

NOTES:

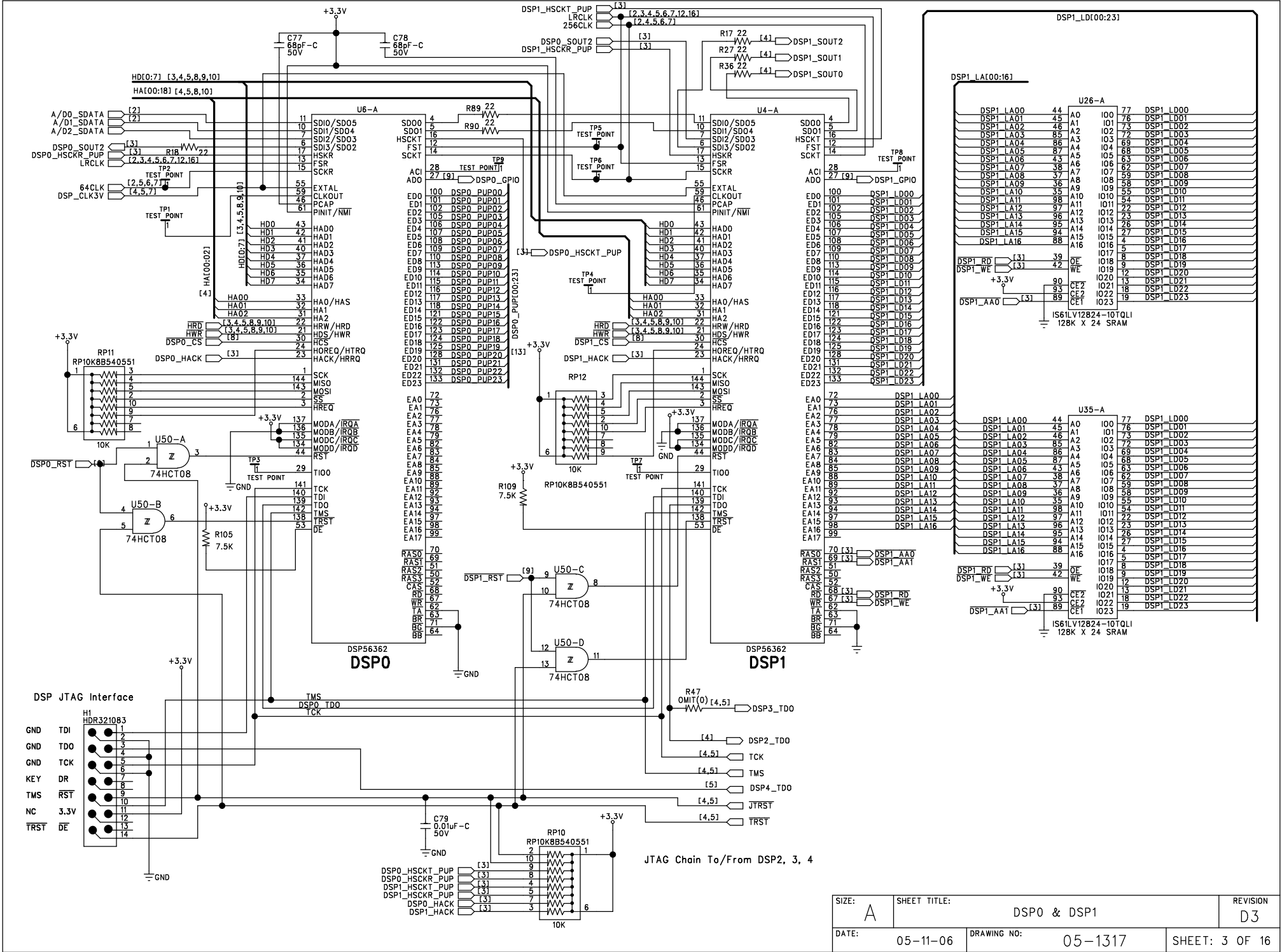
SHEET 1 TITLE PAGE AND REVISIONS	SHEET 2 CHANNEL A/D	SHEET 3 DSP 0 AND DSP 1 AND DSP1 MEMORY	SHEET 4 DSP 2 AND DSP 3
SHEET 5 DSP 4 AND DSP 4 MEMORY	SHEET 6 CHANNEL D/A	SHEET 7 SAMPLE AUDIO CLOCKS W/QUANTUM	SHEET 8 CPU
SHEET 9 CPU I/O	SHEET 10 SERIAL/MIDI/REMOTE COMMUNICATIONS	SHEET 11 INTERBOARD I/O HEADER CONNECTORS	SHEET 12 POWER SUPPLY
SHEET 13 +3.3V SUPPLY AND DECOUPLING	SHEET 14 +3.3V SUPPLY AND DECOUPLING	SHEET 15 +5V SUPPLY AND DECOUPLING	SHEET 16 48 VOLT AND ISOLATED SUPPLY

D3	CHANGE U44 FROM 74HC4040 TO 74VHC4040 (ROHS COMPLIANT)	31984	STM	5-11-06
D2	CHANGE U26 & U35 FROM 72-1488 TO 72-0209 (ROHS COMPLIANT)	31786	STM	4-11-06
D1	CHANGE T1 XFMR FROM 26-0249-A TO 26-0249-B (ROHS COMPLIANT)	31635	STM	3-14-06
D0	RELEASE TO PRODUCTION, ADD X-RAY FIDUCIALS, FIX PCB VIAS	30328	DWB	4-14-05
C0	RELEASE TO PRODUCTION, CHANGED MH10 PCB CLEARANCE	30295	DWB	3-31-05
B0	ADD SOLDER MASK TO VIAS ON SOLDER SIDE OF PCB	2282	BJK	10-24-02
A1	Changed U61 from 72-5525 to Omit and U25 from Omit to 72-5535	2157	MRC	09-03-02
A0	MFC LABEL ADDED, NO REV CHANGE.	2090	MTB	7-30-02
A0	Released to Production	XXXX	MRC	09/05/01
REV	DESCRIPTION	ECN #	INIT	DATE
REVISION HISTORY				
dbx Professional Products 8760 South Sandy Parkway Sandy Utah 84070				
TITLE: dbx 480 DRIVERACK DIGITAL BOARD				
DESIGNER: DAVID W. BYBEE		ENGINEER: JON DUFFIN		
SIZE: A	DRAWING NO: 05-1317			REVISION D3
DATE: 05-11-06	FILENAME: 051317D3.SCH		SHEET: 1 OF 16	

