Variant: 001 Generated: 6/22/2016 3:56:59 PM TID #: 00818

## 18 TIDA-00818 REV E1 Bill

enerated: ID #:	6222016 3:56:59 PM O0818  TIDA-00818 REV E1 Bill of Materials  INSTRUMENTS						
item#	Designator	Quantity	Value	PartNumber TIDA-00818	Manufacturer	Description	PackageReference
2	PCB1 #, [NoValue], 0, 1, 2, 3, 4, 5, 6, 7, 8,	13		EVQ-PAD04M	Any Panasonic	Printed Circuit Board SWITCH TACTILE SPST-NO 0.02A 15V, TH	6x4.3x6mm
3	9, Ship Mode 3.3V, BAT+, B0_OTG, COL0, COL1, COL2, LCD_POWER, ROW0, ROW1, ROW2, ROW3, SCL_SDA	13	Red	5010	Keystone	Test Point, Multipurpose, Red, TH	Red Multipurpose Testpoint
5	BQ SYS BT Load, GPRS Load, SD Load, WIFI Load	4	Red Green	150060RS75000 150060VS75000	Wurth Elektronik Wurth Elektronik	LED, Red, SMD LED, Green, SMD	LED_0603
7	BT1 C1, C2, C3, C4, C5, C17, C19, C21, C22, C23, C24, C25, C27, C28, C29, C30, C31	17	22uF	1106 GRM188R61A226ME15D	Keystone MuRata	SMT HCLDER FOR 26650 BATTERY  CAP, CERM, 22 µF, 10 V, +/- 20%, XSR, 0603	SMT HOLDER FOR 26650 BATTERY 0603
9	C6, C26 C7	1	0.1uF 10uF	GRM155R61E104KA87D CL05A106MP5NUNC	MuRata Samsung Electro-Mechanics	CAP, CERM, 0.1 µF, 25 V, +/- 10%, X5R, 0402 CAP, CERM, 10 µF, 10 V, +/- 20%, X5R, 0402	0402 0402
11	C8, C13 C9	1	0.1uF 100uF	C1005X7R1H104M JMK316BJ107ML-T	TDK Talyo Yuden MuRata	CAP, CERM, 0.1 µF, 50 V, +/- 20%, X7R, 0402 CAP, CERM, 100 µF, 6.3 V, +/- 20%, X5R, 1206 CAP, CERM, 0.1 µF, 16 V, +/- 10%, X7R, 0402	0402 1206
12 13	C10, C45, C46 C11, C20	2	0.1uF 0.22uF	GRM155R71C104KA88D C1005X5R1E224M050BC	TDK	CAP, CERM, 0.22 µF, 25 V, +/- 20%, X5R, 0402	0402
14 15 16	C12 C14, C15	2	1uF 1000pF 0.1uF	GRM155R6YA105KE11D GRM155R61H102KA01D	MuRata MuRata	CAP, CERM, 1 µF, 35 V, +/- 10%, X5R, 0402 CAP, CERM, 1000 pF, 50 V, +/- 10%, X5R, 0402 CAP, CERM, 0.1 µF, 50 V, +/- 10%, X7R, 0402	0402 0402
17	C16 C18, C34	2	20Upr-	C1005X7R1H104K GRM1555C1H201JA01D	TDK MuRata	CAP, CERM, 200 pr., 50 V, +7- 5%, CUGINPO, 0402	0402 0402
18 19	C35	1 1	0.01uF 0.01uF	GRM155R71H103KA88D CGA2B3X7R1H103K050BB	MuRata TDK	CAP, CERM, 0.01 µF, 50 V, +/- 10%, X7R, 0402 CAP, CERM, 0.01 µF, 50 V, +/- 10%, X7R, AEC-Q200 Grade 1, 0402	0402 0402
20 21	C35 C37	1	2.2uF 1uF	C1005X5R1C225K050BC GRM155R61A105KE15D	TDK MuRata	CAP, CERM, 2.2 µF, 16 V, +/- 10%, X5R, 0402 CAP, CERM, 1 µF, 10 V, +/- 10%, X5R, 0402	0402 0402
22 23	C38 C39, C40, C41,	4	0.047uF 10uF	GRM155R71E473KA88D GRM188R61E106MA73	MuRata MuRata	CAP, CERM, 0.047 µF, 25 V, +/- 10%, X7R, 0402 CAP, CERM, 10 µF, 25 V, +/- 20%, X5R, 0603	0402 0603
24	C43 C42	1	4.7uF	C1005X5R1A475K050BC	TDK	CAP. CERM. 4.7 uF. 10 V. +/- 10%, XSR, 0402	0402
