Bill of Materials　　　LIGO Project　　　D070011　　　Revision   A

Project: MasterFanOut.PrjPCB

Author: Daniel Sigg

	Number of boards		4

Report Date:	3/9/2007	3:07:44 PM	
Print Date:	09-Mar-07	4:08:22 PM	

Quantity	Distributor	Part Number	Comment	Description	Designator	Footprint	Assembly Type	Quantity to Order
144	Digi-Key	478-1395-1-ND	100n	Capacitor, surface mount	C1, C2, C5, C6, C8, C9, C10, C11, C12, C13, C14, C15, C16, C17, C21, C22, C23, C26, C28, C30, C36, C37, C40, C43, C44, C45, C46, C47, C48, C49A, C49B, C49C, C49D, C50A, C50B, C50C, C50D, C51A, C51B, C51C, C51D, C53A, C53B, C53C, C53D, C57A, C57B, C57C, C57D, C58A, C58B, C58C, C58D, C61A, C61B, C61C, C61D, C62A, C62B, C62C, C62D, C63A, C63B, C63C, C63D, C65A, C65B, C65C, C65D, C69A, C69B, C69C, C69D, C70A, C70B, C70C, C70D, C73A, C73B, C73C, C73D, C74A, C74B, C74C, C74D, C75A, C75B, C75C, C75D, C76A, C76B, C76C, C76D, C77A, C77B, C77C, C77D, C78A, C78B, C78C, C78D, C79A, C79B, C79C, C79D, C80A, C80B, C80C, C80D, C81A, C81B, C81C, C81D, C82, C83, C84, C85, C86, C87, C88, C89, C90, C91, C92, C95, C99, C100, C101, C102, C103, C106, C108, C109, C110, C111, C112, C113, C115, C117, C118, C119, C129, C222, C223	CC2013-0805		610
41	Digi-Key	490-1709-1-ND	10u	Capacitor, surface mount	C3, C4, C52A, C52B, C52C, C52D, C54A, C54B, C54C, C54D, C55A, C55B, C55C, C55D, C56A, C56B, C56C, C56D, C64A, C64B, C64C, C64D, C66A, C66B, C66C, C66D, C67A, C67B, C67C, C67D, C68A, C68B, C68C, C68D, C93, C159, C176, C185, C203, C212, C221	CC2013-0805		180
24	Digi-Key	490-1642-1-ND	10n	Capacitor, surface mount	C7, C27, C35, C59A, C59B, C59C, C59D, C60A, C60B, C60C, C60D, C71A, C71B, C71C, C71D, C72A, C72B, C72C, C72D, C96, C122, C123, C134, C137	CC2013-0805		110
1	Digi-Key	311-1111-1-ND	100p	Capacitor, surface mount	C18	CC2013-0805		10
1	Digi-Key	490-3328-1-ND	470n	Capacitor, surface mount	C19	CC2013-0805		10
5	None		NL	Capacitor, surface mount, Resistor, surface mount	C20, C29, R20, R29, R118	CC2013-0805, CR201		30
2	Digi-Key	311-1122-1-ND	1n	Capacitor, surface mount	C24, C25	CC2013-0805		20
8	Digi-Key	PCC2319CT-ND	1u	Capacitor, surface mount	C31, C33, C41, C116, C128, C133, C138, C139	CC2013-0805		40
7	Digi-Key	PCC2414CT-ND	10u	Capacitor, surface mount	C32, C34, C38, C39, C98, C140, C150	CC3216-1206		40
1	Digi-Key	490-1763-1-ND	33n	Capacitor, surface mount	C42	CC3216-1206		10
1	Digi-Key	P12913-ND	1F	Electrolyte capacitor, leaded, radial	C94	RB12.5/5.0	TH	5
4	Digi-Key	399-3827-1-ND	22u	Tantalum capacitor, surface mount	C97, C124, C125, C135	TC3216-1206		30
5	Digi-Key	PCC2332CT-ND	22u	Capacitor, surface mount	C104, C107, C120, C127, C132	CC3216-1206		30
1	Digi-Key	PCC1784CT-ND	10n	Capacitor, surface mount	C105	CC1608-0603		10
2	Digi-Key	399-4008-1-ND	100u	Tantalum capacitor, surface mount	C114, C121	TC3528-1411		20
3	Digi-Key	399-4131-1-ND	1m	Tantalum capacitor, surface mount	C126, C131, C136	TC7343-2917		20
1	Digi-Key	399-3908-1-ND	68u	Tantalum capacitor, surface mount	C130	TC7343-2917		10