LBL1  
30-0121

PCB1  
80-1317

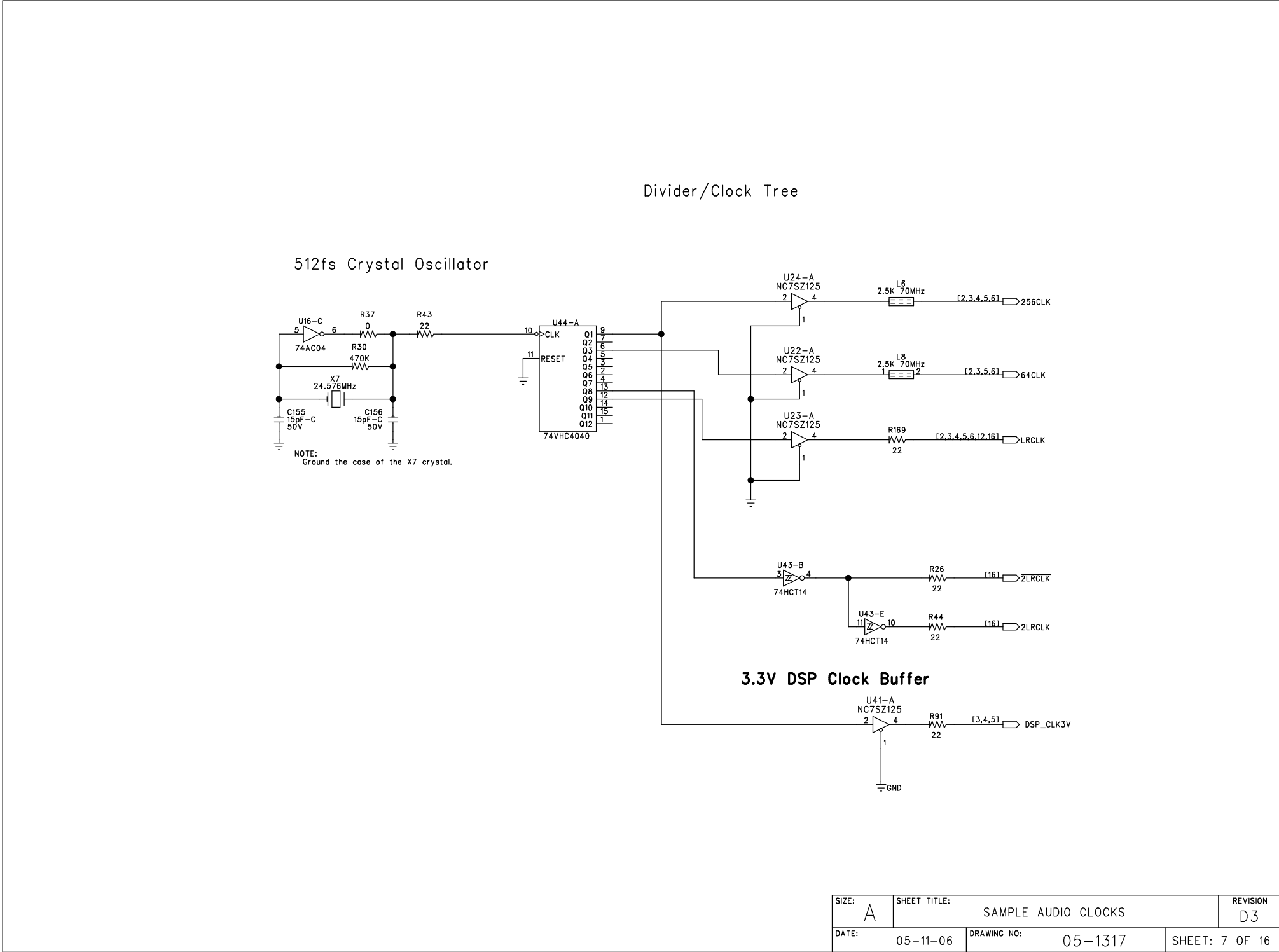


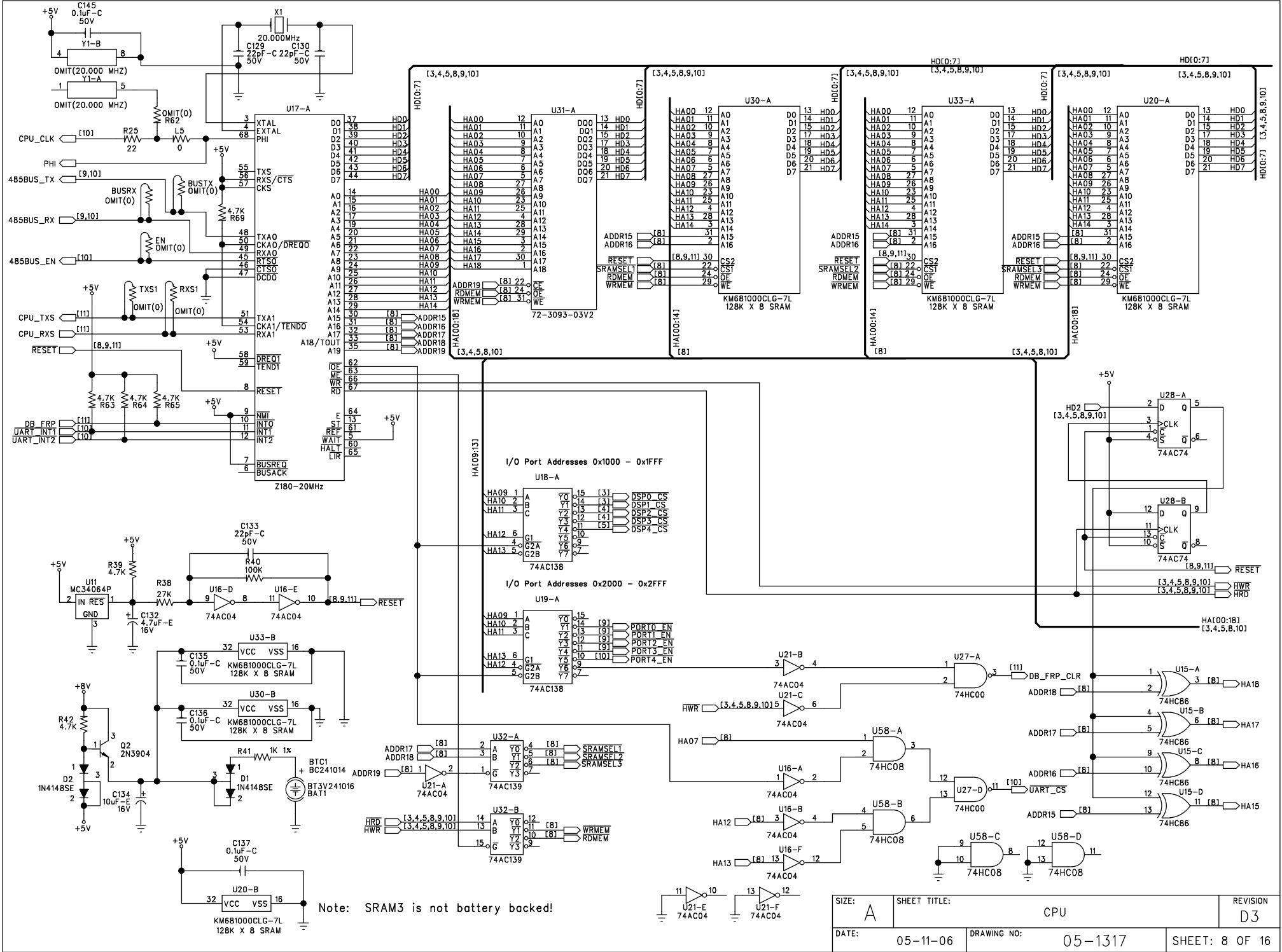




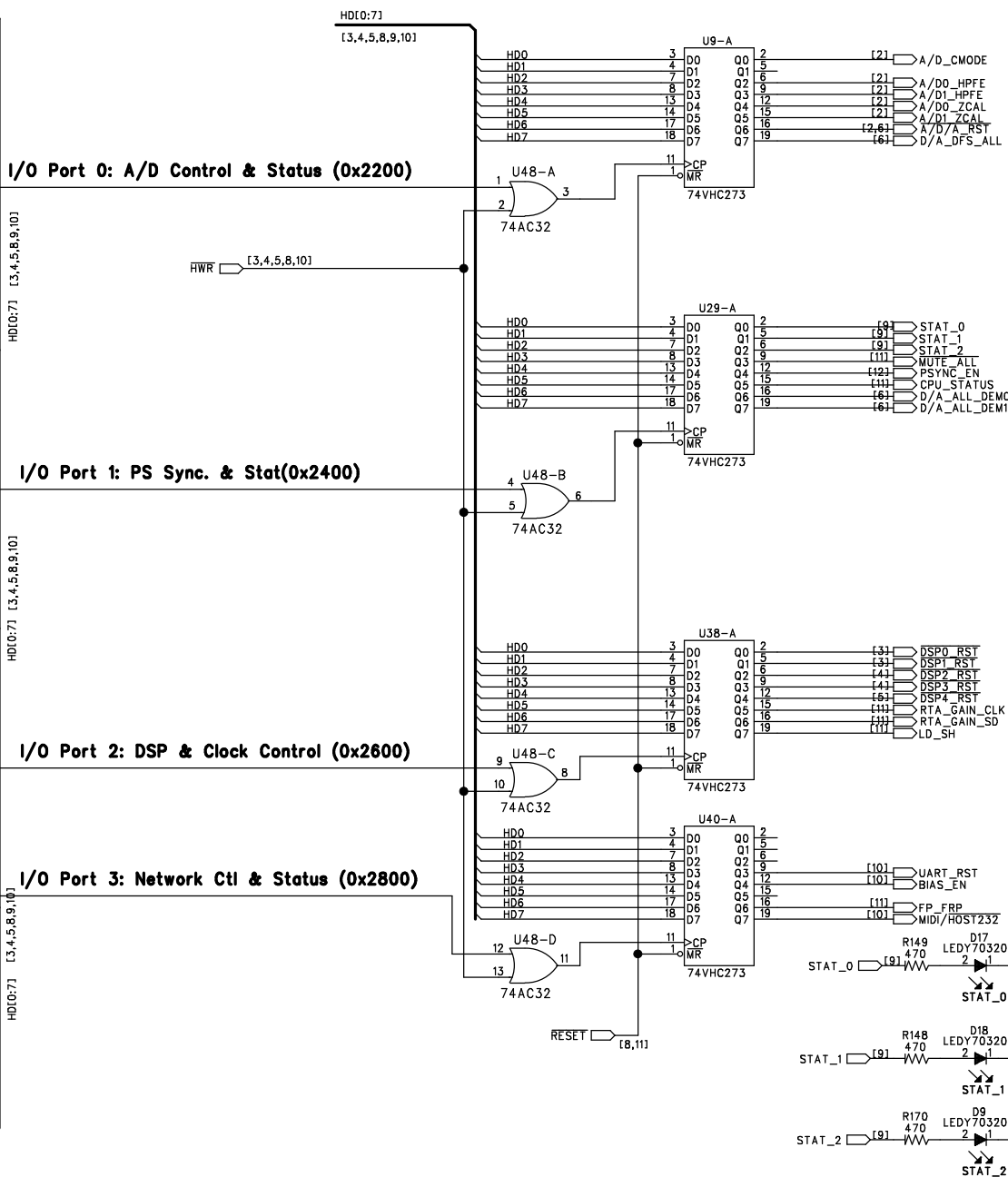






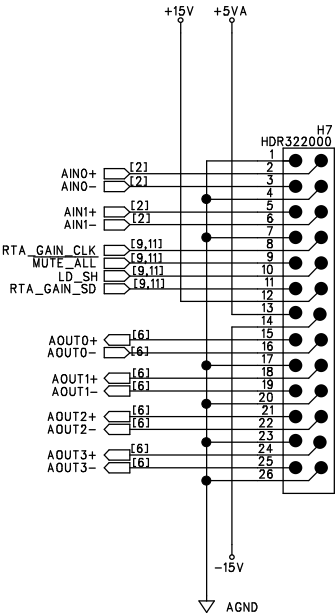


The circuit diagram illustrates the HD44780 interface for the TI MSP430F5529. It includes a 5V regulator section with resistors R99, R100, R126, R78, R97, and R98. The microcontroller's I/O pins are connected to the