1. ALL RESISTANCE VALUES ARE IN OHMS, 0.1 WATT +/- 5%.
2. ALL CAPACITANCE VALUES ARE IN MICROFARADS.
3. ALL CRYSTALS & OSCILLATOR VALUES ARE IN HERTZ.

REV	ECN	DESCRIPTION OF REVISION	CK-APPR	DATE
0	09041287	ENGINEERING RELEASED		2009-09-08

D11 MLB - PVT

LAST_MODIFICATION=Wed Jul 6 08:55:26 2016

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Schematic & PCB Callouts

CONFIG	QTY	DESCRIPTION	REFERENCE DESIGNATORS	CRITICAL	SCH OPTION
D11-SCHEM	1	SCH,MLB,D11,V0	SCH	OPTIONAL	
D11-PCB01	1	PCB,MLB,D11,V0	PCB	OPTIONAL	

SCH 051-00482
BRD 820-00229
MCO 056-01585

System Block Diagram:

<rdar://problem/16684269>

NAND BOM Options

DATE	QTY	DESCRIPTION	REFERENCE DESIGNATORS	CRITICAL	SCH OPTION
09080418	1	NAND,16GB,MLC,V0	U2100	NONCRITICAL	NAND_16G
09080418	1	NAND,32GB,TSOP,V0	U2100	NONCRITICAL	NAND_32G
09080418	1	NAND,64GB,TSOP,V0	U2100	NONCRITICAL	NAND_64G
09080418	1	NAND,128GB,TSOP,V0	U2100	NONCRITICAL	NAND_128G
09080418	1	NAND,256GB,TSOP,V0	U2100	NONCRITICAL	NAND_256G

PART NUMBER	ALTERNATE PART NUMBER	SCH OPTION	REF DES	COMMENTS
338S0000		DEFAULT	C2100,C2101,C2102,C2103,C2104,C2105,C2106,C2107,C2108,C2109,C2110,C2111,C2112,C2113,C2114,C2115,C2116,C2117,C2118,C2119,C2120,C2121,C2122,C2123,C2124,C2125,C2126,C2127,C2128,C2129,C2130,C2131,C2132,C2133,C2134,C2135,C2136,C2137,C2138,C2139,C2140,C2141,C2142,C2143,C2144,C2145,C2146,C2147,C2148,C2149,C2150,C2151,C2152,C2153,C2154,C2155,C2156,C2157,C2158,C2159,C2160,C2161,C2162,C2163,C2164,C2165,C2166,C2167,C2168,C2169,C2170,C2171,C2172,C2173,C2174,C2175,C2176,C2177,C2178,C2179,C2180,C2181,C2182,C2183,C2184,C2185,C2186,C2187,C2188,C2189,C2190,C2191,C2192,C2193,C2194,C2195,C2196,C2197,C2198,C2199,C2200,C2201,C2202,C2203,C2204,C2205,C2206,C2207,C2208,C2209,C2210,C2211,C2212,C2213,C2214,C2215,C2216,C2217,C2218,C2219,C2220,C2221,C2222,C2223,C2224,C2225,C2226,C2227,C2228,C2229,C2230,C2231,C2232,C2233,C2234,C2235,C2236,C2237,C2238,C2239,C2240,C2241,C2242,C2243,C2244,C2245,C2246,C2247,C2248,C2249,C2250,C2251,C2252,C2253,C2254,C2255,C2256,C2257,C2258,C2259,C2260,C2261,C2262,C2263,C2264,C2265,C2266,C2267,C2268,C2269,C2270,C2271,C2272,C2273,C2274,C2275,C2276,C2277,C2278,C2279,C2280,C2281,C2282,C2283,C2284,C2285,C2286,C2287,C2288,C2289,C2290,C2291,C2292,C2293,C2294,C2295,C2296,C2297,C2298,C2299,C2300,C2301,C2302,C2303,C2304,C2305,C2306,C2307,C2308,C2309,C2310,C2311,C2312,C2313,C2314,C2315,C2316,C2317,C2318,C2319,C2320,C2321,C2322,C2323,C2324,C2325,C2326,C2327,C2328,C2329,C2330,C2331,C2332,C2333,C2334,C2335,C2336,C2337,C2338,C2339,C2340,C2341,C2342,C2343,C2344,C2345,C2346,C2347,C2348,C2349,C2350,C2351,C2352,C2353,C2354,C2355,C2356,C2357,C2358,C2359,C2360,C2361,C2362,C2363,C2364,C2365,C2366,C2367,C2368,C2369,C2370,C2371,C2372,C2373,C2374,C2375,C2376,C2377,C2378,C2379,C2380,C2381,C2382,C2383,C2384,C2385,C2386,C2387,C2388,C2389,C2390,C2391,C2392,C2393,C2394,C2395,C2396,C2397,C2398,C2399,C2400,C2401,C2402,C2403,C2404,C2405,C2406,C2407,C2408,C2409,C2410,C2411,C2412,C2413,C2414,C2415,C2416,C2417,C2418,C2419,C2420,C2421,C2422,C2423,C2424,C2425,C2426,C2427,C2428,C2429,C2430,C2431,C2432,C2433,C2434,C2435,C2436,C2437,C2438,C2439,C2440,C2441,C2442,C2443,C2444,C2445,C2446,C2447,C2448,C2449,C2450,C2451,C2452,C2453,C2454,C2455,C2456,C2457,C2458,C2459,C2460,C2461,C2462,C2463,C2464,C2465,C2466,C2467,C2468,C2469,C2470,C2471,C2472,C2473,C2474,C2475,C2476,C2477,C2478,C2479,C2480,C2481,C2482,C2483,C2484,C2485,C2486,C2487,C2488,C2489,C2490,C2491,C2492,C2493,C2494,C2495,C2496,C2497,C2498,C2499,C2500,C2501,C2502,C2503,C2504,C2505,C2506,C2507,C2508,C2509,C2510,C2511,C2512,C2513,C2514,C2515,C2516,C2517,C2518,C2519,C2520,C2521,C2522,C2523,C2524,C2525,C2526,C2527,C2528,C2529,C2530,C2531