Qty	Vendor	Part Number	Value	Description	Reference	Footprint		Count
32	Digi-Key	PCC1721CT-ND	1n	Capacitor, surface mount	C141, C142, C143, C144, C151, C152, C153, C154, C160, C161, C162, C163, C164, C165, C166, C167, C177, C178, C179, C180, C195, C196, C197, C198, C204, C205, C206, C207, C213, C214, C215, C216	CC1005-0402		140
16	Digi-Key	399-3066-1-ND	10n	Capacitor, surface mount	C145, C146, C155, C156, C168, C169, C170, C171, C181, C182, C199, C200, C208, C209, C217, C218	CC1005-0402		70
11	Digi-Key	587-1456-1-ND	100n	Capacitor, surface mount	C147, C148, C157, C158, C172, C173, C174, C183, C201, C210, C219	CC1005-0402		50
6	Digi-Key	PCC2354CT-ND	1u	Capacitor, surface mount	C149, C175, C184, C202, C211, C220	CC1608-0603		30
4	Digi-Key	399-4138-1-ND	680u	Tantalum capacitor, surface mount	C186, C187, C188, C189	TC7343-2917		30
1	Digi-Key	311-1179-1-ND	100n	Capacitor, surface mount	C190	CC3216-1206		10
1	Digi-Key	PCC2333CT-ND	22u	Capacitor, surface mount	C191	CC3225-1210		10
1	Digi-Key	490-4539-1-ND	100u	Capacitor, surface mount	C192	CC3216-1206		10
2	Digi-Key	PCE3506CT-ND	3.3m	Electrolyte capacitor, surface mount	C193, C194	AC190-075/K		20
4	Digi-Key	399-4138-1-ND	680u	Tantalum capacitor, surface mount	C186, C187, C188, C189	TC7343-2917		30
1	Digi-Key	PCC2333CT-ND	22u	Capacitor, surface mount	C191	CC3225-1210		10
1	Digi-Key	490-4539-1-ND	100u	Capacitor, surface mount	C192	CC3216-1206		10
2	Digi-Key	PCE3506CT-ND	3.3m	Electrolyte capacitor, surface mount	C193, C194	AC190-075/K		20
3	Digi-Key	SD103AW-FDICT-ND	shottky diode	Single shottky diode	D1, D2, D3	DO-SOD123		17
21	Digi-Key	67-1270-ND	LED	Panel mount LED	DS1, DS2A, DS2B, DS2C, DS2D, DS3A, DS3B, DS3C, DS3D, DS4A, DS4B, DS4C, DS4D, DS5A, DS5B, DS5C, DS5D, DS7, DS8, DS9, DS10	LED-2	TH	85
1	Digi-Key	67-1553-1-ND	LED	SMD LED	DS6	LED-0805		9
2	Digi-Key	240-2408-1-ND	HI1206N101R	ferrite bead, 120Ohm at 100MHz, 1206	FR1, FR2	CC3216-1206		13
2	Digi-Key	A32255-ND	BNC	BNC, PCB Mount, Right Angle	J1, J2	BNC1	TH	9
17	Digi-Key	WM1633CT-ND	AFBR-5710	fiber optic transceiver, 1.25GB/s, MM, LC, SFP, fiber optic transceiver, 1.25GB/s, MM, LC, SFP, quad	J3, J6A, J6B, J6C, J6D	MSA/SFP2x10, MSA/S		73
1	Digi-Key	WM1634-ND	cage	SFP cage, 1x	J3	SFP	TH	5
4	Digi-Key	WM24031-ND	cage	SFP cage, 4x	J6A, J6B, J6C, J6D	SFP	TH	17
2	Digi-Key	ARF1205-ND	SMA	SMA, PCB Mount, Right Angle	J4, J5	SMA	TH	9
1	Digi-Key	553-1345-ND	J00-0065	Right Angle, Standard Profile, Flange Mount PCB Jack	J7	RJ45-LED	TH	5
34	Coilcraft	1008LS-102XJLB	1uH	Inductor	L1, L2, L3A, L3B, L3C, L3D, L4A, L4B, L4C, L4D, L5A, L5B, L5C, L5D, L6A, L6B, L6C, L6D, L7A, L7B, L7C, L7D, L8A, L8B, L8C, L8D, L9A, L9B, L9C, L9D, L10A, L10B, L10C, L10D	CL2520-1008		143
1	Coilcraft	MVR1251T-561MLB	560nH	Power inductor. MVR series	L11	MVR1251		9
2	Digi-Key	281-1279-ND, 281-1243-ND	TBlock_5.08_2	Terminal block, 5.08mm, 2-Pin	P1, P6	TBLOCK-5.08-2	TH	9
1	Digi-Key	A33162-ND	Header 7X2	Header, 7-Pin, Dual row	P2	HDR2X7		9
2	Digi-Key	A31134-ND	Header 5X2	Header, 5-Pin, Dual row	P3, P4	HDR2X5	TH	9
1	Digi-Key	SAM1154-05-ND	Oncore M12	Oncore M12 GPS receiver	P5	ONCORE_M12_SMD		9
23	Digi-Key	FDV301NCT-ND	FDV301N	FDV301N, Digital FET, N-channel, SOT23	Q1, Q2A, Q2B, Q2C, Q2D, Q3A, Q3B, Q3C, Q3D, Q4A, Q4B, Q4C, Q4D, Q5A, Q5B, Q5C, Q5D, Q6, Q7, Q8, Q9, Q10, Q11	SO-G3/C2.25		97
33	Digi-Key	RR12P100DCT-ND	100	Resistor, surface mount	R1, R4, R6, R10, R13, R14, R40, R43, R47, R48, R50, R66A, R66B, R66C, R66D, R67A, R67B, R67C, R67D, R82A, R82B, R82C, R82D, R83A, R83B, R83C, R83D, R86, R87, R93, R94, R95, R96	CR2012-0805		140
19	Digi-Key	742C083472JPTR	Resistor Array	Resistor Network, parallel, 4 resistors	R2, R52A, R52B, R52C, R52D, R53A, R53B, R53C, R53D, R68A, R68B, R68C, R68D, R69A, R69B, R69C, R69D, R89, R91	RES8-0.8		90