HD44780's data and control pins. Logic gates U46-A, U46-B, U46-C, and U46-D (74AC32) are used to combine control signals. Multiplexers U34-A, U34-B, U47-A, U47-B, U49-A, and U49-B (74HCT244) are used to route data signals. The HD44780 is shown with its data pins (HD0-HD7) and control pins (A0-A4, Y0-Y3).

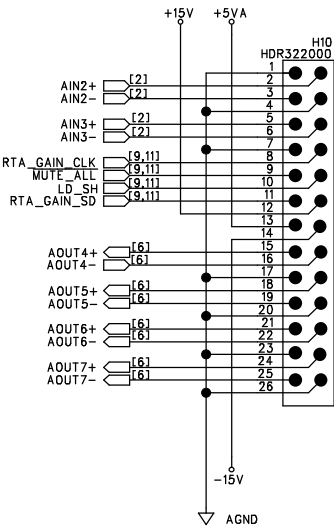




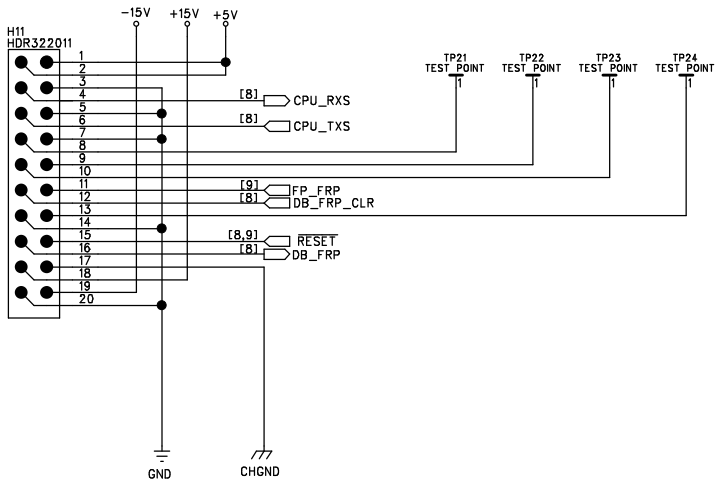
TO ANALOG TOP BOARD (INPUT 1, 2)