25 26 27	D1 DS1	1	10uF 30V	GRM155R61A106ME11 SS1P3L-M3/84A LCD-20i4B	MuRata Vishay-Semiconductor	CAP, CERM, 10 µF, 10 V, +/- 20%, XSR, 0402 Diode, Schottky, 30 V, 1.5 A, DO-220AA 20x4 Liquid Crystal Display with HD44780 driver	DO-220AA LCD Module,
		1			Gravitech		98x60mm
28 29	FID4, FID5, FID6 GND, GND2, GND3, GND4, GND5	5		N/A 5011	N/A Keystone	Fiducial mark. There is nothing to buy or mount. Test Point, Multipurpose, Black, TH	Fiducial Black Multipurpose Testpoint
30 31	H1, H2, H3, H4 H5, H6, H7, H8	4		NY PMS 440 0025 PH 1902E	B&F Fastener Supply Keystone	Machine Screw, Round, #4-40 x 1/4, Nylon, Philips panhead Standoff, Hex, 1°L #4-40 Nylon	Screw Standoff
32	H9, H10 H11, H12	2		NY HN 440 NY PMS 440 0038 PH	B&F Fastener Supply B&F Fastener Supply	Nut. Hex. 4-40. Nylon	
34 35	J3 J7, J8, J14, J15,	1 5		52400-25ALF PBC03SAAN	FCI Sullins Connector Solutions	Screw, Pan Head , 4-40, 3/8", Nylon CONN SMARTCARD 8POS OUTDOOR PCB Header, 100mil, 3x1, Gold, TH	62x6.5x40mm PBC03SAAN
	J16 J10, J18, J29	3		PEC02SAAN	Sullins Connector Solutions	Header, 100mil, 2x1, Tin, TH	Header 2 PIN
37	J11, J12	2		131-3701-261 C707-10M006-0492	Emerson Network Power	Connector, SMB, Vertical RCP 0.4GHz, 50 ohm, TH Connector, 6-Pos SIMLOCK, 2.54mm, SMD	100mil, Tin 236x293x236mil
38	J13	1			Amphenol-Tuchel Electronics		30.0x17.3x2.5mm
39	J17	1		PPTC161LFBN-RC	Sullins Connector Solutions	Receptacle, 2.54mm, 16x1, Tin, TH	Receptacle, 2.54mm, 16x1, TH
	J19	1		PBC02DAAN	Sullins Connector Solutions	Header, 2.54mm, 2x2, Gold, TH	Header, 2.54mm, 2x2, TH
41 42 43	J20 J23, J32 J24	2		PECOSDAAN PECOSDAAN PECOSDAAN	Sullins Connector Solutions Sullins Connector Solutions Sullins Connector Solutions	Header, 100mil, 3x2, Tin, TH Header, 1x1, Tin, TH Header 2 Stemm 1x2 Tin Black TH	3x2 Header Header, 1x1
44	J25	1		B5B-XH-A(LF)(SN)	JST Manufacturing	Header(shrouded), 2.5mm, 5x1, Tin, TH	Header, 2.54mm, 2x1, TH Header(shrouded),
45	J26. J30	2		GBC03SAAN	Sulins Connector Solutions	Header, 2.54 mm, 3xf, Gold, TH	2.5mm, 5x1, TH Header, 2.54 mm,
46	J28	1		12401610E4#2A	Amphenol Canada	Receptacle, 0.5mm, USB TYPE C, R/A, SMT	3x1, TH Receptacle, 0.5mm,
						•	USB TYPE C, R/A, SMT
47	J31	- 1		PEC10DAAN	Sullins Connector Solutions	Header, 100mil, 10x2, TH	Header, 10x2, 2.54mm, TH
48	J33 J34	1		PEC05BAAN PEC05BAAN	Sullins Connector Solutions	Header, 100mil, 4x2, Tin, TH Header, 2.54mm, 5x1, Tin, TH	Header, 4x2, 100mil, Tin
	J35	1 1		PECUSSAAN PBC04SAAN	Sulins Connector Solutions	Header, 2.54mm, sxt, lin, lH Header, 2.54mm, 4xt, Gold, TH	Header, 2.54mm, 5x1, TH Header, 2.54 mm,
51	J36	1		87438-0343	Moley	Header (Shrouded), 1.5mm, 3x1, R/A, Tin, SMT	4x1, TH Header (Shrouded),