Qty	Supplier	Part Number	Value	Description	Reference Designators	Footprint		Price
17	Digi-Key	742C043472JCT-ND	Resistor Array	Resistor Network, parallel, 2 resistors	R3, R54A, R54B, R54C, R54D, R55A, R55B, R55C, R55D, R70A, R70B, R70C, R70D, R71A, R71B, R71C, R71D	RES4-0.8		80
6	Digi-Key	RR12Q10DCT-ND	10	Resistor, surface mount	R5, R42, R84A, R84B, R84C, R84D	CR2012-0805		30
40	Digi-Key	RR12Q49.9DCT-ND	49.9	Resistor, surface mount	R7, R9, R26, R27, R56A, R56B, R56C, R56D, R57A, R57B, R57C, R57D, R60A, R60B, R60C, R60D, R61A, R61B, R61C, R61D, R72A, R72B, R72C, R72D, R73A, R73B, R73C, R73D, R76A, R76B, R76C, R76D, R77A, R77B, R77C, R77D, R106, R107, R108, R109	CR2012-0805		170
17	Digi-Key	RR12P22.0KDCT-ND	22K	Resistor, surface mount	R8, R58A, R58B, R58C, R58D, R59A, R59B, R59C, R59D, R74A, R74B, R74C, R74D, R75A, R75B, R75C, R75D	CR2012-0805		80
34	Digi-Key	311-402CRCT-ND	402	Resistor, surface mount	R11, R12, R62A, R62B, R62C, R62D, R63A, R63B, R63C, R63D, R64A, R64B, R64C, R64D, R65A, R65B, R65C, R65D, R78A, R78B, R78C, R78D, R79A, R79B, R79C, R79D, R80A, R80B, R80C, R80D, R81A, R81B, R81C, R81D	CR2012-0805		150
2	Digi-Key	RR12P30.0KBCT-ND	30K	Resistor, surface mount	R15, R33	CR2012-0805		20
6	Digi-Key	RR12P10.0KBCT-ND	10K	Resistor, surface mount	R16, R17, R31, R32, R39, R41	CR2012-0805		30
1	Digi-Key	RR12P11.3KBCT-ND	11.3K	Resistor, surface mount	R18	CR2012-0805		10
1	Digi-Key	RR12P1.62KBCT-ND	1.62K	Resistor, surface mount	R19	CR2012-0805		10
2	Digi-Key	RR12P2.0KBCT-ND	2.00K, 2.0K	Resistor, surface mount	R21, R105	CR2012-0805		20
1	Digi-Key	RR12P8.06KDCT-ND	8.06K	Resistor, surface mount	R22	CR2012-0805		10
1	Digi-Key	RR12P8.2KBCT-ND	8.2K	Resistor, surface mount	R23	CR2012-0805		10
2	Digi-Key	RR12P470DCT-ND	470	Resistor, surface mount	R24, R25	CR2012-0805		20
1	Digi-Key	RR12P820DCT-ND	820	Resistor, surface mount	R28	CR2012-0805		10
1	Digi-Key	RR12P1.3KDCT-ND	1.3K	Resistor, surface mount	R30	CR2012-0805		10