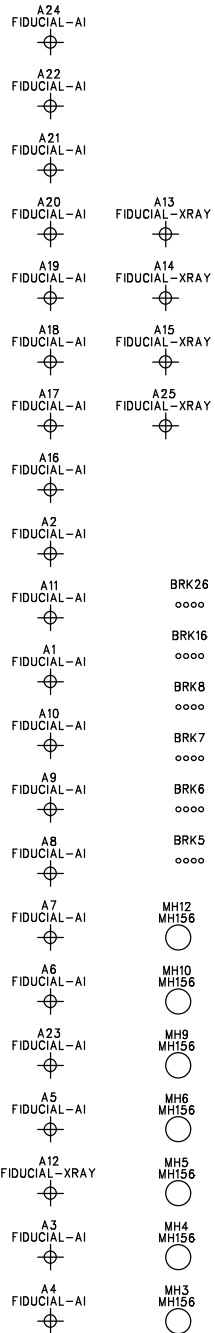
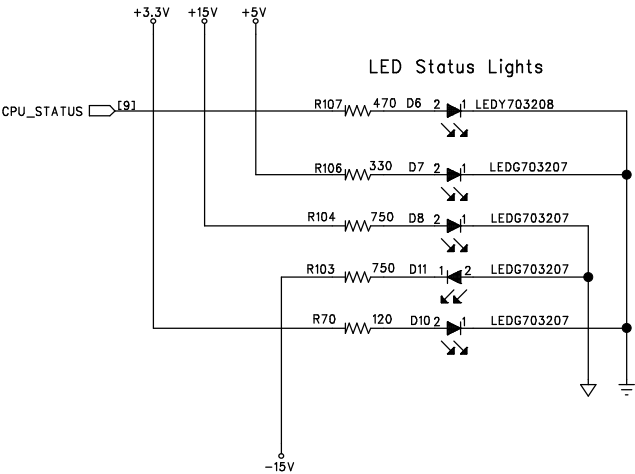
TO ANALOG BOTTOM BOARD (INPUT 3, 4)