,C2532,C2533,C2534,C2535,C2536,C2537,C2538,C2539,C2540,C2541,C2542,C2543,C2544,C2545,C2546,C2547,C2548,C2549,C2550,C2551,C2552,C2553,C2554,C2555,C2556,C2557,C2558,C2559,C2560,C2561,C2562,C2563,C2564,C2565,C2566,C2567,C2568,C2569,C2570,C2571,C2572,C2573,C2574,C2575,C2576,C2577,C2578,C2579,C2580,C2581,C2582,C2583,C2584,C2585,C2586,C2587,C2588,C2589,C2590,C2591,C2592,C2593,C2594,C2595,C2596,C2597,C2598,C2599,C2600,C2601,C2602,C2603,C2604,C2605,C2606,C2607,C2608,C2609,C2610,C2611,C2612,C2613,C2614,C2615,C2616,C2617,C2618,C2619,C2620,C2621,C2622,C2623,C2624,C2625,C2626,C2627,C2628,C2629,C2630,C2631,C2632,C2633,C2634,C2635,C2636,C2637,C2638,C2639,C2640,C2641,C2642,C2643,C2644,C2645,C2646,C2647,C2648,C2649,C2650,C2651,C2652,C2653,C2654,C2655,C2656,C2657,C2658,C2659,C2660,C2661,C2662,C2663,C2664,C2665,C2666,C2667,C2668,C2669,C2670,C2671,C2672,C2673,C2674,C2675,C2676,C2677,C2678,C2679,C2680,C2681,C2682,C2683,C2684,C2685,C2686,C2687,C2688,C2689,C2690,C2691,C2692,C2693,C2694,C2695,C2696,C2697,C2698,C2699,C2700,C2701,C2702,C2703,C2704,C2705,C2706,C2707,C2708,C2709,C2710,C2711,C2712,C2713,C2714,C2715,C2716,C2717,C2718,C2719,C2720,C2721,C2722,C2723,C2724,C2725,C2726,C2727,C2728,C2729,C2730,C2731,C2732,C2733,C2734,C2735,C2736,C2737,C2738,C2739,C2740,C2741,C2742,C2743,C2744,C2745,C2746,C2747,C2748,C2749,C2750,C2751,C2752,C2753,C2754,C2755,C2756,C2757,C2758,C2759,C2760,C2761,C2762,C2763,C2764,C2765,C2766,C2767,C2768,C2769,C2770,C2771,C2772,C2773,C2774,C2775,C2776,C2777,C2778,C2779,C2780,C2781,C2782,C2783,C2784,C2785,C2786,C2787,C2788,C2789,C2790,C2791,C2792,C2793,C2794,C2795,C2796,C2797,C2798,C2799,C2800,C2801,C2802,C2803,C2804,C2805,C2806,C2807,C2808,C2809,C2810,C2811,C2812,C2813,C2814,C2815,C2816,C2817,C2818,C2819,C2820,C2821,C2822,C2823,C2824,C2825,C2826,C2827,C2828,C2829,C2830,C2831,C2832,C2833,C2834,C2835,C2836,C2837,C2838,C2839,C2840,C2841,C2842,C2843,C2844,C2845,C2846,C2847,C2848,C2849,C2850,C2851,C2852,C2853,C2854,C2855,C2856,C2857,C2858,C2859,C2860,C2861,C2862,C2863,C2864,C2865,C2866,C2867,C2868,C2869,C2870,C2871,C2872,C2873,C2874,C2875,C2876,C2877,C2878,C2879,C2880,C2881,C2882,C2883,C2884,C2885,C2886,C2887,C2888,C2889,C2890,C2891,C2892,C2893,C2894,C2895,C2896,C2897,C2898,C2899,C2900,C2901,C2902,C2903,C2904,C2905,C2906,C2907,C2908,C2909,C2910,C2911,C2912,C2913,C2914,C2915,C2916,C2917,C2918,C2919,C2920,C2921,C2922,C2923,C2924,C2925,C2926,C2927,C2928,C2929,C2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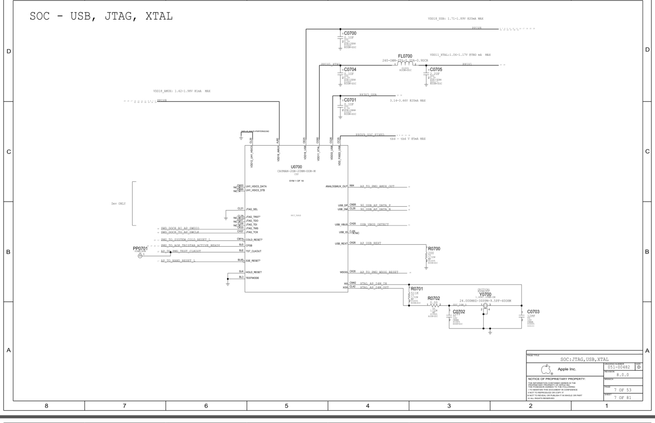
SOC - USB, JTAG, XTAL
U0700
C0700
C0704
C0701
FL0700
R0700
R0701
R0702
Y0700
C0702
C0703
P0701
SOC:JTAG,USB,XTAL
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8.0.0
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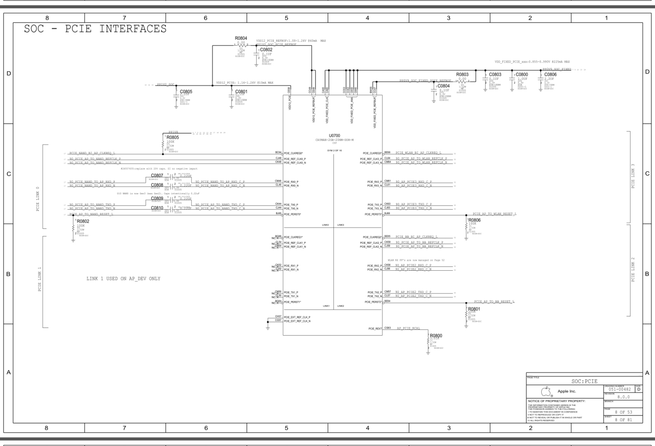
SOC - PCIE INTERFACES
U0700
R0804
R0805
R0806
R0807
R0801
R0803
SOC:PCIE
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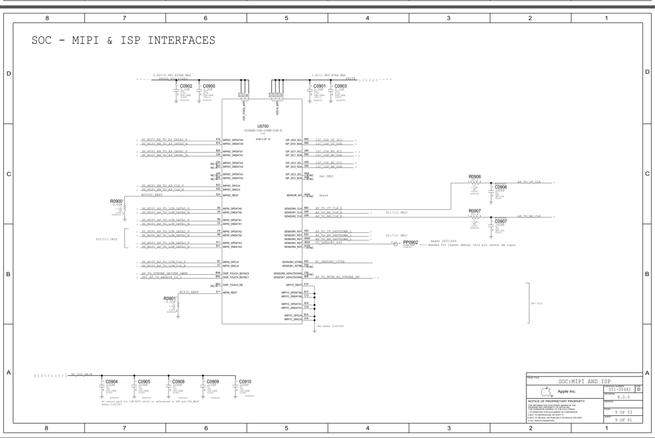
SOC - MIPI & ISP INTERFACES
U0700
C0904
C0905
C0906
C0909
C0910
R0906
R0907
SOC:MIPI AND ISP
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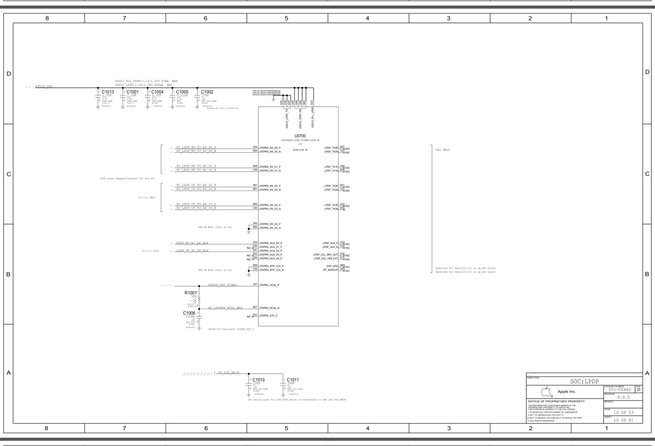
U0700
C1010
C1011
R1001
C1006
SOC:GPOP
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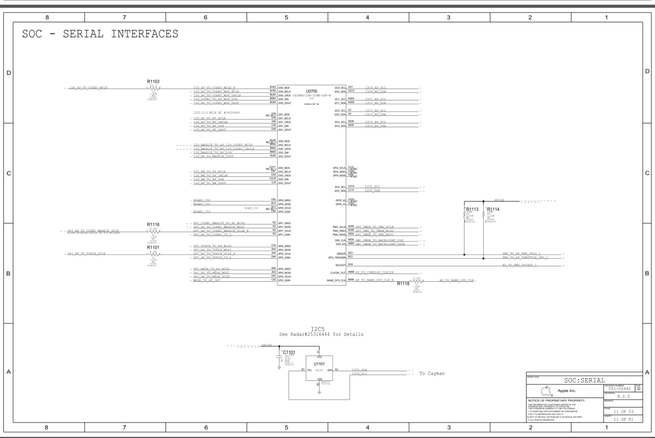
SOC - SERIAL INTERFACES
U0700
R1103
R1116
R1101
R1113
R1114
R1118
U0701
C1102
To Cayman
SOC:SERIAL
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8.0.0
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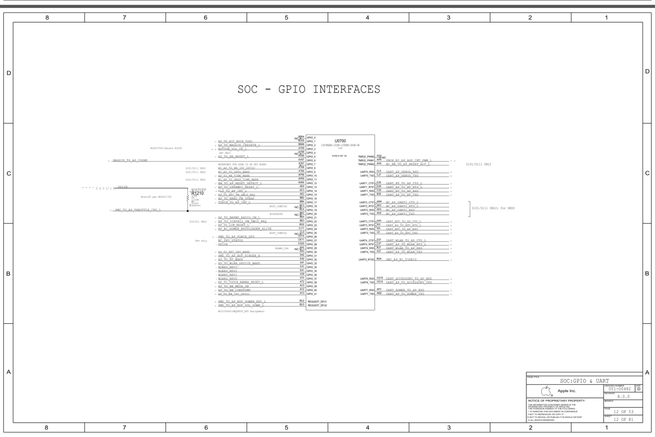
SOC - GPIO INTERFACES
U0700
R0210
SOC:GPIO & UART
Apple Inc.
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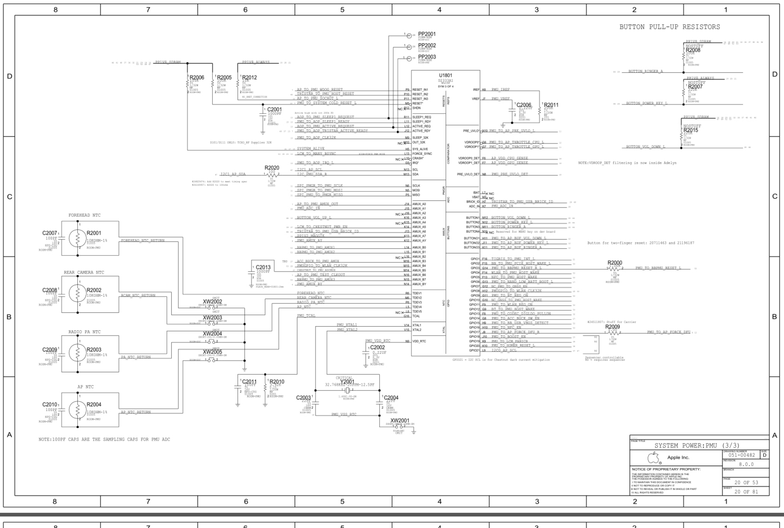
SOC - AOP

