

Multilevel Bill of Materials								
EXI #:	600-000101-000 Rev: R1.00							
	PTAG2 Top Level Assembly							
Lvl	Item	EXI Part #	Description	Rev	Qty	Reference Designators/Notes	Vendor Name	Vendor Part Number
1	1	400-000030-001	Top Case, PTAG2, EXI, Blue	R1.00	1	TOP CASE	Hong Kong Mould Manufacturing	400-000030-001
1	2	500-000001-000	Foil Bag for Storage of Tags	R1.00	1	FOIL BAG	Induspac	MIL-B-131H Class I
1	3	510-000001-000	Bar Code Label for Tags	R1.00	1	BAR CODE		
1	4	510-000002-000	Information Label for Tags	R1.00	1	INFO LABEL		
1	5	530-000002-000	Methyl Ethyl Ketone (MEK) Bonding Agent	R1.00	1	MEK		
1	6	600-000090-000	PTAG2 PCA with Battery, Antenna, Bottom Case	R1.00	1	PCA1		
2	1	303-000000-000	Battery, Li-Mn, 1632, 125mA, 3V, 2-pin Horiz. Mnt.	R1.00	1	BT1	Renata	CR1632FH
2	2	400-000025-000	PTAG2 Wire Antenna	R0.10	1	L2	Hong Kong Mould Manufacturing	400-000031-001
2	3	400-000031-001	Bottom Case, PTAG2, Clear	R1.00	1	BOTTOM CASE		
2	4	510-000018-000	Label, PTAG2, Serial Number and Expiry Date	R1.00	1	LBL1	FASTSIGNS	510-000018-000
2	5	530-000005-000	Double-sided Adhesive, Die Cut, PTAG2	R0.10	1	ADHESIVE	Sytek	530-000005-000
2	6	530-000006-000	Adhesive Foam Separator, PTAG2	R0.10	1	FOAM		
2	7	600-000091-000	PTAG2 PCA without Battery	R1.00	1	PCA1		
3	1	100-000002-2004	RES, 2.00M, SMD, 1%, 1/16W, 0402, -55 to +125C	R1.00	1	R13	Rohm Venkel	MCR01F2004MZS CR0402-16W-2004FT
3	2	100-000002-3573	RES, 357K, SMD, 1%, 1/16W, 0402, -55 to +125C	R1.00	1	R50	Cal-Chip KOA Panasonic Rohm Samsung Venkel Vishay	RM04F3573CT RK73H1ETP3573F ERJ2RKF3573X MCR01F3573MZS RC1005F3573CS CR0402-16W-3573FT CRCW04023573FRT5
3	3	100-000002-4753	RES, 475K, SMD, 1%, 1/16W, 0402, -55 to +125C	R1.00	1	R49	Cal-Chip KOA Panasonic Rohm Samsung Venkel Vishay	RM04F4753CT RK73H1ETP4753F ERJ2RKF4753X MCR01F4753MZS RC1005F4753CS CR0402-16W-4753FT CRCW04024753FRT5
3	4	100-000003-000	RES, 0, SMD, 5%, 1/16W, 0402, -55 to +125C	R1.00	2	R15, R54	AVX Cal-Chip KOA Panasonic Rohm Samsung Venkel Vishay	CR05-000-H RM04J0000CT RM73Z1ET000 ERJ2GEOR00X MCR01J000MZS RC1005J000CS CR0402-16W-000JT CRCW0402000RT5
3	5	100-000003-103	RES, 10K, SMD, 5%, 1/16W, 0402, -55 to +125C	R1.00	2	R1, R2	AVX Cal-Chip	CR05-103J-H RM04J103CT

							KOA	RM73B1ET103J
							Panasonic	ERJ2GEJ103X
							Rohm	MCR01J103MZS
							Samsung	RC1005J103CS
							Venkel	CR0402-16W-103JT
							Vishay	CRCW0402103JRT5
3	6	100-000003-104	RES, 100K, SMD, 5%, 1/16W, 0402, -55 to +125C	R1.00	2	R21, R38		