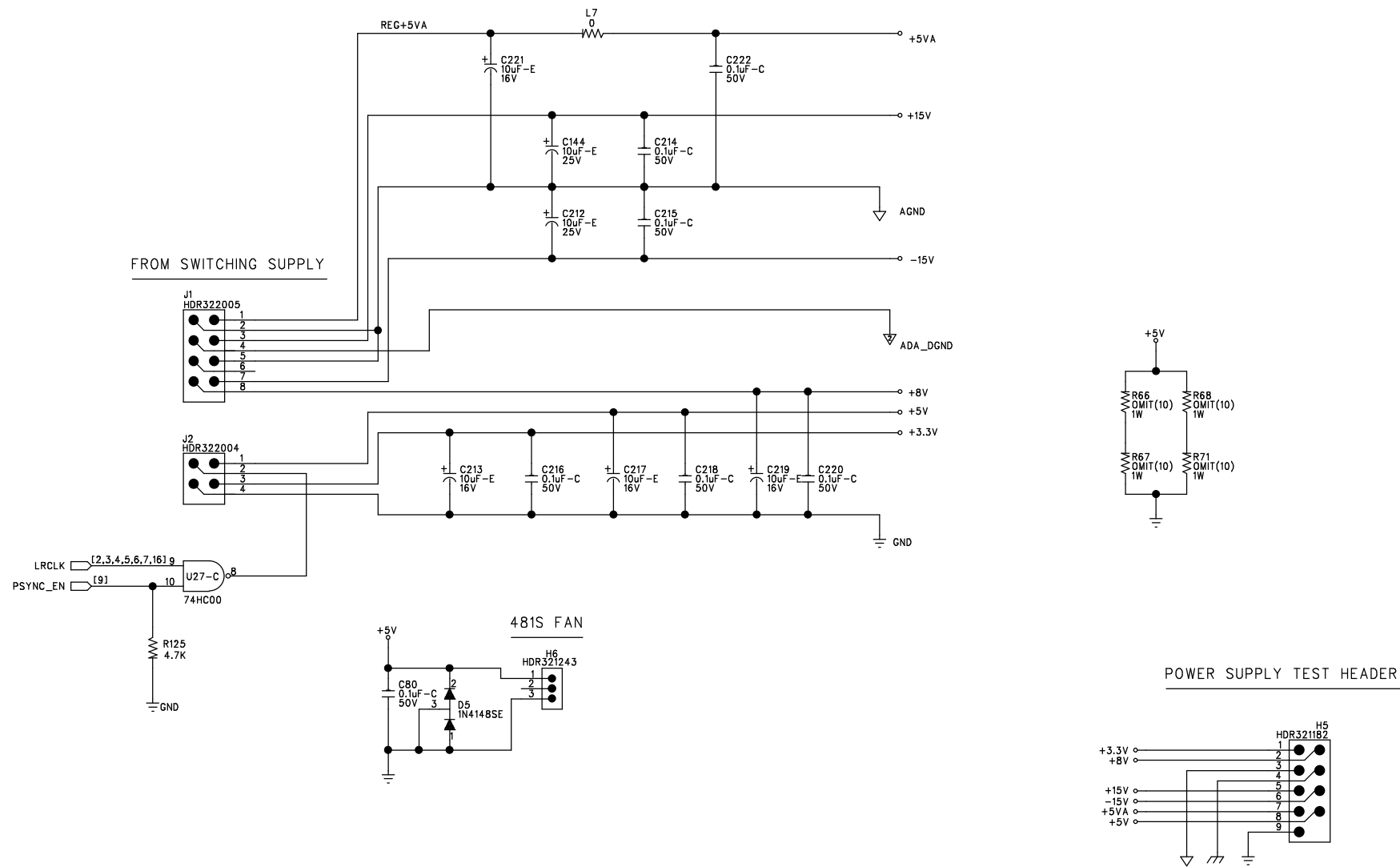


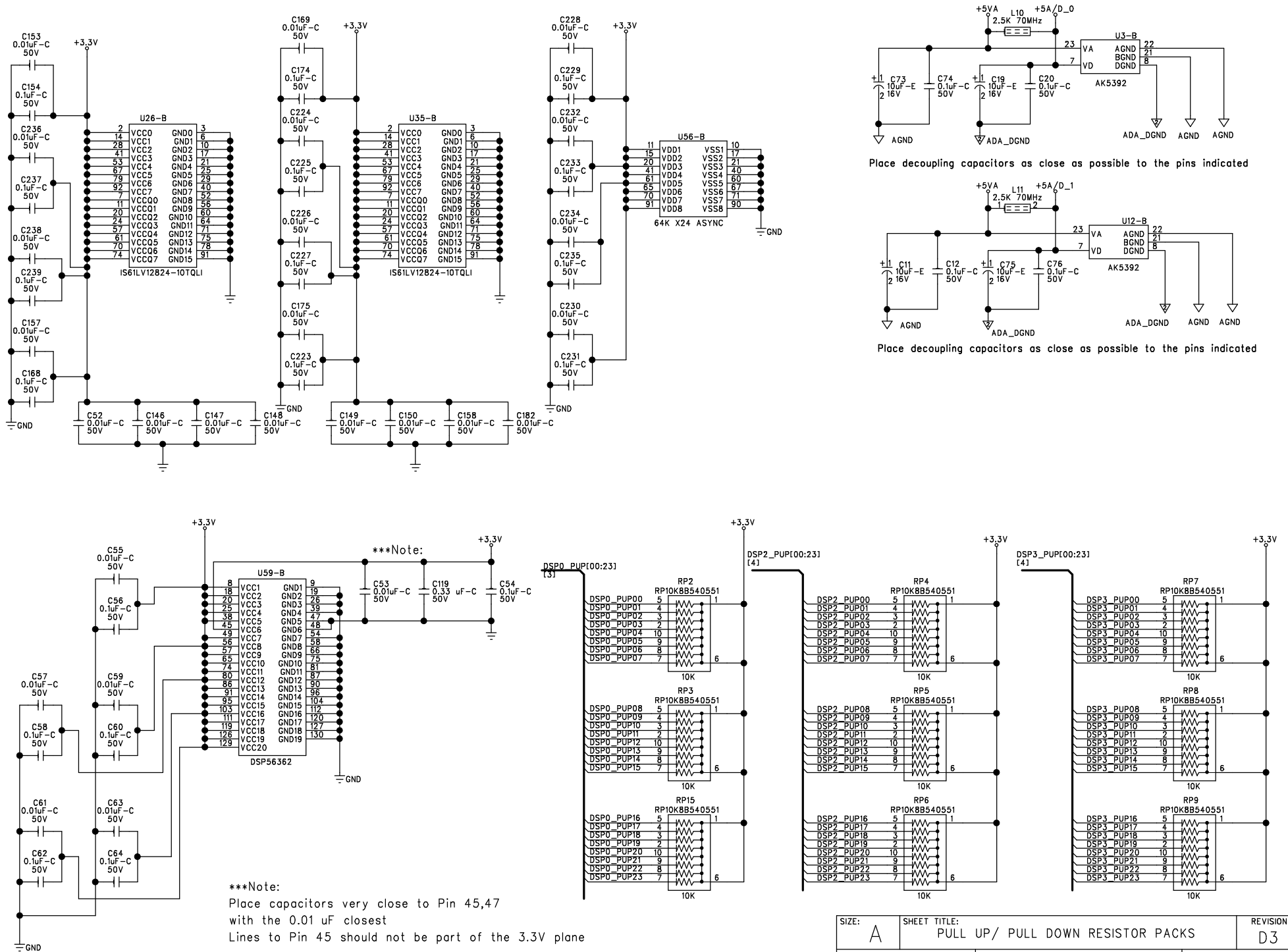
To/From 480 Front Panel

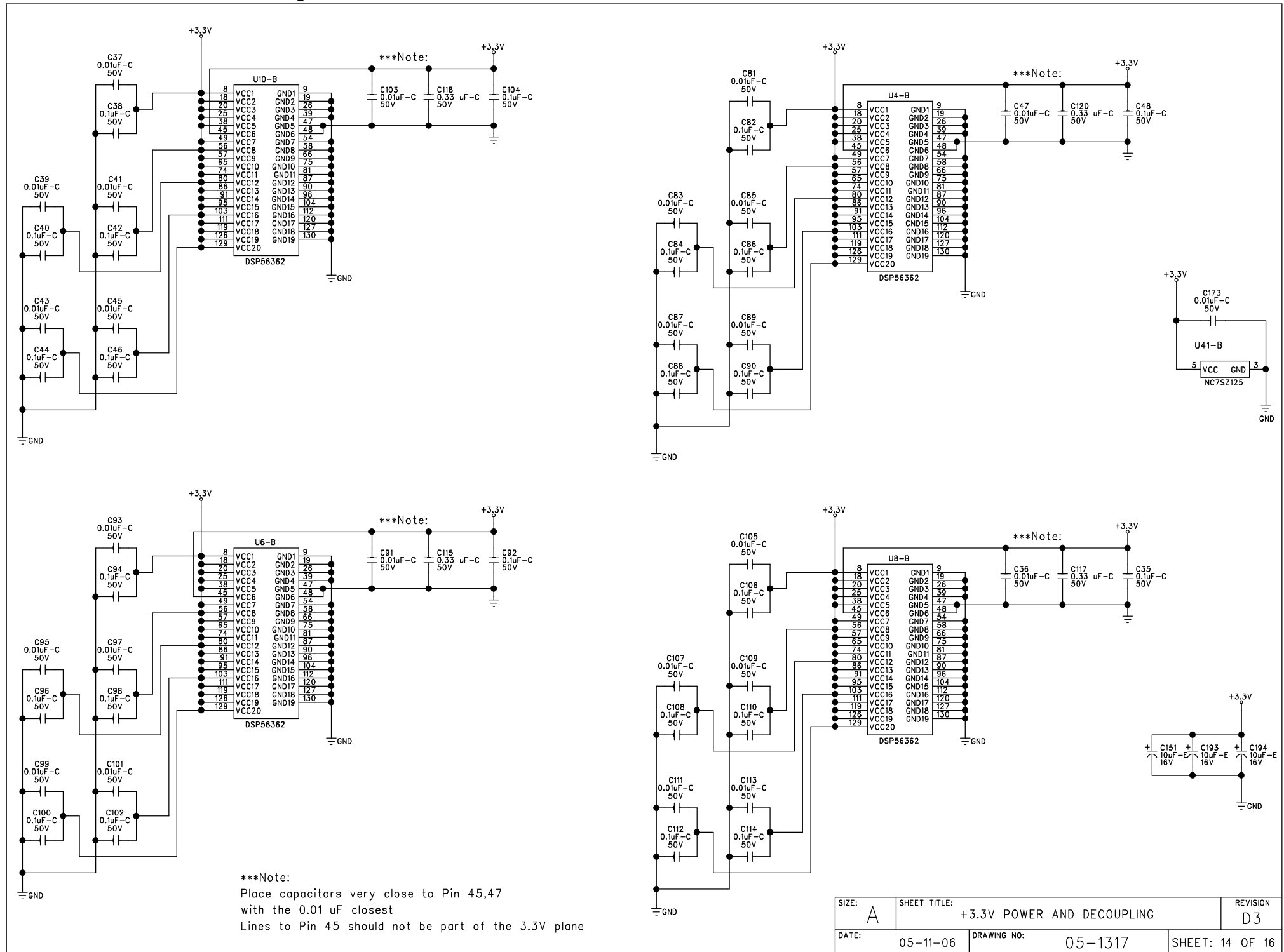


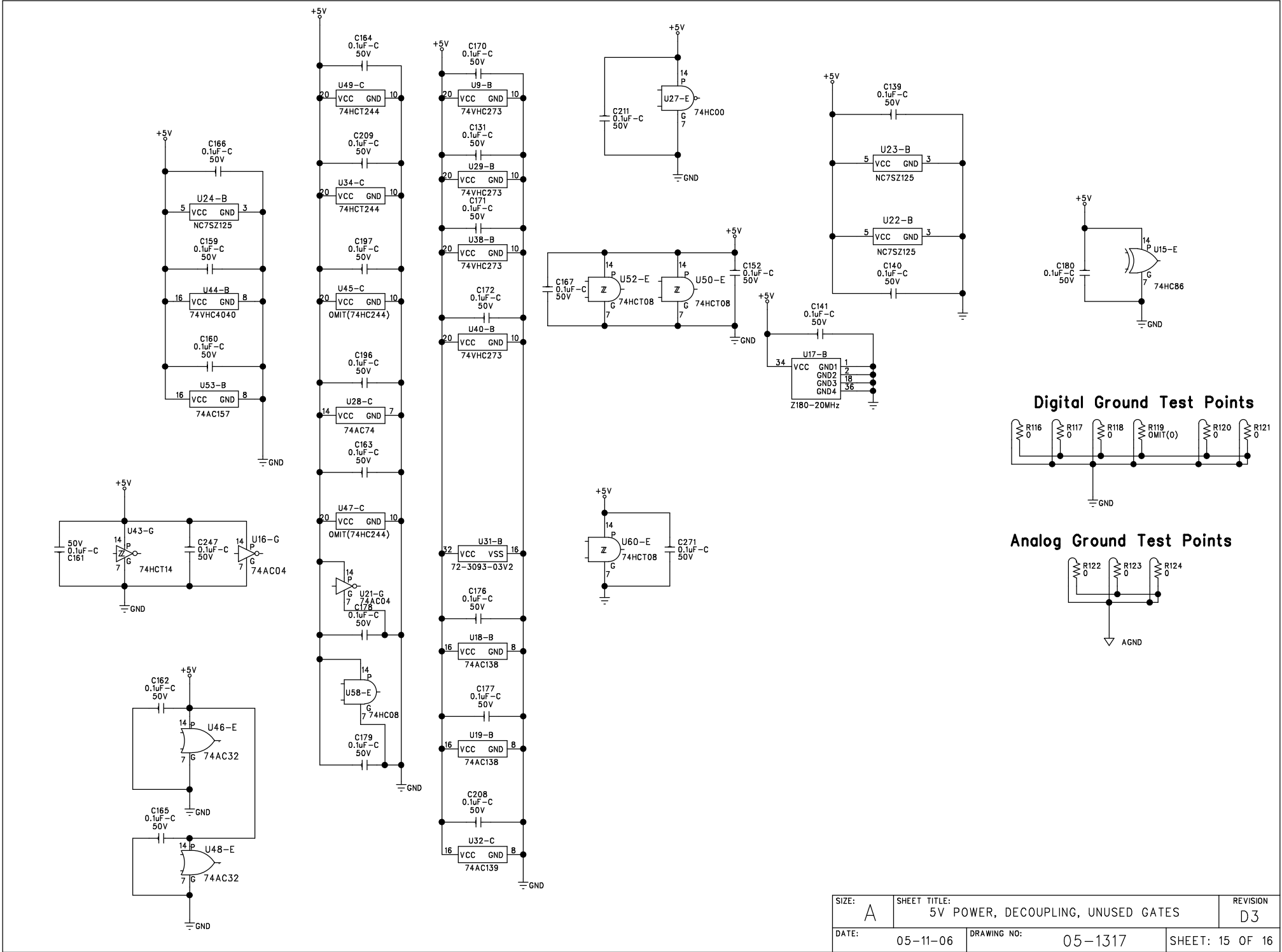
LED Status Lights

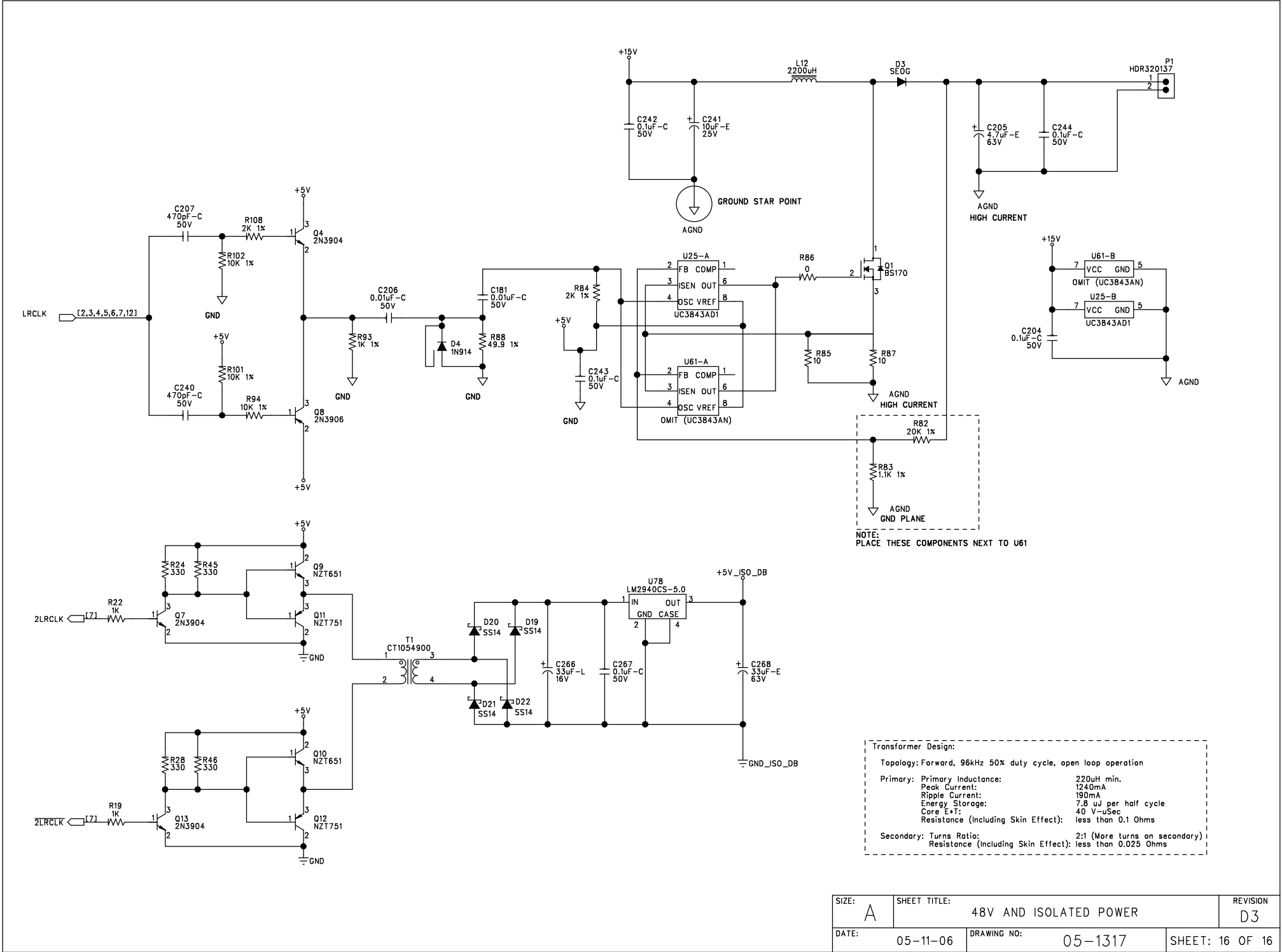












Bill Of Materials for 051317D3.sch on Thu May 11 13:10:13 2006

Qty	Reference	HMG#	Description	Audit	Schematic Part	PCB Decal
1	PCB1	80-1317	PCB 80-1317 dbx480, 481, 482, 442 DIGITAL BOARD	PT2044	80XXXXYY	BARCODE
1	BTC1	24-1014	BATTERY CLIP, 20mm DIA. X 3.2, HOLDS BUTTON STYLE BATTERIES, BULK	PT1328	BC241014	BCLIP1
6	BRK5-8 BRK16 BRK26	NON-PART	NON-PART, PCB ONLY, BREAKOFF PART	PT1481	BRKOFF	BRKOFF
1	BAT1	24-1016	BATTERY, 3V, LITHIUM, 20 X 3.2	PT1329	BT3V241016	BATTERY1
54	C36-37 C39 C41 C43 C45 C47 C52-53 C55 C57 C59 C61 C63 C79 C81 C83 C85 C87 C89 C91 C93 C95 C97 C99 C101 C103 C105 C107 C109 C111 C113 C146-150 C153 C157-158 