1	Digi-Key	311-36.0FRCT-ND	36	Resistor, surface mount	R34	CR3216-1206		10
1	Digi-Key	311-100FRCT-ND	100	Resistor, surface mount	R35	CR3216-1206		10
2	Digi-Key	311-150FRCT-ND	150	Resistor, surface mount	R36, R37	CR3216-1206		20
1	Digi-Key	311-10.0FRCT-ND	10	Resistor, surface mount	R38	CR3216-1206		10
1	Digi-Key	311-20.0FRCT-ND	20	Resistor, surface mount	R44	CR3216-1206		10
3	Digi-Key	RR12P100KDCT-ND	100K	Resistor, surface mount	R45, R49, R51	CR2012-0805		20
1	Digi-Key	RR12P100KBCT-ND	100K	Resistor, surface mount	R46	CR2012-0805		10
3	Digi-Key	RR12P220DCT-ND	220	Resistor, surface mount	R85, R110, R112	CR2012-0805		20
1	Digi-Key	RR12P330DCT-ND	330	Resistor, surface mount	R88	CR2012-0805		10
1	Digi-Key	742C083103JCT-ND	Resistor Array	Resistor Network, parallel, 4 resistors	R90	RES8-0.8		10
4	Digi-Key	RR12P4.7KDCT-ND	4.7K	Resistor, surface mount	R92, R97, R103, R111	CR2012-0805		30
1	Digi-Key	RR12P1.0KDCT-ND	1K	Resistor, surface mount	R98	CR2012-0805		10
2	Digi-Key	311-49.9FRCT-ND	49.9	Resistor, surface mount	R99, R100	CR3216-1206		20
1	Digi-Key	RR12P2.94KBCT-ND	2.94K	Resistor, surface mount	R101	CR2012-0805		10
2	Digi-Key	RR12P10.0KDCT-ND	10K	Resistor, surface mount	R102, R119	CR2012-0805		20
2	Digi-Key	RR12P1.0KBCT-ND	1.00K, 1K	Resistor, surface mount	R104, R117	CR2012-0805		20
1	Digi-Key	RR12P6.49KBCT-ND	6.49K	Resistor, surface mount	R113	CR2012-0805		10
2	Digi-Key	RR12P7.15KBCT-ND	7.15K	Resistor, surface mount	R114, R116	CR2012-0805		20
1	Digi-Key	RR12P2.15KBCT-ND	2.15K	Resistor, surface mount	R115	CR2012-0805		10
1	Digi-Key	RR12P51.1KDCT-ND	51.1K	Resistor, surface mount	R120	CR2012-0805		10
1	Digi-Key	RR12P1.21KBCT-ND	1.21K	Resistor, surface mount	R121	CR2012-0805		10
2	Digi-Key	SW262CT-ND	B3SN-3112P	Switch, SMD, 6mm	S1, S2	SW_SMD_6MM		13
1	Digi-Key	450-1343-ND	SW DIP-8	DIP Switch, 8 Position, SPST	S3	DIP_SW_8WAY_SMD		9
1	Mini-Circuits	T2-613-1-KK81	T2-613-1	RF transformer, 1:1:2	T1	KK81		9
4	Digi-Key	5009K-ND	Testpoint	Testpoint, yellow	TP1, TP2, TP3, TP4	TP1	TH	17