SOC - CPU, GPU & SOC RAILS

SOC - POWER SUPPLIES

SOC - POWER SUPPLIES


BUTTON PULL-UP RESISTORS
U1801
U2101
U2201
U2301
U2401
U2402
U2404
U2403
FORGEHAS NTC
REAR CAMERA NTC
RADIO FA NTC
AP NTC
NOTE:100PF CAPS ARE THE SAMPLING CAPS FOR PMU ADC
SYSTEM POWER:PMU (3/3)
Apple Inc.
051-00482
6
8.0.0
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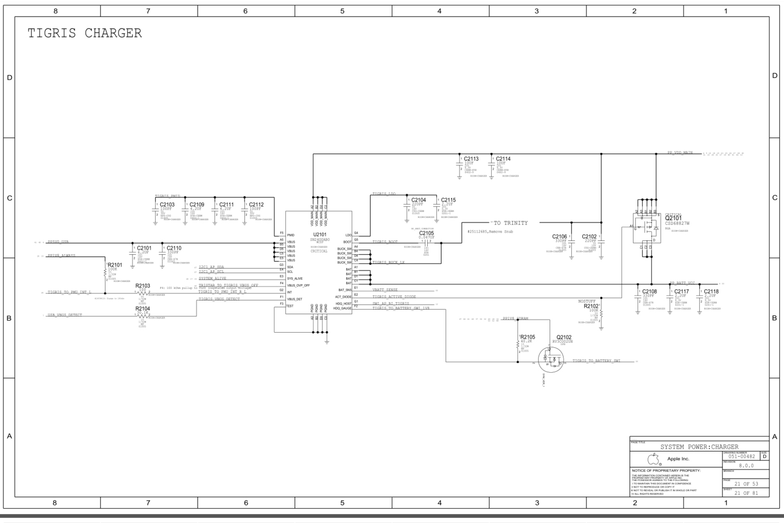
TIGRIS CHARGER
TO TRINITY
SYSTEM POWER:CHARGER
Apple Inc.
051-00482
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8.0.0
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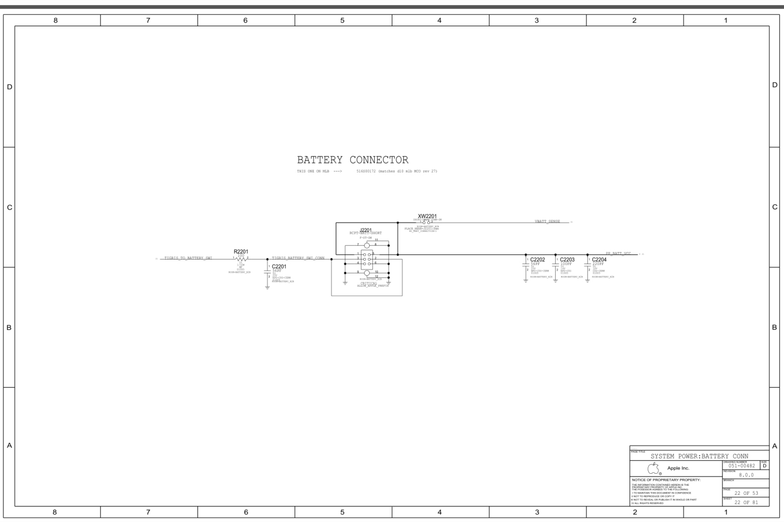
BATTERY CONNECTOR
SYSTEM POWER:BATTERY CONN
Apple Inc.
051-00482
6
8.0.0
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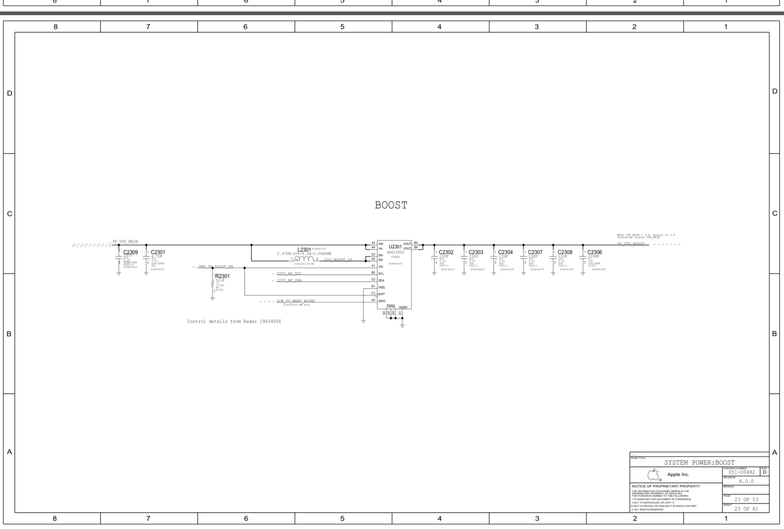
BOOST
SYSTEM POWER:BOOST
Apple Inc.
051-00482
6
8.0.0
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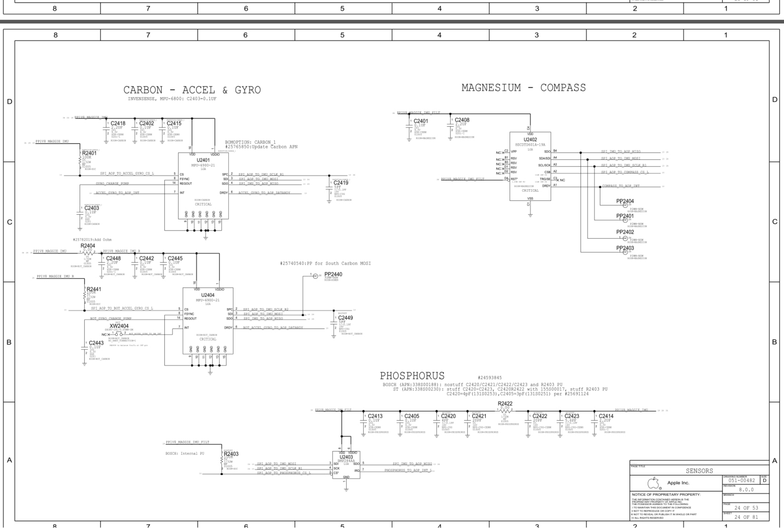
CARBON - ACCEL & GYRO
MAGNESIUM - COMPASS
PHOSPHORUS
SENSORS
Apple Inc.
051-00482
6
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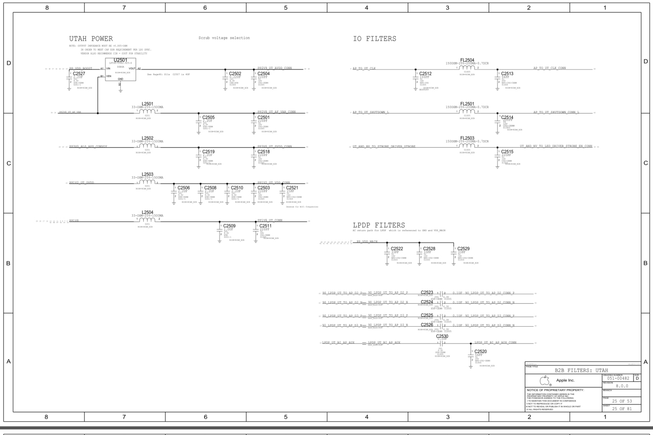
UTAH POWER
IO FILTERS
LPDP FILTERS
B28 FILTERS: UTAH
Apple Inc.
051-00442
0.0.0
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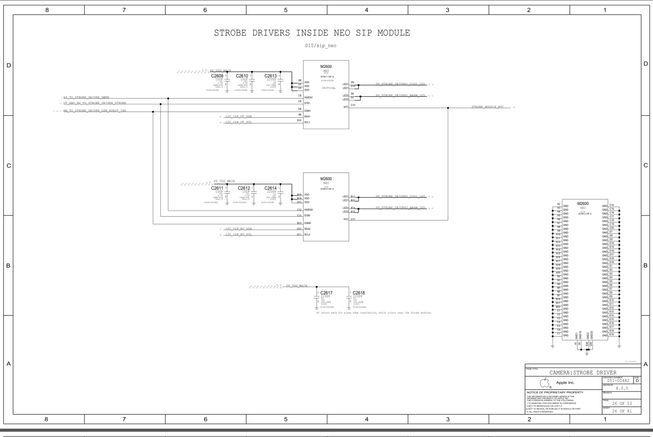
STROBE DRIVERS INSIDE NEO SIP MODULE
CAMERA/STROBE DRIVER
Apple Inc.
051-00442
0.0.0
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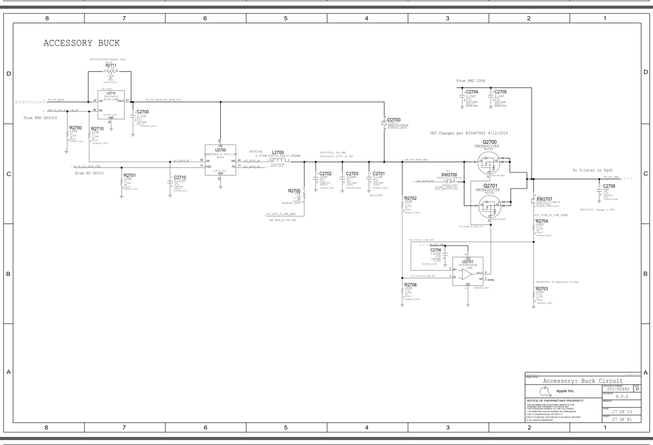
ACCESSORY BUCK
Accessory: Buck Circuit
Apple Inc.
051-00442
0.0.0
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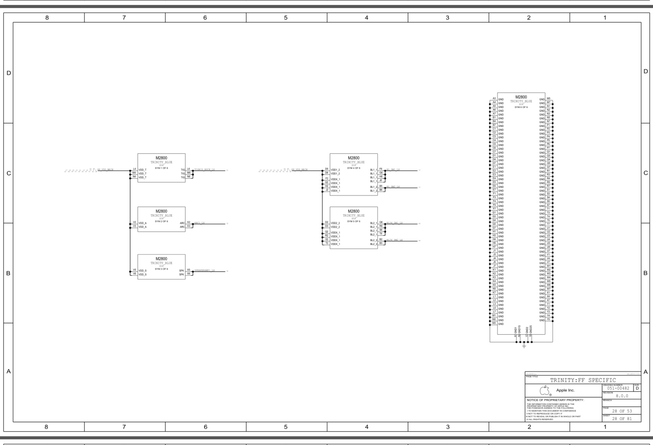
TRINITY:FP SPECIFIC
Apple Inc.
051-00442
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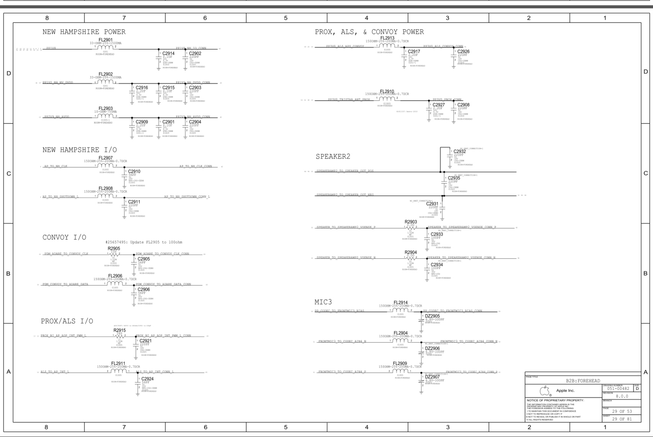
NEW HAMPSHIRE POWER
PROX, ALS, & CONVOY POWER
NEW HAMPSHIRE I/O
SPEAKER2
CONVOY I/O
MIC3
PROX/ALS I/O
B28:FOREHEAD
Apple Inc.
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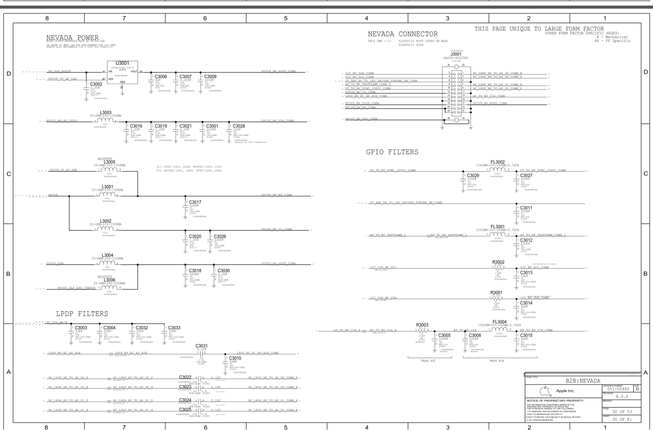
NEVADA POWER
NEVADA CONNECTOR
THIS PAGE UNIQUE TO LARGE FORM FACTOR
GPIO FILTERS
LPDP FILTERS
B28:NEVADA
Apple Inc.
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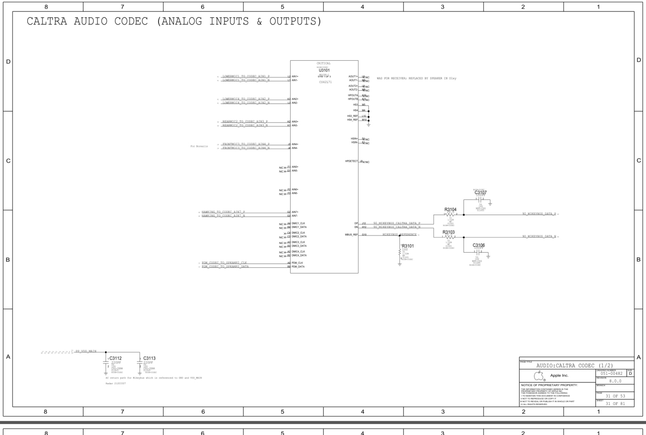
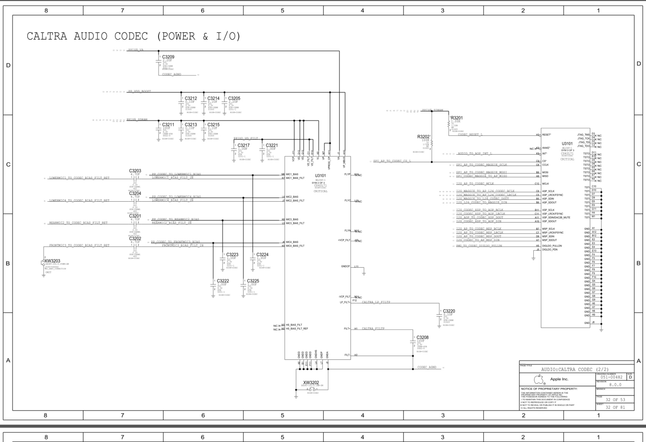
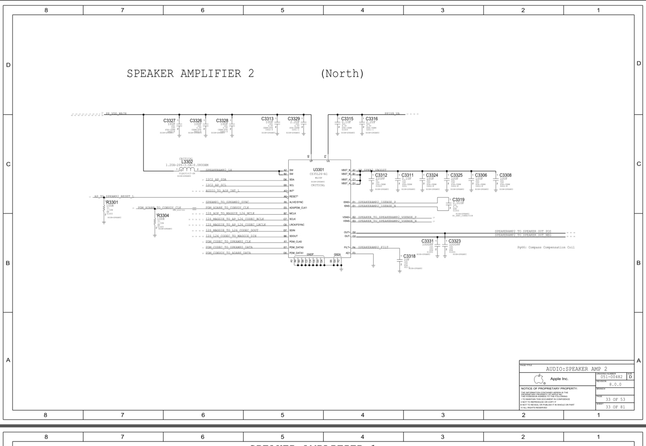
CALTRA AUDIO CODEC (ANALOG INPUTS & OUTPUTS)