C169 C173 C175 C181-182 C206 C224 C226 C228 C230 C232 C234 C236 C238	62-3142	CAP 0.01uF CER 50V 10% X7R 0805 TA	PT1118	C0.01UC50K0805	0805
117	C3-4 C6 C9-10 C12-16 C20-24 C29-30 C33-35 C38 C40 C42 C44 C46 C48 C50-51 C54 C56 C58 C60 C62 C64 C74 C76 C80 C82 C84 C86 C88 C90 C92 C94 C96 C98 C100 C102 C104 C106 C108 C110 C112 C114 C124 C126 C128 C131 C135-137 C139-141 C145 C152 C154 C159-168 C170-172 C174 C176-180 C196-197 C200-204 C208-209 C211 C214-216 C218 C220 C222-223 C225 C227 C229 C231 C233 C235 C237 C239 C242-244 C247 C267 C271	62-3139	CAP 0.1uF CER 50V 20% Y5V 0805 TA	PT1087	C0.1UC50M0805	0805
5	C115 C117-120	62-3210	CAP 0.33uF CER 50V 10% 1206 TA	PT1954	C0.33UC50K1206	1206
8	C67-68 C71-72 C255-256 C259-260	62-3136	CAP 1000pF CER 50V 20% X7R 0805 TA	PT1109	C1000PC50M0805	0805
1	C134	60-1063	CAP 10uF EL 16V 20% GP 4X5.5 SM TA	PT3218	C10UE16M4X5.5S	CAP4X5.4