							AVX	CR05-104J-H
							Cal-Chip	RM04J104CT
							KOA	RM73B1ET104J
							Panasonic	ERJ2GEJ104X
							Rohm	MCR01J104MZS
							Samsung	RC1005J104CS
							Venkel	CR0402-16W-104JT
							Vishay	CRCW0402104JRT5
3	7	100-000003-105	RES, 1M, SMD, 5%, 1/16W, 0402, -55 to +125C	R1.00	3	R39, R41, R48		
							AVX	CR05-105J-H
							Cal-Chip	RM04J105CT
							KOA	RM73B1ET105J
							Panasonic	ERJ2GEJ105X
							Rohm	MCR01J105MZS
							Samsung	RC1005J105CS
							Venkel	CR0402-16W-105JT
							Vishay	CRCW0402105JRT5
3	8	100-000003-134	RES, 130K, SMD, 5%, 1/16W, 0402, -55 to +125C	R1.00	1	R33		
							AVX	CR05-134J-H
							Cal-Chip	RM04J134CT
							KOA	RM73B1ET134J
							Panasonic	ERJ2GEJ134X
							Rohm	MCR01J134MZS
							Samsung	RC1005J134CS
							Venkel	CR0402-16W-134JT
							Vishay	CRCW0402134JRT5
3	9	100-000003-155	RES, 1.5M, SMD, 5%, 1/16W, 0402, -55 to +125C	R1.00	1	R37		
							AVX	CR05-155J-H
							Cal-Chip	RM04J155CT
							KOA	RM73B1ET155J
							Panasonic	ERJ2GEJ155X
							Rohm	MCR01J155MZS
							Samsung	RC1005J155CS
							Venkel	CR0402-16W-155JT
3	10	100-000003-183	RES, 18K, SMD, 5%, 1/16W, 0402, -55 to +125C	R1.00	1	R52		
							AVX	CR05-183J-H
							Cal-Chip	RM04J183CT
							KOA	RM73B1ET183J
							Panasonic	ERJ2GEJ183X
							Rohm	MCR01J183MZS
							Samsung	RC1005J183CS
							Venkel	CR0402-16W-183JT
							Vishay	CRCW0402183JRT5
3	11	100-000003-225	RES, 2.2M, SMD, 5%, 1/16W, 0402, -55 to +125C	R1.00	6	R7, R16, R17, R20, R27, R44		
							AVX	CR05-225J-H
							Cal-Chip	RM04J225CT
							KOA	RM73B1ET225J
							Panasonic	ERJ2GEJ225X
							Rohm	MCR01J225MZS
							Samsung	RC1005J225CS
							Venkel	CR0402-16W-225JT

3	12	100-000003-274	RES, 270K, SMD, 5%, 1/16W, 0402, -55 to +125C	R1.00	1	R36		
							AVX	CR05-274J-H
							Cal-Chip	RM04J274CT
							KOA	RM73B1ET274J
							Panasonic	ERJ2GEJ274X
							Rohm	MCR01J274MZS
							Samsung	RC1005J274CS
							Venkel	CR0402-16W-274JT
							Vishay	CRCW0402274JRT5
3	13	100-000003-275	RES, 2.7M, SMD, 5%, 1/16W, 0402, -55 to +125C	R1.00	1	R51		
							Cal-Chip	RM04J275CT
							KOA	RM73B1ET275J
							Rohm	MCR01J275MZS
							Venkel	CR0402-16W-275JT
3	14	100-000003-333	RES, 33K, SMD, 5%, 1/16W, 0402, -55 to +125C	R1.00	1	R53		
							AVX	CR05-333J-H
							Cal-Chip	RM04J333CT
							KOA	RM73B1ET333J
							Panasonic	ERJ2GEJ333X
							Rohm	MCR01J333MZS
							Samsung	RC1005J333CS