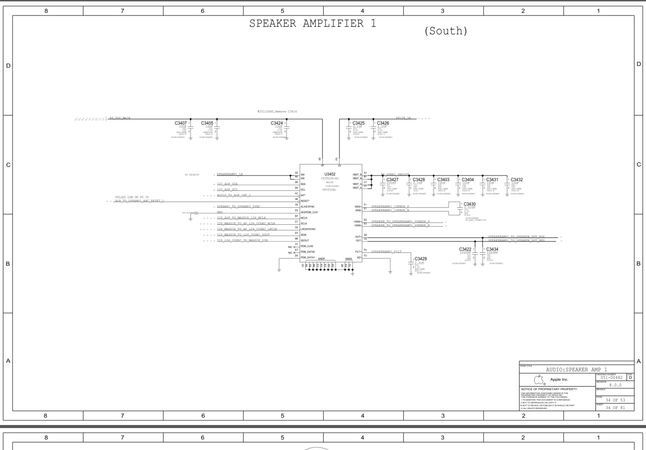
CALTRA AUDIO CODEC (POWER & I/O)



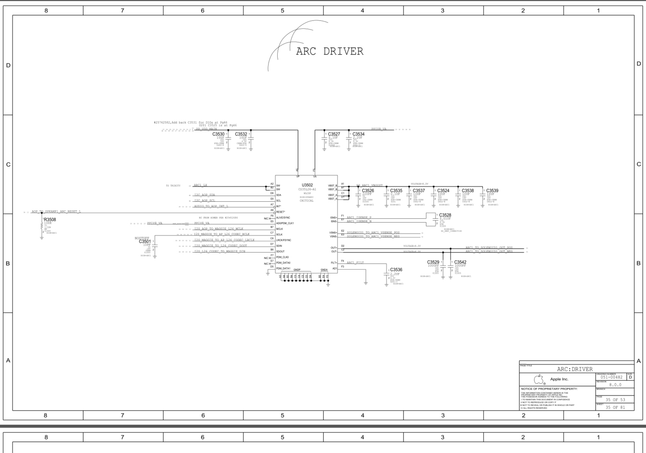
SPEAKER AMPLIFIER 2 (North)



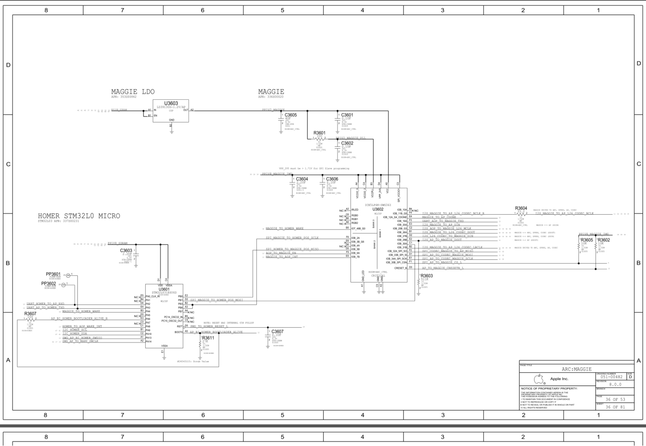
SPEAKER AMPLIFIER 1 (South)



ARC DRIVER

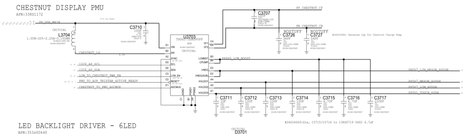


MAGGIE LDO / MAGGIE / HOMER STM32L0 MICRO



DISPLAY & TOUCH - POWER SUPPLIES

CHESTNUT DISPLAY PMU
APN:338S0172



D1x I2C Table

Bus	Device	Binary	7-bit Address	8-bit Address	Max Speed
ISP I2C0 *1MHz*	SALT LAKE (PRIMARY)	0010000X	0x10	0x20	1 MHz
	SALT LAKE (SECONDARY)	0110000X	0x30	0x60	1 MHz
	GRUNBERG (STANDARD)	0011100X	0x1C	0x38	1 MHz
	GRUNBERG (SPECIAL ABSOLUTE R/W)	0011101X	0x1D	0x3A	1 MHz
	GRUNBERG (SPECIAL DELTA READ)	0011110X	0x1E	0x3C	1 MHz
	STROBE 1	1100011X	0x63	0xC6	1 MHz
ISP I2C1 *1MHz*	LAS VEGAS (PRIMARY)	0100000X	0x20	0x40	1 MHz
	LAS VEGAS (SECONDARY)	0110000X	0x30	0x60	1 MHz
	EDWIN	1100011X	0x63	0xC6	400 kHz
	STROBE 2	0000110X	0x06	0x0C	1 MHz
ISP I2C2 *400kHz*	CONCORD	0010000X	0x10	0x20	1 MHz
AOP I2C *1MHz*	ARC DRIVER 1	100000YX	0x41	0x82	1 MHz
	PROX	1011000X	0x58	0xB0	1 MHz
	SPKAMP1 (L26)	100000YX	0x40	0x80	1 MHz
	TURTLE	0101100X	0x2c	0x58	400 kHz
	MESA	1100001X	0x61	0xC2	400 kHz
Touch I2C *600kHz*	MAMBA	1100000X	0x60	0xC0	1 MHz
	MESON	1000000X	0x40	0x80	510 kHz
EEPROM I2C	EEPROM	1010001X	0x51	0xA2	400 kHz
AP I2C0 *400kHz*	BOOST	1110101X	0x75	0xEA	3.4 MHz
	TRISTAR	0011010X	0x1A	0x34	400 kHz
	BACKLIGHT 1	1100010X	0x62	0xC4	1 MHz
	CHESTNUT	0100111X	0x27	0x4E	400 kHz
AP I2C1 *400kHz*	ADELYN	1110100X	0x74	0xE8	400 kHz
	TIGRIS	1110101X	0x75	0xEA	400 kHz
	BACKLIGHT 2	1100010X	0x62	0xC4	1 MHz
AP I2C2 *400kHz*	ALS	0101001X	0x29	0x52	400 kHz
	CONVOY	0100001X	0x21	0x42	3.4 MHz
		0100010X	0x22	0x44	400 kHz
	SPKAMP 2 (L26)	100000ZYX	0x40	0x80	400 MHz
AP I2C3 *100kHz*	DOCK FLEX (MIC1)	1010100X	0x54	0xA8	1 MHz
	COMBINED BUTTON FLEX (MIC2)	1010100X	0x56	0xAC	1 MHz
	DISP EEPROM	1010001X	0x51	0xA2	400kHz
Homer I2C *1MHz*	SCHRODINGER (STANDARD)	0001110X	0xE	0x1C	1 MHz
	SCHRODINGER (CAL REG'S)	0001111X	0xF	0x1D	1 MHz
	EEPROM (STANDARD)	1010000X	0x50	0xA0	
	EEPROM (CONFIG)	1010000X	0x50	0xA0	

This page controls elements different accross all MLBs

PCIe Lanes

1. ALL RESISTANCE VALUES ARE IN OHMS, 5% UNLESS OTHERWISE NOTED
2. ALL CAPACITANCE VALUES ARE IN MICROFARADS
3. ALL CRYSTALS & OSCILLATOR VALUES ARE IN MHRTZ

REV	ECN	DESCRIPTION OF REVISION	BY	DATE
0.0	3000147	ENGINEERING RELEASE		2016-06-22

STOCKHOLM MLB
JUNE 22, 2016

ALTERNATES

PART NUMBER	ALTERNATE PART NUMBER	REFERENCE DESIGNATOR(S)	DESCRIPTION	BOM OPTION
1320456	1320457	C1104_AF	0.22UF 20% 6.3V X5R	

DATE	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	DATAL	BOM OPTION
2016-06-22	1	1320456, 0.22UF, 6.3V, X5R, 0201, 20%	C1104_AF	3000147	