27	C1-2 C5 C7-8 C11 C17-19 C25-28 C31-32 C73 C75 C123 C125 C127 C151 C193-194 C213 C217 C219 C221	60-0049-01	CAP 10uF EL 16V 20% GP 5x7R 5LS TA	PT1080	C10UE16MR	RED200P
3	C144 C212 C241	60-0403	CAP 10uF EL 25V 10% LL 5x11R 5LS TA	PT1208	C10UE25KR	REE200P
10	C65-66 C69-70 C155-156 C253-254 C257-258	62-3128	CAP 15pF CER 50V 5% COG 0805 TA	PT1106	C15PC50J0805	0805
3	C129-130 C133	62-3134	CAP, 22pF, CER, 50V, 5%, 0805, T&R	PT1107	C22PC50J0805	0805
1	C268	60-0324	CAP 33uF EL 63V 20% GP 6x11R 5LS TA	PT1436	C33UE63MR	REG200P
1	C266	60-0059-01	CAP 33uF EL 16V 20% LL 7x11R 5LS TA	PT1382	C33UL16MR	REG200P
1	C132	60-0048-01	CAP 4.7uF EL 16V 20% GP 5x7R 5LS TA	PT1294	C4.7UE16MR	REE200P
1	C205	60-0404	CAP 4.7uF EL 63V 20% LL 5x11R 5LS TA	PT1105	C4.7UE63MR	REE200P
2	C207 C240	62-3133	CAP 470pF CER 50V 10% X7R 0805 TA	PT1086	C470PC50K0805	0805
1	C138	60-0054-01	CAP 47uF EL 25V 20% GP 5x11R 5LS TA	PT2959	C47UE25MR1	REE200P