9	Digi-Key	5005K-ND	Testpoint	Testpoint, red	TP5, TP6, TP7, TP8, TP9, TP10, TP11, TP12, TP19	TP1	TH	37
5	Digi-Key	5006K-ND	Testpoint	Testpoint, black	TP13, TP14, TP15, TP16, TP17	TP1	TH	21
1	Digi-Key	5007K-ND	Testpoint	Testpoint, white	TP18	TP1	TH	5
1	Digi-Key	122-1481-ND	XC3S1200E-4FG320C	Spartan-3E 1.2V FPGA, 250 User I/Os, 320-Ball FBGA, Standard Performance, Commercial Grade	U1	FG320	BGA	5
1	Digi-Key	296-1218-1-ND	74LVC04	Hex Inverter	U2	SO-G14		9
5	Digi-Key	296-6919-1-ND	SN65LVDS1	Single LVDS Driver	U3, U21, U36, U37, U38	SO-G5/E2.4		25
19	Digi-Key	296-13624-5-ND	SN65LVDS100D	DIFF TRANSLATOR	U4, U8, U14, U22A, U22B, U22C, U22D, U23A, U23B, U23C, U23D, U26A, U26B, U26C, U26D, U27A, U27B, U27C, U27D	SO-G8		81
7	Digi-Key	296-6896-1-ND	SN65LVDT2	Single LVDS Receiver with 100 Ohm termination	U5, U7, U13, U33, U35, U49, U51	SO-G5/E2.4		33
17	Digi-Key	296-15391-5-ND	SN65LVDT101D	DIFF TRANSLATOR	U6, U24A, U24B, U24C, U24D, U25A, U25B, U25C, U25D, U28A, U28B, U28C, U28D, U29A, U29B, U29C, U29D	SO-G8		73
1	Digi-Key	296-1240-5-ND	74LVC74D	Dual D-Type Positive Edge-Triggered Flip-Flop	U9	SO-G14		9
1	Vectron	VC-401-CRFC-205G	2^25Hz VCXO	Voltage controlled crystal oscillator	U10	VC-401-CFC-205G	TH	5
1	Digi-Key	OP284ESZ-ND	OP284ES	Precision Rail-to-Rail Input and Output Operational Amplifier	U11	SO-G8		9
1	Digi-Key	296-9845-1-ND	SN74LVC1G00	SN74LVC1G00	U12	SO-G5/E2.4		9
1	Digi-Key	ADR425BRZ-ND	ADR425BR	Low-Noise Micropower Precision Voltage Reference	U15	SO-G8		9
2	Digi-Key	OP184ESZ-ND	OP184, OP184ES	Precision Rail-to-Rail Input and Ouput Operational Amplifier	U16, U18	SO-G8		13
1	Digi-Key	296-6911-5-ND	SN65LVDS048	LVDS RCVR	U17	SO-G16		9
1	Digi-Key	AD5060BRJZ-1REEL7CT-ND	AD5060	16 bit DAC, 250kSPS, unipolar, serial	U19	SSO-G8/SM8		9
1	Digi-Key	AD7687BRMZ-ND	AD7687	16 bit ADC, 250kSPS, pseudo differential, serial	U20	TSSO3x5-G10	FP	5
1	Digi-Key	122-1454-5-ND	XCF08PVOG48C	XCF00P Series, Platform Flash In-System Programmable Configuration 1.8V PROM, 48-Pin TSSOP, Pb-Free, 8-Megabit, Commercial Grade	U30	VOG48	FP	5
1	Digi-Key	296-8521-1-ND	SN74LVC541APW	Octal Buffer/Driver with 3-State Outputs	U31	PW020		9
1	Digi-Key	A32878-ND, AT25256A-10PU-1.8-ND	AT25256A	4K Serial SPI EEPROM with Positive Clock Strobe, use socket	U32	PSDIP8B	TH	5
1	Digi-Key	296-19627-1-ND	SN65HVD32D	Full-Duplex RS 485 Drivers and Receivers, 3.3 V	U34	SO-G8		9
1	Digi-Key	XC1054CT-ND	ECS-3525-250-B-TR	Oscillator, SMD	U39	OSC_5032		9
3	Digi-Key	LT1763CS8#PBF-ND	LT1763	Positive voltage regulator	U40, U45, U47	SO-G8		17
1	Digi-Key	576-1030-ND	KS8721	Ethernet PHY, 10/100Base/T, GII interface	U41	F-QFP7x7-G48/N	FP	5
1	Digi-Key	CY62167DV30LL-55ZXI	CY62167	16-Mbit (1M x 16 / 2M x 8) Static RAM	U42	TSSO12x20-G48/P.5	FP	5
1	Digi-Key	LT1963AEQ#PBF-ND	LT1963A	5 Terminal positive LDO regulator, 1.5A	U43	TO-263		9
1	Digi-Key	LT1763CS8-5-ND	LT1763-5	Positive voltage regulator	U44	SO-G8		9
1	Digi-Key	LT1963AEQ-1.5#PBF-ND	LT1963A-2.5	5 Terminal positive LDO regulator, 1.5A	U46	TO-263		9
1	Digi-Key	LT1763CS8-1.8-ND	LT1763-1.8	Positive voltage regulator	U48	SO-G8		9
1	Digi-Key	LTC1144IS8#PBF-ND	LTC1144	Switched capacitor voltage inverter	U50	SO-G8		9
1	Mouser	595-PTH08T240WAS	PTH08T240W	Adjustable power module, 10A, 4.5V to 14V input, non-isolated	U52	PTH08T240W		9
767	Total pieces							

Summary per Board	
Total # of unique parts	121
SMT Placements per board	705
Thru-Hole placement per board	57
Fine pitch placement per board	4
BGA placement per board	1