BOM OPTIONS

DATE	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
2016-06-22	1	1320456, 0.22UF, 6.3V, X5R, 0201, 20%	C1104_AF	
2016-06-22	1	1320457, 0.22UF, 6.3V, X5R, 0201, 10%	C1104_AF	0010
2016-06-22	1	1320461, 1000, 50V, 0C, NP0	C1110_AF	0010
2016-06-22	1	1320462, 1000, 50V, 0C, NP0	C1110_AF	0020
2016-06-22	1	1320463, 1000, 50V, 0C, NP0	C1110_AF	0030
2016-06-22	1	1320464, 1000, 50V, 0C, NP0	C1110_AF	0040
2016-06-22	1	1320465, 1000, 50V, 0C, NP0	C1110_AF	0050
2016-06-22	1	1320466, 1000, 50V, 0C, NP0	C1110_AF	0060
2016-06-22	1	1320467, 1000, 50V, 0C, NP0	C1110_AF	0070
2016-06-22	1	1320468, 1000, 50V, 0C, NP0	C1110_AF	0080
2016-06-22	1	1320469, 1000, 50V, 0C, NP0	C1110_AF	0090
2016-06-22	1	1320470, 1000, 50V, 0C, NP0	C1110_AF	0100
2016-06-22	1	1320471, 1000, 50V, 0C, NP0	C1110_AF	0110
2016-06-22	1	1320472, 1000, 50V, 0C, NP0	C1110_AF	0120
2016-06-22	1	1320473, 1000, 50V, 0C, NP0	C1110_AF	0130
2016-06-22	1	1320474, 1000, 50V, 0C, NP0	C1110_AF	0140
2016-06-22	1	1320475, 1000, 50V, 0C, NP0	C1110_AF	0150
2016-06-22	1	1320476, 1000, 50V, 0C, NP0	C1110_AF	0160
2016-06-22	1	1320477, 1000, 50V, 0C, NP0	C1110_AF	0170
2016-06-22	1	1320478, 1000, 50V, 0C, NP0	C1110_AF	0180
2016-06-22	1	1320479, 1000, 50V, 0C, NP0	C1110_AF	0190
2016-06-22	1	1320480, 1000, 50V, 0C, NP0	C1110_AF	0200
2016-06-22	1	1320481, 1000, 50V, 0C, NP0	C1110_AF	0210
2016-06-22	1	1320482, 1000, 50V, 0C, NP0	C1110_AF	0220
2016-06-22	1	1320483, 1000, 50V, 0C, NP0	C1110_AF	0230
2016-06-22	1	1320484, 1000, 50V, 0C, NP0	C1110_AF	0240
2016-06-22	1	1320485, 1000, 50V, 0C, NP0	C1110_AF	0250
2016-06-22	1	1320486, 1000, 50V, 0C, NP0	C1110_AF	0260
2016-06-22	1	1320487, 1000, 50V, 0C, NP0	C1110_AF	0270
2016-06-22	1	1320488, 1000, 50V, 0C, NP0	C1110_AF	0280
2016-06-22	1	1320489, 1000, 50V, 0C, NP0	C1110_AF	0290
2016-06-22	1	1320490, 1000, 50V, 0C, NP0	C1110_AF	0300
2016-06-22	1	1320491, 1000, 50V, 0C, NP0	C1110_AF	0310
2016-06-22	1	1320492, 1000, 50V, 0C, NP0	C1110_AF	0320

STOCKHOLM

NFC CONTROLLER

5V BOOSTER

NFC FRONT END

NFC LOAD SWITCH

1. ALL RESISTANCE VALUES ARE IN OHMS, 5% UNLESS OTHERWISE NOTED
2. ALL CAPACITANCE VALUES ARE IN MICROFARADS
3. ALL CRYSTALS & OSCILLATOR VALUES ARE IN MHRTZ

REV	ECN	DESCRIPTION OF REVISION	BY	DATE
0.0	3000147	ENGINEERING RELEASE		2016-06-22

D11 RADIO MLB_FF
FEB 05, 2016

PDF PAGE	CONTENTS
3	METROCIRC

LMBRF:

2016-02-05	1	1320-00-00		DATAL_BF	3000147
2016-02-05	1	1320-00-00		DATAL_BF	3000147

NOLMBRF:

DATE	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	DATAL	BOM OPTION
2016-02-05	1	1320-00-00		DATAL_BF	3000147
2016-02-05	1	1320-00-00		DATAL_BF	3000147

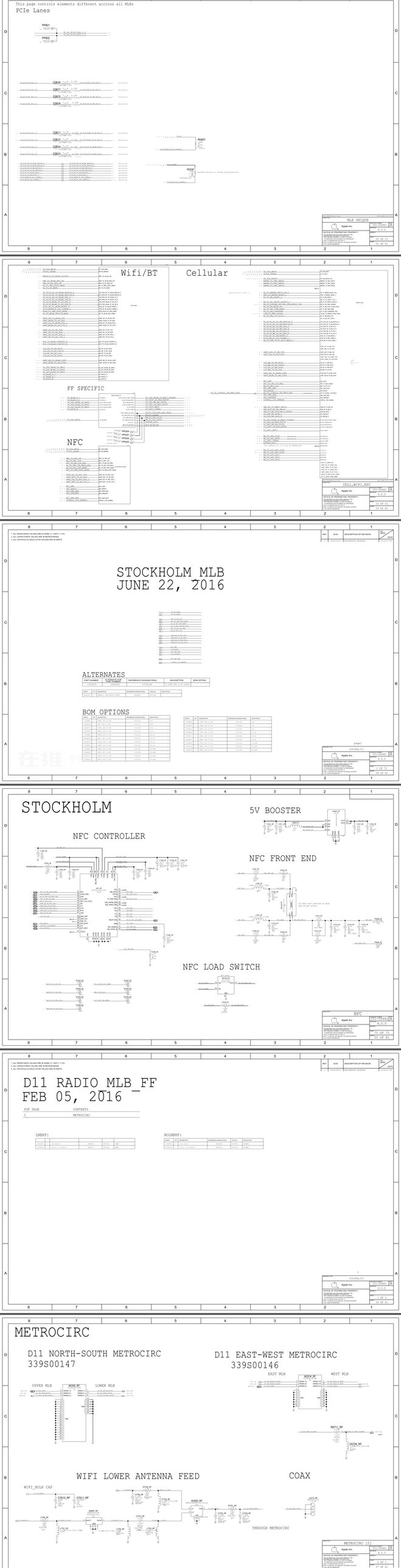
METROCIRC

D11 NORTH-SOUTH METROCIRC
339S00147

D11 EAST-WEST METROCIRC
339S00146

WIFI LOWER ANTENNA FEED

COAX



UAT TUNER FLEX

PLEASE CONTACT ANTENNA (MATT MOW) FOR ANY COMPONENT CHANGE.

ALT UAT1 GND

LB/MLB/GNSS/MB/HB STANDOFF

5G WIFI STANDOFF

PAGE TITLE	UAT MATCH AND TUNER [3]
DRAWING NUMBER	051-00482
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2. ALL CAPACITANCE VALUES ARE IN MICROFARADS.
3. ALL CRYSTALS & OSCILLATOR VALUES ARE IN HERTZ.

REV	ECN	DESCRIPTION OF REVISION	CK APPD	DATE
8	0006532879	ENGINEERING RELEASED		2016-07-06

D1X WIFI MLB (PERENNIAL) FEBRUARY 1, 2016

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3	77	WIFI FRONT-END

BOM OPTIONS:

POWER
- FP_VDD_MAIN
- PP1V8_SDRAM

CLOCKS
- PMUGPIO_TO_WLAN_CLK32K

CONTROL
- PMU_TO_WLAN_REG_ON
- PMU_TO_BT_REG_ON
- BT_TO_PMU_HOST_WAKE
- AP_TO_BT_WAKE

WLAN PCIE
- 5G_PCIE_AP_TO_WLAN_REFCLK_P
- 5G_PCIE_AP_TO_WLAN_REFCLK_N
- 5G_PCIE_AP_TO_WLAN_TXD_P
- 5G_PCIE_AP_TO_WLAN_TXD_N
- 5G_PCIE_WLAN_TO_AP_RXD_P
- 5G_PCIE_WLAN_TO_AP_RXD_N
- PCIE_AP_TO_WLAN_RESET_L
- PCIE_WLAN_TO_AP_CLKREQ_L
- WLAN_TO_PMU_HOST_WAKE
- AP_TO_WLAN_DEVICE_WAKE

WLAN UART
- UART_WLAN_TO_AP_RXD
- UART_AP_TO_WLAN_TXD
- UART_WLAN_TO_AP_CTS_L
- UART_AP_TO_WLAN_RTS_L

BLUETOOTH UART
- UART_AP_TO_BT_TXD
- UART_BT_TO_AP_RXD
- UART_AP_TO_BT_RTS_L
- UART_BT_TO_AP_CTS_L

AOP
- AOP_TO_WLAN_CONTEXT_A
- AOP_TO_WLAN_CONTEXT_B

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- I2S_AP_TO_BT_BCLK
- I2S_AP_TO_BT_LRCLK
- I2S_BT_TO_AP_DIN
- I2S_AP_TO_BT_DOUT

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- UART_BB_TO_WLAN_COEX
- UART_WLAN_TO_BB_COEX

ANTENNA
- 5G_UAT_WLAN_5G_WEST
- 5G_UAT_WLAN_2G_EAST
- 5G_UAT_WLAN_5G_EAST
- 5G_WLAN_G_1
- 5G_WLAN_A_1
- 5G_UAT2_M

D10_JP:

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
13100648	1	CAP,CER,0.5PF,+/-0.05,01005	C7705_RF	CRITICAL	D10_JP
152000829	1	IND,1.1NH,DN-Q,01005	R7703_RF	CRITICAL	D10_JP
13100853	1	CAP,CER,0.2PF,+/-0.05,01005	C7706_RF	CRITICAL	D10_JP
11700141	1	RES,MF,0 OHM,1/32W,01005	R7711_RF	CRITICAL	D10_JP
11700141	1	RES,MF,0 OHM,1/32W,01005	R7702_RF	CRITICAL	D10_JP
15201988	1	IND,1.0NH,DN-Q,01005	R7704_RF	CRITICAL	D10_JP
13100648	1	CAP,0.5PF,+/-1.0PF,01005	R6711_RF	CRITICAL	D10_JP
15202041	1	IND,7.5NH,DN-Q,01005	C6729_RF	CRITICAL	D10_JP
11700141	1	RES,MF,0 OHM,1/32W,01005	R7708_RF	CRITICAL	D10_JP
15202047	1	IND,6.2NH,DN-Q,01005	C7702_RF	CRITICAL	D10_JP
15201998	DNP 1	IND, 0.8NH,DN-Q,01005	L7708_RF	CRITICAL	D10_JP
15202047	1	IND,6.2NH,DN-Q,01005	L7701_RF	CRITICAL	D10_JP
15201853	1	IND,9.1NH,DN-Q,01005	L7702_RF	CRITICAL	D10_JP
13100681	1	CAP,3.6PF,+/-0.1PF,01005	C7701_RF	CRITICAL	D10_JP
152000838	1	IND,4.0NH,+/-0.1NH,DN-Q,01005	L7703_RF	CRITICAL	D10_JP
11700141	1	RES,MF,0 OHM,1/32W,01005	R7701_RF	CRITICAL	D10_JP

NOSTUFF:C7729_RF,C7711_RF,C7709_RF,C7710_RF, C7707_RF, C7708_RF C7700_RF, C7703_RF,C7704_RF

D10_ROW:

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
13100648	1	CAP,CER,0.5PF,+/-0.05,01005	C7705_RF	CRITICAL	D10_ROW
152000829	1	IND,1.1NH,DN-Q,01005	R7703_RF	CRITICAL	D10_ROW
13100853	1	CAP,CER,0.2PF,+/-0.05,01005	C7706_RF	CRITICAL	D10_ROW
11700141	1	RES,MF,0 OHM,1/32W,01005	R7711_RF	CRITICAL	D10_ROW
11700141	DNP 1	RES,MF,0 OHM,1/32W,01005	R7702_RF	CRITICAL	D10_ROW
15201988	DNP 1	IND,7.6NH,DN-Q,01005	R7704_RF	CRITICAL	D10_ROW
11700141	DNP 1	RES,MF,0 OHM,1/32W,01005	R6711_RF	CRITICAL	D10_ROW
15201853	DNP 1	IND,9.1NH,DN-Q,01005	C6729_RF	CRITICAL	D10_ROW
11700141	DNP 1	RES,MF,0 OHM,1/32W,01005	R7708_RF	CRITICAL	D10_ROW
15202043	1	IND,6.2NH,DN-Q,01005	C7702_RF	CRITICAL	D10_ROW
15201998	DNP 1	IND, 0.8NH,DN-Q,01005	L7708_RF	CRITICAL	D10_ROW
15202043	1	IND,6.2NH,DN-Q,01005	L7701_RF	CRITICAL	D10_ROW
15201853	1	IND,9.1NH,DN-Q,01005	L7702_RF	CRITICAL	D10_ROW
13100681	1	CAP,3.6PF,+/-0.1PF,01005	C7701_RF	CRITICAL	D10_ROW
152000838	1	IND,4.0NH,+/-0.1NH,DN-Q,01005	L7703_RF	CRITICAL	D10_ROW
11700141	1	RES,MF,0 OHM,1/32W,01005	R7701_RF	CRITICAL	D10_ROW

NOSTUFF:C7729_RF,C7711_RF,C7709_RF,C7710_RF, C7707_RF, C7708_RF C7700_RF, C7703_RF,C7704_RF

D101_WIFI:

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
13100648	1	CAP,CER,0.5PF,+/-0.05,01005	C7705_RF	CRITICAL	D101
152000829	1	IND,1.1NH,DN-Q,01005	R7703_RF	CRITICAL	D101
13100853	1	CAP,CER,0.2PF,+/-0.05,01005	C7706_RF	CRITICAL	D101
11700141	1	RES,MF,0 OHM,1/32W,01005	R7711_RF	CRITICAL	D101
11700141	1	RES,MF,0 OHM,1/32W,01005	R7702_RF	CRITICAL	D101
15201988	DNP 1	IND,7.6NH,DN-Q,01005	R7704_RF	CRITICAL	D101
13100648	DNP 1	CAP,CER,0.5PF,+/-0.05PF,01005	C7708_RF	CRITICAL	D101
11800724	DNP 1	RES,MF, 0 OHM,1/20W, 0201	R6711_RF	CRITICAL	D101
15202054	DNP 1	IND,9.1NH,DN-Q,0201	C6729_RF	CRITICAL	D101
11700141	1	RES,MF,0 OHM,1/32W,01005	R7708_RF	CRITICAL	D101
15202043	DNP 1	IND,6.2NH,DN-Q,01005	C7702_RF	CRITICAL	D101
15201998	DNP 1	IND, 0.8NH,DN-Q,01005	L7708_RF	CRITICAL	D101
15202043	1	IND,6.2NH,DN-Q,01005	L7701_RF	CRITICAL	D101
15201853	1	IND,9.1NH,DN-Q,01005	L7702_RF	CRITICAL	D101
13100681	1	CAP,3.6PF,+/-0.1PF,01005	C7701_RF	CRITICAL	D101
152000838	1	IND,4.0NH,+/-0.1NH,DN-Q,01005	L7703_RF	CRITICAL	D101
11700141	1	RES,MF,0 OHM,1/32W,01005	R7701_RF	CRITICAL	D101

NOSTUFF:C7729_RF,C7711_RF,C7709_RF,C7710_RF, C7707_RF C7700_RF, C7703_RF,C7704_RF

D11_JP:

PART#	TYPE	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
152000273	DNP 1	IND,0.6NH,DN-Q,01005	R7703_RF	CRITICAL	D11_JP
15201976	1	IND,0.7NH,DN-Q,01005	R7711_RF	CRITICAL	D11_JP
13100480	1	CAP,CER,3.5PF+/-1.,01005	R7702_RF	CRITICAL	D11_JP
15201986	DNP 1	IND,F11M,2.2NH,DN-Q,01005	R7704_RF	CRITICAL	D11_JP
11800724	DNP 1	RES,MF, 0 OHM,1/20W,0201	R6711_RF	CRITICAL	D11_JP
15202054	DNP 1	IND,9.1NH,DN-Q,0201	C6729_RF	CRITICAL	D11_JP
13100853	1	CAP,CER,0.2PF,+/-0.05PF,01005	C7705_RF	CRITICAL	D11_JP
13100853	DNP 1	CAP,CER,0.2PF,+/-0.05PF,01005	C7729_RF	CRITICAL	D11_JP
13100648	DNP 1	CAP,CER,0.5PF,+/-0.05PF,01005	C7708_RF	CRITICAL	D11_JP
15201988	DNP 1	IND,7.6NH,+/-0.1NH,DN-Q,01005	R7708_RF	CRITICAL	D11_JP
13100648	DNP 1	CAP,CER,0.5PF,+/-0.05PF,01005	C7702_RF	CRITICAL	D11_JP
13100681	DNP 1	CAP,CER,4.0PF,+/-0.1PF,01005	R7701_RF	CRITICAL	D11_JP
152000273	DNP 1	IND,0.6NH,+/-3NH,DN-Q,01005	L7708_RF	CRITICAL	D11_JP
15201853	1	IND,9.1NH,DN-Q,01005	L7701_RF	CRITICAL	D11_JP
15201853	1	IND,9.1NH,DN-Q,01005	L7702_RF	CRITICAL	D11_JP
11700141	1	RES,MF,0 OHM,1/32W,01005	C7701_RF	CRITICAL	D11_JP

NOSTUFF:C7706_RF, C7711_RF,C7709_RF,C7710_RF, C7707_RF, C7708_RF C7703_RF,C7704_RF,L7703_RF

D111_WIFI:

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
152000273	1	IND,0.6NH,DN-Q,01005	R7703_RF	CRITICAL	D111
15201976	1	IND,0.7NH,DN-Q,01005	R7711_RF	CRITICAL	D111
13100480	1	CAP,CER,3.5PF+/-1.,01005	R7702_RF	CRITICAL	D111
15201986	DNP 1	IND,F11M,2.2NH,DN-Q,01005	R7704_RF	CRITICAL	D111
11800724	DNP 1	RES,MF, 0 OHM,1/20W, 0201	R6711_RF	CRITICAL	D111
15202054	DNP 1	IND,9.1NH,DN-Q,0201	C6729_RF	CRITICAL	D111
13100853	1	CAP,CER,0.2PF,+/-0.05PF,01005	C7705_RF	CRITICAL	D111
13100853	DNP 1	CAP,CER,0.2PF,+/-0.05PF,01005	C7729_RF	CRITICAL	D111
13100648	DNP 1	CAP,CER,0.5PF,+/-0.05PF,01005	C7708_RF	CRITICAL	D111
15201988	DNP 1	IND,7.6NH,+/-0.1NH,DN-Q,01005	R7708_RF	CRITICAL	D111
13100648	DNP 1	CAP,CER,0.5PF,+/-0.05PF,01005	C7702_RF	CRITICAL	D111
13100681	DNP 1	CAP,CER,4.0PF,+/-0.1PF,01005	R7701_RF	CRITICAL	D111
152000273	DNP 1	IND,0.6NH,+/-3NH,DN-Q,01005	L7708_RF	CRITICAL	D111
15201853	1	IND,9.1NH,DN-Q,01005	L7701_RF	CRITICAL	D111
15201853	1	IND,9.1NH,DN-Q,01005	L7702_RF	CRITICAL	D111
11700141	1	RES,MF,0 OHM,1/32W,01005	C7701_RF	CRITICAL	D111

NOSTUFF:C7706_RF, C7711_RF,C7709_RF,C7710_RF, C7707_RF, C7708_RF C7703_RF,C7704_RF,L7703_RF

WIFI_MLB SCHEMATIC

DRAWING TITLE	SCH,MLB,D11
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WIFI/BT

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS
339S0201	339S00199	ALTERNATE	WLAN_RF	ALT WIFI/BT MODULE

SYNC MASTER=WIFI	SYNC DATE=01/30/2014
PAGE TITLE	PERENNIAL
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WIFI UPPER ANTENNA FEEDS

PAGE TITLE	WIFI FRONT-END [77]
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ICEFALL, SIM, DEBUG_CONN

1. ALL RESISTANCE VALUES ARE IN OHMS, 0.1 WATT +/- 5%.
2. ALL CAPACITANCE VALUES ARE IN MICROFARADS.
3. ALL CRYSTALS & OSCILLATOR VALUES ARE IN HERTZ.