							Venkel	CR0402-16W-333JT
							Vishay	CRCW0402333JRT5
3	15	100-000003-474	RES, 470K, SMD, 5%, 1/16W, 0402, -55 to +125C	R1.00	1	R24		
							AVX	CR05-474J-H
							Cal-Chip	RM04J474CT
							KOA	RM73B1ET474J
							Panasonic	ERJ2GEJ474X
							Rohm	MCR01J474MZS
							Samsung	RC1005J474CS
							Venkel	CR0402-16W-474JT
							Vishay	CRCW0402474JRT5
3	16	100-000003-821	RES, 820, SMD, 5%, 1/16W, 0402, -55 to +125C	R1.00	1	R22		
							AVX	CR05-821J-H
							Cal-Chip	RM04J821CT
							KOA	RM73B1ET821J
							Panasonic	ERJ2GEJ821X
							Rohm	MCR01J821MZS
							Samsung	RC1005J821CS
							Venkel	CR0402-16W-821JT
							Vishay	CRCW0402821JRT5
3	17	100-000006-4754	RES, 4.75M, SMD, 1%, 1/16W, 0603, -55 to +125C	R1.00	2	R18, R26		
							KOA	RK73H1J4754F
							Philips	9C06031A4754FKRFT
3	18	100-000008-106	RES, 10M, SMD, 5%, 1/16W, 0603, -55 to +125C	R1.00	15	R3, R4, R5, R6, R8, R9, R10, R11, R12, R19, R23, R25, R29, R31, R32		
							AVX	CR10-106J-T
							Bourns	CR0603-JW-106E
							Chip Technologies Inc.	CR0603J106T1
							KOA	RM73B1JT106J
							Panasonic	ERJ3GSYJ106V
							Rohm	MCR03J106EZH
							Venkel	CR0603-16W-106JT
3	19	100-000008-475	RES, 4.7M, SMD, 5%, 1/16W, 0603, -55 to +125C	R1.00	1	R35		
							AVX	CR10-475J-T
							Bourns	CR0603-JW-475E
							Cal-Chip	RM06J475CT
							Chip Technologies Inc.	CR0603J475T1

							KOA	RM73B1JT475J
							Panasonic	ERJ3GSYJ475V
							Rohm	MCR03J475EZH
							Venkel	CR0603-16W-475JT
3	20	100-000008-685	RES, 6.8M, SMD, 5%, 1/16W, 0603, -55 to +125C	R1.00	2	R30, R40		
							AVX	CR10-685J-T
							Bourns	CR0603-JW-685E
							Chip Technologies Inc.	CR0603J685T1
							KOA	RM73B1JT685J
							Panasonic	ERJ3GSYJ685V
							Rohm	MCR03J685EZH
							Venkel	CR0603-16W-685JT
3	21	100-000008-825	RES, 8.2M, SMD, 5%, 1/16W, 0603, -55 to +125C	R1.00	2	R46, R47		
							AVX	CR10-825J-T
							Bourns	CR0603-JW-825E
							Chip Technologies Inc.	CR0603J825T1
							KOA	RM73B1JT825J
							Panasonic	ERJ3GSYJ825V
							Rohm	MCR03J825EZH
							Venkel	CR0603-16W-825JT
3	22	110-000001-100	CAP, 10pF, SMD, 0402, NPO, 50V, 0.5pF, -55/+125C	R1.00	3	C16, C21, C23		
							AVX	04025A100DAT2A
							Cal-Chip	GMC04CG100D50NT
							Kemet	C0402C100D5GAC
							KOA	0402NPOHT100D
							Murata	GRM36COG100D50PT
							Panasonic	ECUE1H100DCQ
							Rohm	MCH155A100DK
							Vishay	VJ0402A100DXAAC
3	23	110-000001-8P2	CAP, 8.2pF, SMD, 0402,NPO, 50V, 0.5pF, -55/+125C	R1.00	1	C13		
