-Pin Screw Down Terminal Block	On Shore ED120/4DS; Digikey ED2227-ND	4-pin screw down connector2
19	13 Pins	JMP1, JMP2, JP1, JP2, JP3		Cut pins from 50-pin strip.	Samtec TSW-150-07-T-S; Digikey SAM1035-50-ND	2-pos. shunt, 3-pos. shunt
20	1	L1		Ferrite Bead	Laird MI0805K400R-10; Digikey 240-2389-1-ND	0805
21				pcb	85-0811-001 Rev. 1	
22	6 Pins	QR5, QR6, QR7		Sockets for R5, R6 and R7	Mill-Max 310-43-164-41-001000; Digikey ED6264-ND	
23	4	R1, R2, R3, R4	0.3	1W Resistor	Yageo RL2512FK-070R3L; Digikey 311-0.3TCT-ND	2512 (6432 Metric)
24	3	R5, R6, R7	0	Resistor Lead (0.38mm-0.64mm)	N/A	AXIAL-0.3
25	2	R9, R10	27	1/8W Resistor	Vishay/Dale CRCW080527R0FKEA; Digikey 541-27.0CCT-ND	0805
26	2	R11, R12	10k	1/8W Resistor	Panasonic ERJ-6GEYJ103V; Digikey P10KACT-ND	0805
27	1	R13	12k	1/8W Resistor	Panasonic ERJ-6ENF1202V; Digikey P12.0KCCT-ND	0805
28	1	RNET1	10k	4 Isolated Resistors	CTS 744C083103JP; Digikey 744C083103JPCT-ND	CTS 744 Series
29	1	SW1		Dual SPDT Switch	Grayhill 76STC02T; Digikey 76STC02T-ND	76STC02T
30	1	U1		Bipolar Stepper and DC Motor Driver	A5989EV	36EV
31	1	U2	5V	Linear Voltage Regulator	National LM2936MP-5.0/NOPB; Digikey LM2936MP-5.0CT-ND	SOT223
32	1	U3		8-Bit Microcontroller	Atmel ATMEGA328P-AUR; Digikey ATMEGA328P-AURCT-ND	32-TQFP (7x7)
33	1	U4		USB to UART IC	FTDI FT231XS-R; Digikey 768-1129-1-ND	SSOP-20
34	1	U5		Quad 12-Bit DAC	Analog Devices AD5624RBCPZ-3REEL7; Digikey AD5624RBCPZ-3REEL7CT-ND	10-Pin EE w/slug
35	1	U6		Dual N-CH Fet's	Rohm UM6K1NTN; Digikey UM6K1NTNCT-ND	SOT-363
36	2	W1, W2		22 Gauge Buss Wire (300mils above pcb)		Scope Ground
37	1	Y1	16MHz	16MHz Crystal Oscillator(20pF Caps)	ECS ECS-160-20-3X-TR; Digikey XC1776CT-ND	ECS CSM-3X

**Revision History**

Number	Date	Description
-	August 23, 2016	Initial release

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