REV	ECN	DESCRIPTION OF REVISION	CK APPD	DATE
8	0006532879	ENGINEERING RELEASED		2016-07-06

MAV16 RADIO_MLB

LAST_MODIFICATION=Wed Jun 29 12:06:01 2016

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63	2	BOM_OMIT_TABLE	<SYNC_MASTER2>	<SYNC_DATE2>
64	3	PMU: CONTROL AND CLOCKS	<SYNC_MASTER3>	<SYNC_DATE3>
65	4	PMU: SWITCHERS AND LDOS	<SYNC_MASTER4>	<SYNC_DATE4>
66	5	BASEBAND: POWER2	<SYNC_MASTER5>	<SYNC_DATE5>
67	6	BASEBAND: CONTROL		
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79	18	TDD TRANSMIT		
80	19	FDD TRANSMIT		

SCH: 951-00964
BOM: 939-00826

ALTERNATES

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
197S0545	197S0543	ALTERNATE	Y3501_RF	19MS MHZ XTAL
197S0598	197S0593	ALTERNATE	Y3501_RF	19MS MHZ XTAL
138S00101	138S00090	ALTERNATE	ALL	TRANSITION CAP
335S00013	335S0894	ALTERNATE	EU9GHS_RF	IC SEPAGN
353S00253	353S00321	ALTERNATE	SW9MHZ_RF	IC SWITCH SPDT
155S00235	155S00234	ALTERNATE	UPPS1_RF	WOLMBRF

ALL:C5616_RF-C5618_RF,C5632_RF-C5634_RF

AP CONNECTIONS

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BOM OPTIONS:

LMBRF:

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
353S00723	1	MLB 9GS	WLBPA_RF	CRITICAL	LMBRF
11760002	1	MLB 9GS LAT SUPPOT SWITCH	R7103_RF	CRITICAL	LMBRF
15202042	1	MLB 9GS SAT SUPPOT SWITCH	R7104_RF	CRITICAL	LMBRF
353S00827	1	MLB LOR	WLBLE_RF	CRITICAL	LMBRF
11760002	1	MLB LOR SUPPOT SWITCH	R6713_RF	CRITICAL	LMBRF
155S00139	1	MODTRANSMIT	PPLEB_RF	CRITICAL	LMBRF
11820643	1	MLB,MF,4.99K OHM,01005	R7504_RF	CRITICAL	LMBRF
155S00195	1	FLEX,CONNECTOR,12-WB-BS,SOCK,BRIDGE,0805	UATS1_RF	CRITICAL	LMBRF
155S00158	1	FLEX,CONNECTOR,12-WB-BS,HEADER,0805	UPPS1_RF	CRITICAL	LMBRF
337S00284	1	IC,SECURE ELEMENT,SCM9S12,4K,BGA25	SE2_RF	CRITICAL	LMBRF
13800739	1	CAP,CER,0201	C7201_RF	CRITICAL	LMBRF
13800739	1	CAP,CER,0201	C7524_RF	CRITICAL	LMBRF
13200314	1	CAP,0.5PF,01005	C7501_RF	CRITICAL	LMBRF
13800739	1	CAP,CER,0201	C7523_RF	CRITICAL	LMBRF
13800739	1	CAP,CER,0201	C7524_RF	CRITICAL	LMBRF
138000932	1	CAP,2.2UF,0201	C7529_RF	CRITICAL	LMBRF
138000932	1	CAP,2.2UF,0201	C7539_RF	CRITICAL	LMBRF
13200217	1	CAP,100DF,01005	C7531_RF	CRITICAL	LMBRF
11820627	1	MLB,100OHM,0201	R7512_RF	CRITICAL	LMBRF
353S00526	1	SPA,BGA,DRP	BB2LOG_RF	CRITICAL	LMBRF
13200630	1	CAP,CER,8PF/DIE,27PF,2%,16V,01005	C6383_RF	CRITICAL	LMBRF
13200341	1	CAP,CER,DIE,3.8PF,+/-0.2B,16V,0201,SL-Q	C6384_RF	CRITICAL	LMBRF
15220008	1	IND,F12M,6.2NH,5%,400MA,DN-Q,0201	L6322_RF	CRITICAL	LMBRF
13200630	1	CAP,CER,8PF/DIE,27PF,2%,16V,01005	C6313_RF	CRITICAL	LMBRF
15220008	1	IND,F12M,6.2NH,5%,400MA,DN-Q,0201	L6303_RF	CRITICAL	LMBRF
13200341	1	CAP,CER,DIE,3.8PF,+/-0.2PF,25V,0201,SL-Q	C6304_RF	CRITICAL	LMBRF
13200630	1	CAP,CER,8PF/DIE,27PF,2%,16V,01005	C6104_RF	CRITICAL	LMBRF
15220051	1	IND,1.8NH,1.3A,0201	R6404_RF	CRITICAL	LMBRF
15220050	1	IND,2.8NH,400MA,0201	R7104_RF	CRITICAL	LMBRF
138S00881	1	CAP,CER,0.1UF,25V,0201	C7119_RF	CRITICAL	LMBRF
11820724	1	MLB,MF,200K,1/20W,0201	R6703_RF	CRITICAL	LMBRF
11820724	1	MLB,MF,200K,1/20W,0201	R6708_RF	CRITICAL	LMBRF
13100363	1	CAP,CER,0DB,SL-Q,0.4PF,+/-0.05PF,25V,0201	C7123_RF	CRITICAL	LMBRF
15220052	1	IND,2.7NH,+/-0.1NH,400MA,0201,DN-Q	R6805_RF	CRITICAL	LMBRF
13100337	1	CAP,1.5PF,+/-0.25PF,25V,0201,SL	C6413_RF	CRITICAL	LMBRF
11820724	1	MLB,MF,200K,1/20W,0201	R6404_RF	CRITICAL	LMBRF
13100279	1	CAP,CER,DIE,5.5PF,+/-0.25PF,25V,0201,SL	C6415_RF	CRITICAL	LMBRF
11820608	1	MLB,MF,1K OHM,1%,1/20W,0201	R5811_RF	CRITICAL	LMBRF
15201354	1	IND,10NH,5%,250MA,ET-Q,0201	C6413_RF	CRITICAL	LMBRF

NOLMBRF:

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
13L88444	1	SPA/PKG BB FILTER BAS7B	B6301_RF	CRITICAL	NOLMBRF
152S02520	1	SPA/PKG BB FILTER BAS7B	L6320_RF	CRITICAL	NOLMBRF
155S00145	1	SPA/PKG BB FILTER	GSM8X_RF	CRITICAL	NOLMBRF
152S02005	1	SPA/PKG BB WATCH (BCD)	L6318_RF	CRITICAL	NOLMBRF
13L88319	1	SPA/PKG BB WATCH (BCD)	C6332_RF	CRITICAL	NOLMBRF
13L88630	1	SPA/PKG BB WATCH (BCD)	C6340_RF	CRITICAL	NOLMBRF
152S02005	1	SPA/PKG BB WATCH (BCD)	L6319_RF	CRITICAL	NOLMBRF
13L88385	1	SPA/PKG BB WATCH (BCD)	C6333_RF	CRITICAL	NOLMBRF
13L88630	1	SPA/PKG BB WATCH (BCD)	C6341_RF	CRITICAL	NOLMBRF
155S00143	1	SPA/PKG/SAW	PPLEB_RF	CRITICAL	NOLMBRF
155S00199	1	FILTER,SAW,BAND TRNS,LB-MB-HB,SMD,1.0MM	UATS1_RF	CRITICAL	NOLMBRF
155S00234	1	FILTER,SAW,BAND TRNS,LB-MB-HB,SMD0402,0805	UPPS1_RF	CRITICAL	NOLMBRF
11820724	1	RES,MF,200K,1/20W,0201	R6404_RF	CRITICAL	NOLMBRF
152S02044	1	IND,2.2NH,+/-0.3NH,400MA,0201	R7104_RF	CRITICAL	NOLMBRF
152S00157	1	2.2NH,+/-0.03NH,2.1A,DN-Q,0201	R6703_RF	CRITICAL	NOLMBRF
13L88549	1	1NH,0201,DU	R6708_RF	CRITICAL	NOLMBRF
13L88445	1	CAP,CER,12PF,5%,25V,0201,SL-Q	R6606_RF	CRITICAL	NOLMBRF

D10 SPECIFIC:

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
13L88278	1	CAP,CER,DIE,SPF,+/-0.1PF,25V,0201,SL-Q	C7120_RF	CRITICAL	D10

D11 SPECIFIC:

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
13L88425	1	CAP,CER,DIE,0.5PF,+/-0.05PF,25V,0201,SL-Q	C7120_RF	CRITICAL	D11

PMU: CONTROL AND CLOCKS

HW REV ID	R5505	R5501	REVISION
0.10V	887K	51.1K	DEV1
0.20V	422K	51.1K	DEV2
0.30V	255K	51.1K	DEV 2.1
0.40V	180K	51.1K	DEV 3
0.50V	124K	51.1K	T181
0.60V	102K	51.1K	PP/P1
0.70V	82.5K	51.1K	DEV4
0.80V	63.4K	51.1K	P2
0.90V	51.1K	51.1K	DEV5
1.00V	51.1K	63.4K	EVT
1.10V	51.1K	82.5K	EVT DOE
1.20V	50.0K	100K	EVT ALT/CARBON
1.30V	39.0K	100K	DEV6
1.40V	14.7K	51.1K	CARRIER
1.50V	40.2K	200K	DVT
1.60V	6.34K	51.1K	PVT

RESET AND CONTROL: PMU

MPPS AND GPIOS: PMU

XTAL AND CLOCK: PMU

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PMU: SWITCHERS AND LDOS

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BASEBAND: POWER

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BASEBAND: CONTROL AND INTERFACES

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BASEBAND: GPIOS

SKU	R5911 RF	R5912 RF
ROW	NOSTUFF	NOSTUFF
JP	1.0 KOHM	NOSTUFF

RFFE USAGE TABLE

RFFE1 WTR3925
RFFE2 QFE3100
RFFE3 DIV MODULES
RFFE4 WTR4905
RFFE5 TUNERS + ELNAS
RFFE6 2G PA,MLB PA,MB/HB TDD PA,MB/HB FDD PA
RFFE7 LB PA, COUPLERS

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TRANSCEIVER: POWER

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TRANSCEIVER: TX PORTS

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TRANSCEIVER: PRX, DRX, & GPS PORTS

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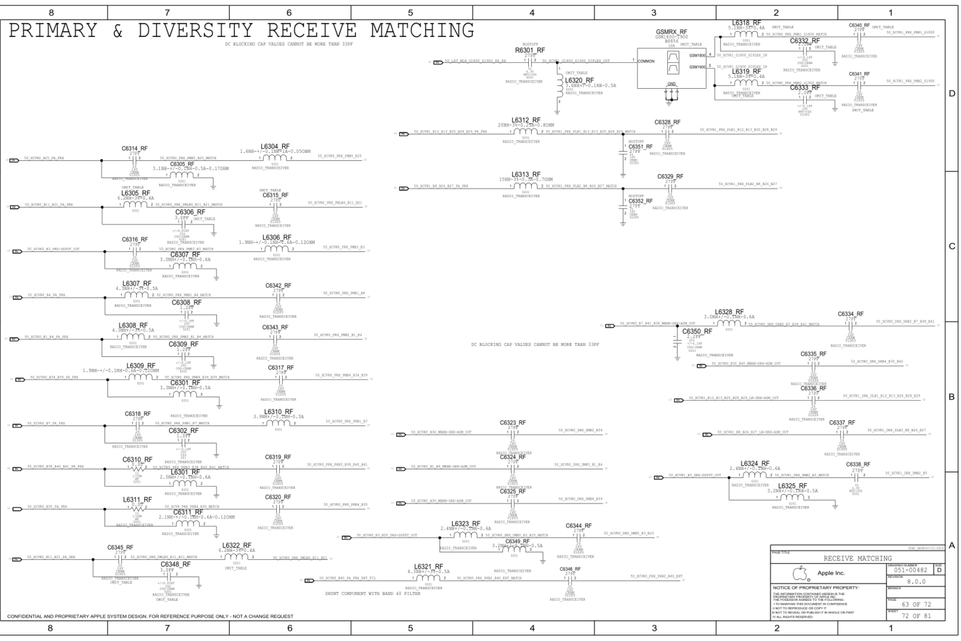
PRIMARY & DIVERSITY RECEIVE MATCHING