							AVX	04025A8R2DAT2A
							Cal-Chip	GMC04CG8R2D50NT
							Kemet	C0402C829D5GAC
							KOA	0402NPOHT8R2D
							Rohm	MCH155A8R2DK
							Vishay	VJ0402A8R2DXAAC
3	24	110-000002-2P7	CAP, 2.7pF, SMD, 0402, NPO, 50V, 0.25pF, -55/+125C	R1.00	1	C15		
							AVX	04025A2R7CAT2A
							Cal-Chip	GMC04CG2R7D50NT
							Kemet	C0402C279C5GAC
							KOA	0402NPOHT2R7C
							Rohm	MCH155A2R7CK
							Siemens	B37920-K5030-C60
3	25	110-000003-101	CAP, 100pF, SMD, 0402, NPO, 50V, 5%, -55 to +125C	R1.00	1	C7		
							AVX	04025A101JAT2A
							Cal-Chip	GMC04CG101J50NT
							KOA	0402NPOHT101J
							Murata	GRM36COG101J50PT
							Panasonic	ECUE1H101JCQ
							Rohm	MCH155A101JK
							Siemens	B37920-K5101-J60
							Vishay	VJ0402A101JXAAC
3	26	110-000003-221	CAP, 220pF, SMD, 0402, NPO, 50V, 5%, -55 to +125C	R1.00	1	C12		
							Panasonic	ECUE1H221JCQ
							Rohm	MCH155A221JK
							Siemens	B37920-K5221-J60
3	27	110-000003-270	CAP, 27pF, SMD, 0402, NPO, 50V, 5%, -55 to +125C	R1.00	1	C8		
							Cal-Chip	GMC04CG270J50NT

							Kemet	C0402C270J5GAC
							KOA	0402NPOHT270J
							Murata	GRM36COG270J50PT
							Panasonic	ECUE1H270JCQ
							Rohm	MCH155A270JK
							Siemens	B37920-K5270-J60
							Vishay	VJ0402A270JXAAC
3	28	110-000003-330	CAP, 33pF, SMD, 0402, NPO, 50V, 5%, -55 to +125C	R1.00	2	C22, C26		
							AVX	04025A330JAT2A
							Cal-Chip	GMC04CG330J50NT
							Kemet	C0402C330J5GAC
							KOA	0402NPOHT330J
							Murata	GRM36COG330J50PT
							Panasonic	ECUE1H330JCQ
							Rohm	MCH155A330JK
							Siemens	B37920-K5330-J60
							Vishay	VJ0402A330JXAAC
3	29	110-000003-470	CAP, 47pF, SMD, 0402, NPO, 50V, 5%, -55 to +125C	R1.00	3	C4, C5, C24		
							AVX	04025A470JAT2A
							Cal-Chip	GMC04CG470J50NT
							Kemet	C0402C470J5GAC
							KOA	0402NPOHT470J
							Murata	GRM36COG470J50PT
							Panasonic	ECUE1H470JCQ
							Rohm	MCH155A470JK
							Siemens	B37920-K5470-J60
							Vishay	VJ0402A470JXAAC
3	30	110-000003-560	CAP, 56pF, SMD, 0402, NPO, 50V, 5%, -55 to +125C	R1.00	1	C14		
							AVX	04025A560JAT2A
							Cal-Chip	GMC04CG560J50NT
							Kemet	C0402C560J5GAC
							KOA	0402NPOHT560J
							Murata	GRM36COG560J50PT
							Panasonic	ECUE1H560JCQ
							Rohm	MCH155A560JK
							Siemens	B37920-K5560-J60
							Vishay	VJ0402A560JXAAC
3	31	110-000005-102	CAP, 1000pF,SMD, 0402, X7R, 50V, 10%, -55 to +125C	R1.00	1	C28		
							AVX	04025C102KAT2A
							Cal-Chip	GMC04X7R102K50NT