							1.5mm, 3x1, R/A, SMT
52 53	L1, L3 L2	2	1.5uH 10uH	XFL4020-152MEB 744053100	Colleraft Wurth Elektronik	Inductor, Shielded, Composite, 1.5 µH, 4.6 A, 0.01 ohm, SMD Inductor, Shielded Drum Core, Ferrite, 10 µH, 1.4 A, 0.05 ohm, SMD	4x2x4mm WE-TPC-LH
54 55	L4 L5	1	1uH 1uH	XFL4020-102MEB IHLP2020BZER1R0M11	Colleraft Vishay-Dale	Inductor, Shielded, Composite, 1 µH, 5.4 A, 0.01 chm, SMD Inductor, Shielded Drum Core, Powdered Iron, 1 µH, 7 A, 0.0181 chm,	4x2x4mm 5.49x2x5.18mm
	R1, R2, R21, R22,	5	1.00Meg	CRCW04021M00FKED	Vishay-Dale	SMD RES, 1.00 M, 1%, 0.063 W, 0402	0402
57 58	R3, R23 R4, R5, R6, R7, R8	2 5	180k 10.0k	CRCW0402180KJNED PCF0402-12-10KBT1	Vishay-Dale TT Electronics/IRC	RES, 180 k, 5%, 0.063 W, 0402 RES, 10.0 k, 0.1%, 0.063 W, 0402	0402 0402
59 60	R9, R10 R11, R12	2	0 49.9	ERJ-2GE0R00X RC0402FR-0749R9L	Panasonic Yageo America	RES, 0, 5%, 0.063 W, 0402 RES, 49.9, 1%, 0.063 W, 0402	0402 0402
61	R13, R14, R15, R17, R18, R61	6	10.0k	CRCW040210K0FKED	Vishay-Dale	RES, 10.0 k, 1%, 0.063 W, 0402	0402
62 63	R16 R19, R50, R51, R52, R53, R54, R55, R56, R57	9	10k ohm 47k	3266W-1-103LF CRCW040247K0JNED	Bourns Vishay-Dale	Trimmer, 10k ohm, 0.25W, TH RES, 47 k, 5%, 0.063 W, 0402	4.5x8x6.7mm 0402
64 65 66	R20 R24	1 1	118 549 64.9	RC0603FR-07118RL CRCW0402549RFKED CRCW040254R9FKED	Yageo America Vishay-Dale	RES, 118, 1%, 0.1 W, 0603 RES, 549, 1%, 0.063 W, 0402 RES, 64.9, 1%, 0.063 W, 0402	0603 0402 0402
66	R24 R25, R27, R29, R34	4	64.9	CHLW040264R9FKED	Vishay-Dale	NES, 64.9, 1%, 0.063 W, 0402	0402
	R28 R30. R31. R32.	1	665 40.2	CRCW0402665RFKED ERJ-8ENF40R2V	Yageo America Vishay-Dale	RES, 86.6, U.1%, U.125 W, U8US RES, 665, 1%, 0.063 W, 0402 RES, 40.2, 1%, 0.25 W, 1206	0402 1206
70	R33	2	0.24	ERJ-2BQFR24X	Panasonic Panasonic	RES, 0.24, 1%, 0.125 W, 1200	0402
71 72	R41, R42 R44 R45	1	200k 909k	CRCW0402200KJNED CRCW0402909KFKED	Vishay-Dale Vishay-Dale	RES, 200 k, 5%, 0.063 W, 0402 RES, 909 k, 1%, 0.063 W, 0402	0402 0402
73 74	R46 R47	1	261 150	CRCW0402261RFKED CRCW0402150RJNED	Vishay-Dale Vishay-Dale	RES, 261, 1%, 0.063 W, 0402 RES, 150, 5%, 0.063 W, 0402	0402 0402
75 76 77	R48 R49 R58, R59	1	5.23k 31.2k	RC0603FR-075K23L RT0603DRE0731K2L CRCW0402499KFKED	Yageo America Yageo America Vishay-Dale	RES, 5.23 k, 1%, 0.1 W, 0603 RES, 31.2 k, 0.5%, 0.1 W, 0603 RES, 499 k, 1%, 0.063 W, 0402	0603 0603
78	R60	2	499k 0.002	PMR25HZPFV2L00	Rohm	RES. 0.002, 1%, 1 W, 1210	0402 1210
79	RST, TEST, VCC	3		5007	Keystone	Test Point, Compact, White, TH	White Compact Testpoint