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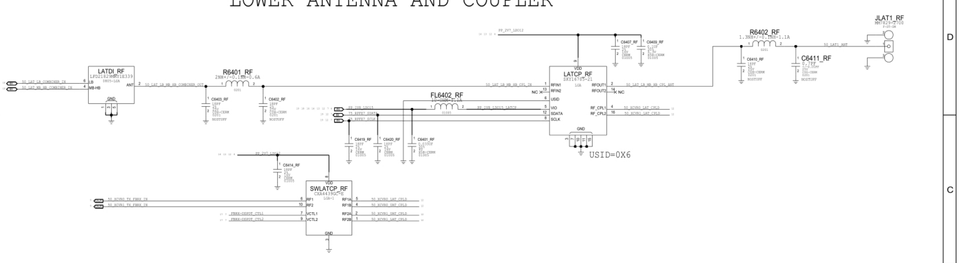
LOWER ANTENNA AND COUPLER



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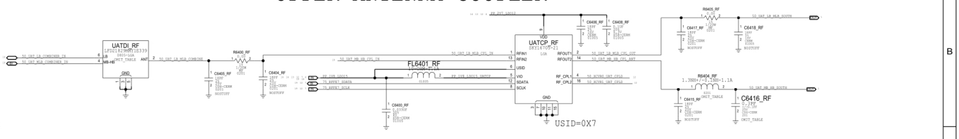

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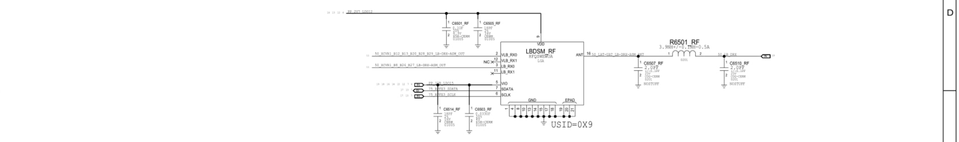
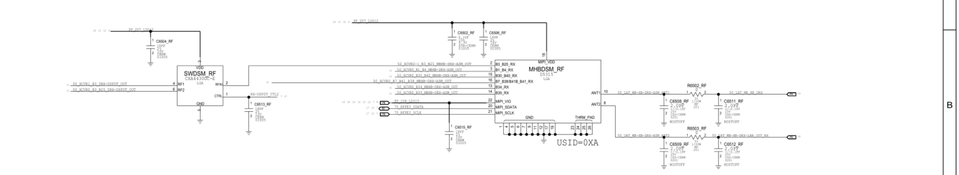
DIVERSITY RECEIVE

LB DRX ASM



MB HB DRX ASM



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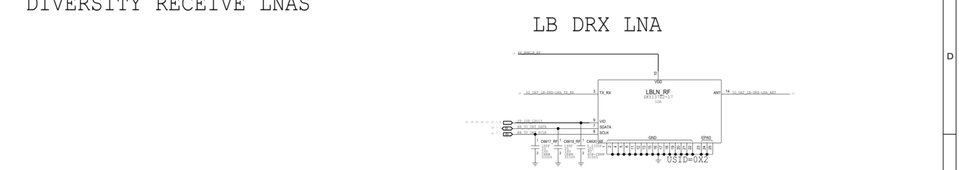
LB DRX LNA



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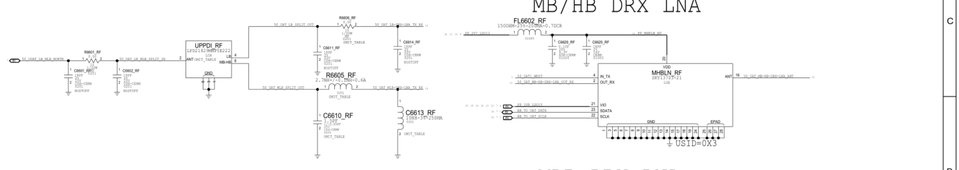

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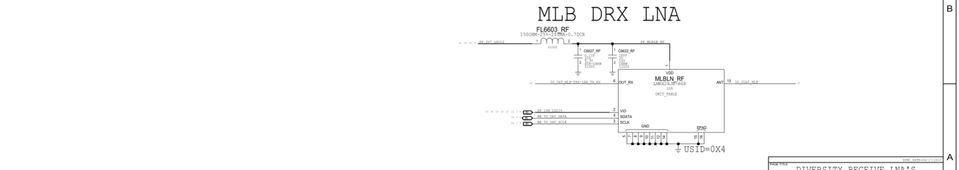

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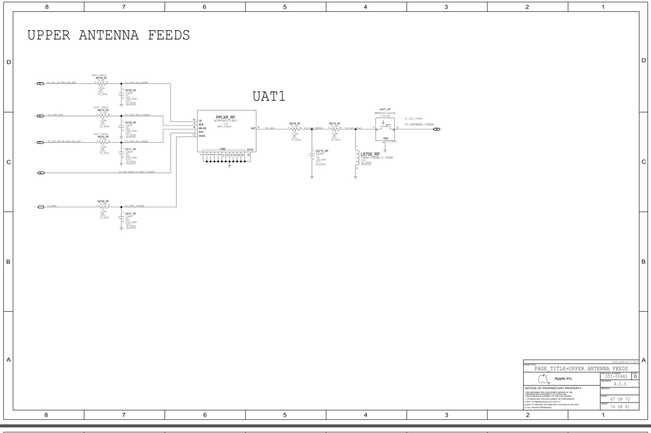
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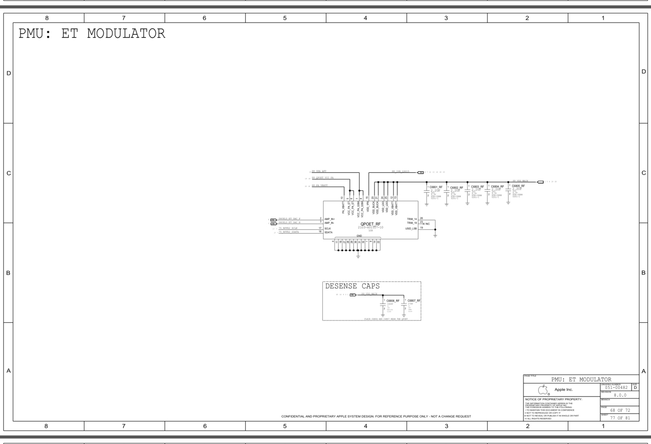
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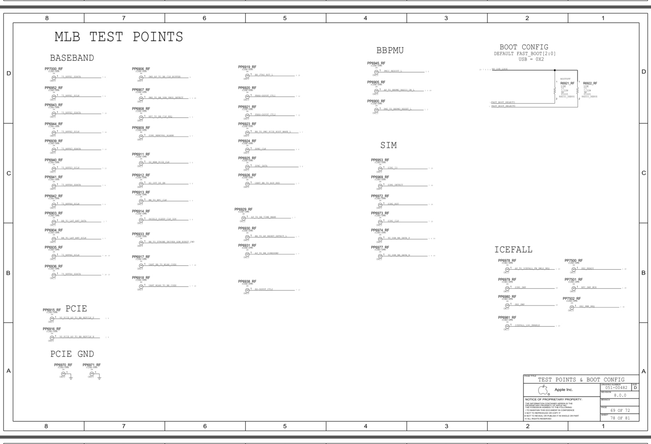
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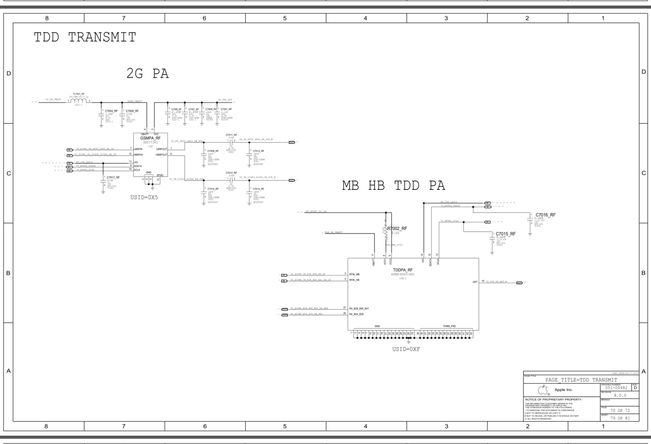
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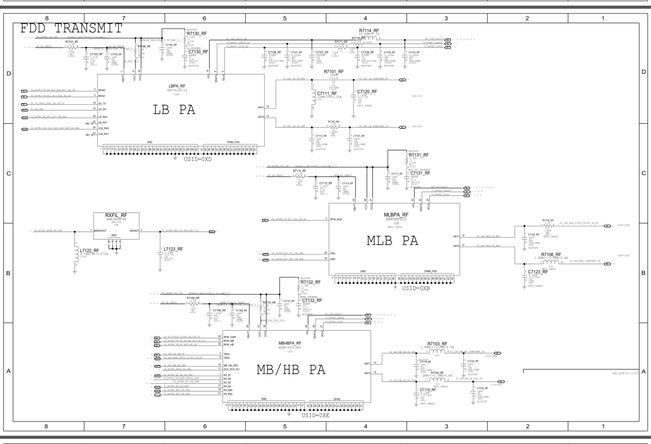
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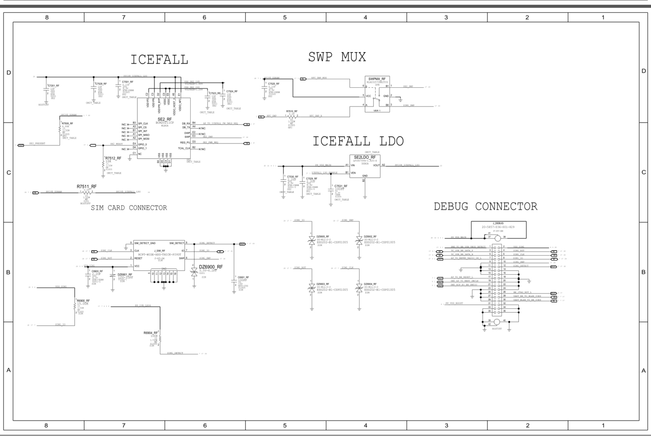
ICEFALL
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