							Kemet	C0402C102K5RAC
							KOA	0402X7RHT102K
							Murata	GRM36X7R102K50PT
							Panasonic	ECUE1H102KBQ
							Rohm	MCH155C102KK
							Vishay	VJ0402Y102KXAAC
3	32	110-000007-103	CAP, 10nF,SMD, 0402, X7R, 16V, 10%, -55 to +125C	R1.00	1	C25		
							AVX	0402YC103KAT2A
							Cal-Chip	GMC04X7R103K16NT
							Kemet	C0402C103K4RAC
							KOA	0402X7RCT103K
							Murata	GRM36X7R103K16PT
							Panasonic	ECUE1C103KBQ
							Rohm	MCH153C103KK
							Siemens	B37921-K9103-K60
							Vishay	VJ0402Y103KXJAC
3	33	110-000021-331	CAP, 330pF, SMD, 0603, NPO, 50V, 5%, -55 to +125C	R1.00	2	C6, C10		
							AVX	06035A331JAT2A

							Kemet	C0603C331J5GAC
							KOA	0603NPOHT331J
							Panasonic	ECUV1H331JCV
							Rohm	MCH185A331JK
							Siemens	B37930-K5331-J60
							Vishay	VJ0603A331JXAAC
3	34	110-000021-821	CAP, 820pF, SMD, 0603, NPO, 50V, 5%, -55 to +125C	R1.00	1	C19		
							AVX	06035A821JAT2A
							Cal-Chip	GMC10CG821J50NT
							Panasonic	ECUV1H821JCV
							Rohm	MCH185A821JK
3	35	110-000025-104	CAP, 100nF, SMD, 0603, X7R, 16V, 10%, -55 to +125C	R1.00	5	C1, C2, C17, C29, C30		
							AVX	0603YC104KAT2A
							Cal-Chip	GMC10X7R104K16NT
							Kemet	C0603C104K4RAC
							KOA	0603X7RCT104K
							Murata	GRM39X7R104K16PT
							Panasonic	ECJ1VB1C104K
							Vishay	VJ0603Y104KXJAC
3	36	110-000025-273	CAP, 27nF, SMD, 0603, X7R, 16V, 10%, -55 to +125C	R1.00	1	C18		
							AVX	0603YC273KAT2A
							Cal-Chip	GMC10X7R273K16NT
							Kemet	C0603C273K4RAC
							KOA	0603X7RCT273K
							Panasonic	ECJ1VB1C273K
							Siemens	B37931-K9273-K60
							Vishay	VJ0603Y273KXJAC
3	37	110-000039-222	CAP, 2200pF, SMD, 0805, NPO, 50V, 5%, -55 to +125C	R1.00	2	C3, C11		
							Cal-Chip	GMC21CG222J50NTM
							Murata	GRM40C0G222J50PT
							Panasonic	ECUV1H222JCX
3	38	110-002004-105	CAP, 1uF, SMD, Tant, 16V, 10%, -55/+125C, A size	R1.00	1	C20		
							AVX	TAJA105K016R
							Cal-Chip	TCKIC105AT
							Kemet	T491A105K016AS
							KOA	TMC1CA105KLRH
							Matsuo	267M1602105KR
							Nemco	PCT1/16AK
							Venkel	TA016TCM105KAR
							Vishay	293D105X9016A2T
3	39	112-000002-000	CAP, Variable, SMD, 7-50pF, N750, -25/+85C, A-type	R1.01	1	C9		
							Murata	TZBX4R500BA110T00
3	40	120-000005-000	IND, Leaded, 1000uH, 5%, 10mA, 24AWG, Q=60, 0-70C	R1.00	1	L1		
							Coiltech	CTC-0118-102
3	41	122-000004-001	XTAL, Leaded, Cylindrical, 83kHz, 11pF, +/-100ppm	R1.00	1	Y2		
							Epson	C-2 83.0000K-P