81	RT1 SHJ1, SHJ2, SH J3, SHJ4, SH J5, SHJ6, SH J7, SHJ8, SH J9, SHJ10, SH J11, SHJ12, SH J13, SHJ14, SH J15 TCA PRES	1 15	10.0k ohm 1x2	103AT-2 989102-0000-DA	SEMITEC Corporation  3M  Keystone	Thermeter NTC, 10 Dx chrs. 1%, Dasc 564 4 mm Shure, 100mil, Gold plated, Black.	Disc, 5x8.4 mm Shunt Green Multipurpose
83	U1, U6	2		TPS63020QDSJRQ1	Texas Instruments	HIGH EFFICIENCY SINGLE INDUCTOR BUCK-BOOST CONVERTER	Testpoint DSJ0014A
84	U2	-1		TCA5013ZAHR	Texas Instruments	WITH 4-A SWITCHES, DSJ0014A Smart Card Interface IC for 1 User Card + 3 SAMs, ZAH0048A IZC CONTROLLED KEYPAD SCAN IC WITH INTEGRATED ESD	ZAH0048A
85	U3	1		TCA8418EYFPR	Texas Instruments	PROTECTION, YFP0025ABAB	YFP0025ABAB
86 87	U4, U7, U8, U9, U10	5		TPS22918QDBVRQ1 MSP430G2553IRHB32R	Texas Instruments Texas Instruments	5.5-V, 2-A, 54mphm On-Resistance Load Switch, DBV0006A	DBV0006A RHR0032F
8/	uo	1				16 MHz Mixed Signal Microcontroller with 16 KB Flash, 512 B SRAM and 24 GPIOs, -40 to 85 degC, 32-pin QFN (RHB), Green (RoHS & no Sb/Br)	nnBUU32E
89	U11 U12	1		TPS22965TDSGRQ1 TPS61232DRCR	Texas Instruments Texas Instruments	5.5-V, 4-A, 16-m0hm On-Resistance Load Switch, DSG0008A HIGH EFFICIENCY SYNCHRONOUS STEP UP CONVERTER WITH 5A SWITCHES, DRC0010G	DSG0008A DRC0010G
91	U13 U14	1		DRV8833RTYR 918	Texas Instruments Adafruit	Dual H-Bridge Motor Driver, RTY0016A Small Reduction Stepper Motor - 12VDC 32-Step 1/16 Gearing	RTY0016A D28xH20mm
92	U15	1		BQ25890RTWR	Texas Instruments	Management and MaxChargeTM High Voltage Adapter Support,	RTW0024H
93 94	U16 U17	1		TUSB320LIRWBR TPD1E10809DPYR	Texas Instruments Texas Instruments	USB Type-C Configuration Channel Logic and Port Control, RWB0012A ESD Protection in 0402 Package with 10 pF Capacitance and 9 V Breakdown, 1 Channel, 40 to +125 degC, 2-pin X2SCN (DPY), Green (Rolfs & no St/Br)	RWB0012A DPY0002A
95	U18	-1		TPD4E02B04DQAR	Texas Instruments	(RoHS & no Sb/Br)  1, 4, 6 CHANNEL PROTECTION SOLUTION FOR SUPER-SPEED (UP TO 6 GBPS) INTERFACE, DQA0010A	DQA0010A
96 97	U19 U20	1 1		TPD2E2U06QDBZRQ1 INA219BIDR	Texas Instruments Texas Instruments	Dual-Channel High-Speed ESD Protectiong Device, DBZ0003A Zero-Drift, Bi-Directional CURRENT/POWER MONITOR with I2C™	DB20003A D0008A
98	FID1, FID2, FID3	0		N/A	N/A	Interface, D0008A  Elducial mark. There is nothing to huy or mount.	Fiducial
99	J27	0		65100516121	Wurth Elektronik	Connector, Receptacle, USB Mini B 2.0, SMT	Connector, Receptacle, USB Mini B 2.0, 5 Position, SMT
100 101	R36, R38 R63	0	1.00Meg 10.0k	CRCW04021M00FKED CRCW040210K0FKED	Vishay-Dale Vishay-Dale	RES, 1.00 M, 1%, 0.063 W, 0402 RES, 10.0 k, 1%, 0.063 W, 0402	0402 0402

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