3	42	124-000001-000	Resonator, SAW, 433.92MHz, 75kHz, SMD, -40/+85C	R1.00	1	Y1		
							RF Monolithics	RO2101A
3	43	204-000008-000	Transistor, NPN, VHF/UHF, SOT-23, Vceo=25V, 225mW	R1.00	1	Q4		
							ON Semiconductor	MMBTH10LT1
3	44	204-000010-000	Transistor, NPN, Low Noise, SOT-23, Vceo=60V, 50mA	R1.00	3	Q1, Q3, Q5		
							Central Semiconductor	CMPT2484
							Fairchild Semiconductor	MMBT2484
							ON Semiconductor	MMBT2484LT1
3	45	204-000011-000	Transistor, PNP, Low Noise, SOT-23, Vceo=-50V, -50mA	R1.00	1	Q2		
							Central Semiconductor	CMPT5087
							Fairchild Semiconductor	MMBT5087
							ON Semiconductor	MMBT5087LT1

3	46	205-000001-000	Transistor, Dual PNP,SOT-363/SC-88,Vceo=-40V,200mA	R1.00	1	U5		
							Infineon	SMBT3906S
							ON Semiconductor	MBT3906DW1T1
3	47	205-000002-000	Transistor, PNP/NPN, SOT-363/SC-88,Vceo=50V,200mA	R1.00	4	U2, U4, U7, U14		
							Infineon	SMBT3904PN
							ON Semiconductor	MBT3946DW1T1
3	48	205-000003-000	Transistor, Dual NPN, SOT-363/SC-88,Vceo=40V,200mA	R1.00	2	U1, U3		
							Infineon	SMBT3904S
							ON Semiconductor	MBT3904DW1T1
3	49	210-000005-000	IC, Decade Cntr, CMOS, 4017, SO-16, -40 to +85C	R1.00	1	U8		
							Fairchild Semiconductor	CD4017BCM
							Hitachi	HD14017BFP-16DN
							ON Semiconductor	MC14017BD
3	50	210-000006-000	IC, Quad 2-inp NAND Schmitt, CMOS, 4093, TSSOP-14	R1.00	1	U6		
							Rohm	BU4093BFV
3	51	210-000007-001	IC, Quad 2-inp NOR, CMOS, 4001, SOIC-14, -40-+85C	R1.00	1	U13		
							Fairchild Semiconductor	CD4001BCM
							Hitachi	HD14001BFP-14DN
							ON Semiconductor	MC14001BD
							Philips	HEF4001BTD
							Rohm	BU4001BF
							Toshiba	TC4001BFN
3	52	230-000006-000	IC, Compar., Nanopower with Ref., MSOP8, 0-70C	R1.00	2	U12, U15		
							Linear Technology	LTC1540CMS8
3	53	300-000029-004	Flx Jmp,4,Rnd 32AWG,0.1 ins. 0.05 ptch,0.095 lead	R1.00	1	J3		
							Elmec	R32-.100-.050-4-.095-T
3	54	380-000018-000	PCB, PTAG2, Half-Size PTAG	R0.20	1	PCB		
3	55	601-000006-000	Programmed PIC, Tags w/ TLM + Low Battery Support	R7.1	1	U9		
4	1	211-000006-000	IC, PIC12C509,1024x12, 4MHz, SO-8, 2.5-5.5V, 0-70C	R1.00	1	U1		
							Microchip	PIC12C509-04/SM
4	2	720-000009-000	Tags with TLM and Low Battery Firmware	R7.1	1	FW1		
3	56	911-000021-000	Schematic, PTAG2	R1.00	1	For reference only.		
1	7	931-000029-000	Manufacturing Test Procedure, PTAG2	R0.10	1	For reference only.		
1	8	932-000088-000	Assembly Instructions, PTAG2	R0.10	1	For reference only.		