5	C49 C77-78 C142-143	62-3137	CAP, 68pF, CER, 50V, 5%, 0805, T&R	PT1285	C68PC50J0805	0805
3	D1-2 D5	70-0113	DIO, MMBD4148SE, DUAL DIODE, 75V, 600mA, SOT-23, T&R	PT1326	D1N4148SE-S	SOT-23
1	D4	70-0110	DIO, 1N914, HIGH-SPEED SWITCHING, SOT-23, T&R	PT1004	D1N914-S	SOT-23
1	D3	70-3601	RECTIFIER, 400V, 1.5 AMP, SMB, T&R	PT1466	DSEOG-S	DO-214AA/SMB
4	D19-22	70-0147	DIO SCHOTTKY 1A SS14 DO-214AC/SMA	PT1877	DS14S	DO-214AC/SMA
20	A1-11 A16-24	NON-PART	NON-PART FIDUCIAL TARGET FOR AUTO INSERTION	PT2904	FIDUCIAL-AI	FIDUCIAL-AI
5	A12-15 A25	NON-PART	NON-PART FIDUCIAL TARGET FOR XRAY	PT2905	FIDUCIAL-XRAY	FIDUCIAL-XRAY
1	P1	32-0137	HDR 2 PN 0.098 SPC 2X1 SHR VRT MT	PT1854	HDR320137	HC21V98SP
2	H3 H9	32-1055	HDR, 20 PIN, 0.1" SPC, 2 X 10, VERT, MALE	PT1340	HDR321055	HC102
1	H1	32-1083	HDR, 14 PIN, 0.1" SPC, 2 X 7, VERT, MALE	PT1074	HDR321083	HC72
1	H5	32-1182	HDR, 9 PIN, 0.1" SPC, 1 X 5, PIN 10 MISSING, VERT, MALE	PT1120	HDR321182	HDR321182
1	H6	32-1243	HDR 3 PIN .098 SPC 3X1 SHROUDED VERTICAL MT.	PT1876	HDR321243	HC31V98SP
2	H7 H10	32-2000	HDR, 26 PIN, 0.1" SPC, 2 X 13, VERT, MALE	PT1298	HDR322000	HC132
2	J2 J5	32-2004	HDR, 4 PIN, 0.118" SPC, 2 X 2, LKG, SHD, POL, VERT, MALE	PT1461	HDR322004	HC22118LSPM
1	J1	32-2005	HDR 8 PIN .118" SPC 2X4 LKG SHR POL VRT	PT1462	HDR322005	HC24118LSPM
1	H11	32-2011	HDR 20 PIN .1 SPC 2X10 DUAL SHD VRT MALE	PT1955	HDR322011	HC102
1	LBL1	30-0121	LABEL BARCODE AUTOINSERTABLE RAW	PT2790	LABEL300121	LABEL300121
4	D7-8 D10-11	70-3207	LED GREEN D1206 T&R	PT1902	LEDG703207	D1206
4	D6 D9 D17-18	70-3208	LED YELLOW D1206 T&R	PT1900	LEDY703208	D1206
4	L6 L8 L10-11	26-0217	IND, FERRITE BEAD, 2.5K OHM @ 70MHz, 0805, T&R	PT1261	LFB260217	0805
1	L12	26-0192	IND 2200uH 0.05A TA	PT1889	LI260192	RIM200
11	MH3-6 MH9-10 MH12	NON-PART	NON-PART MOUNTING HOLE 0.156" NON-PLATED #6	PT3000	MH156	MH156
	MH16-19					
1	MH1	NON-PART	NON-PART TOOLING PIN HOLE 156MIL HOLE	PT2794	MH156-TOOL	MH156-TOOL
1	MH2	NON-PART	NON-PART, TOOLING PIN HOLE, PLATED, 156MIL HOLE, 300MIL PAD	PT1417	MP300H156-TOOL	MP300H156-TOOL
5	JB1-5	NON-PART	NON-PART PAD ARRAY 3PIN .1 SPC .039 HOLE	PT2030	PA1X3-100-039	PA1X3-100-039
5	Q2-4 Q7 Q13	70-1058	XSTR, 2N3904, NPN, SOT-23, T&R	PT1203	Q2N3904-S	SOT-23
1	Q8	70-1059	XSTR 2N3906 PNP SOT-23 SM TA	PT1057	Q2N3906-S	SOT-23
1	Q1	70-1071	XSTR BS170 MFET N-CHANNEL TO92(DGS) AMMO	PT1885	QBS170	TO92(DGS)-V
2	Q9-10	70-3196	XSTR NZT651 NPN SOT223	PT1880	QNZT651-S	SOT223
2	Q11-12	70-3197	XSTR NZT751 PNP SOT223	PT1879	QNZT751-S	SOT223
14	L5 L7 R21 R23	50-1531	RES 0 5% 1/10W SM 0805 TA	PT1099	R0-C5-0805	0805
	R31-32 R37 R78 R86					
	R97 R112-115					
5	R33-34 R47 R62 R98	OMIT	OMIT RES 0 5% 1/10W SM 0805 TA (50-1531)	PT1006	R0-C5-08050	0805
8	R116-118 R120-124	50-0317	RES 0 5% 1/4W CF RR TA	PT1008	R0-E5-R	RRA200
6	BTC1 BTC1 D22 R119	OMIT	OMIT RES 0 5% 1/4W CF RR TA (50-0317)	PT1596	R0-E5-RO	RRA200
	RXS1 TXS1					
17	R1-16 R83	52-3248	RES 1.1K 1% 1/10W SM 0805 TA	PT1700	R1.1KC1-0805	0805
1	R40	50-1504	RES 100K 5% 1/10W SM 0805 TA	PT1096	R100KC5-0805	0805
2	R85 R87	50-1500	RES 10 5% 1/10W SM 0805 TA	PT1309	R10-C5-0805	0805
4	R66-68 R71	OMIT	OMIT RES 10 5% 1W SM 2512 TA (50-0057)	PT2679	R10-G5-25120	2512
3	R94 R101-102	52-4500	RES 10K 1% 1/10W SM 0805 TA	PT1034	R10KC1-0805	0805
1	R70	50-1534	RES 120 5% 1/10W SM 0805 TA	PT1367	R120-C5-0805	0805
2	R41 R93	52-4505	RES 1K 1% 1/10W SM 0805 TA	PT1037	R1KC1-0805	0805
2	R19 R22	50-1505	RES 1K 5% 1/10W SM 0805 TA	PT1010	R1KC5-0805	0805
1	R171	50-1529	RES 2.2K 5% 1/10W SM 0805 TA	PT1127	R2.2KC5-0805	0805
1	R82	52-4501	RES 20K 1% 1/10W SM 0805 TA	PT1035	R20KC1-0805	0805
23	R17-18 R20 R25-27	50-1532	RES 22 5% 1/10W SM 0805 TA	PT1030	R22-C5-0805	0805
	R29 R36 R43-44					
	R89-92 R95-96					
	R128-131 R135-136					
	R169					
1	R38	50-1527	RES 27K 5% 1/10W SM 0805 TA	PT1027	R27KC5-0805	0805
2	R84 R108	52-4506	RES 2K 1% 1/10W SM 0805 TA	PT1038	R2KC1-0805	0805
5	R24 R28 R45-46 R106	50-1517	RES 330 5% 1/10W SM 0805 TA	PT1020	R330-C5-0805	0805
7	R39 R42 R63-65 R69	50-1509	RES 4.7K 5% 1/10W SM 0805 TA	PT1012	R4.7KC5-0805	0805
	R125					
4	R107 R148-149 R170	50-1518	RES 470 5% 1/10W SM 0805 TA	PT1021	R470-C5-0805	0805
1	R30	50-1523	RES 470K 5% 1/10W SM 0805 TA	PT1025	R470KC5-0805	0805
1	R88	52-4502	RES 49.9 1% 1/10W SM 0805 TA	PT1036	R49.9-C1-0805	0805
12	R50-61	52-4504	RES 499 1% 1/10W SM 0805 TA	PT1102	R499-C1-0805	0805
1	R146	52-4514	RES 57.6K 1% 1/10W SM 0805 TA	PT1042	R57.6KC1-0805	0805

051317D3.pps					
17	R35 R72-77 R79-81 R99-100 R105 R109-111 R126	50-1521	RES 7.5K 5% 1/10W SM 0805 TA	PT1024 R7.5KC5-0805	0805
2	R48-49	OMIT	OMIT RES 7.5K 5% 1/10W SM 0805 TA (50-1521)	PT1338 R7.5KC5-08050	0805
2	R103-104	50-1530	RES 750 5% 1/10W SM 0805 TA	PT1029 R750-C5-0805	0805
15	RP1-15	54-0551	RESNET 10K 5% 62.5mW BUS(1,6) 8E SM TA	PT1509 RP10K8B540551	RP1608
24	TP1-24	NON-PART	NON-PART, TEST POINT, ENGINEERING PROBE POINT	PT1653 TESTPOINT	TESTPOINTSM
1	T1	26-0249	XFMR TOROID 5V/5V 100kHz 3VA SM	PT3283 TR260249	XFR-3
2	U26 U35	72-0209	IC 128K x 24 STATIC RAM 10ns 3.3V QFP100-14X20	DB406 U128K24S10-3.3-Q	QFP100-14X20
3	U20 U30 U33	72-5417	IC, 128K X 8, STATIC RAM, 70ns, SOP32	PT1333 U128K8S70-P	SOP32
1	U56	72-1442	IC, SRAM, 64K x 24 ASYNCHRONOUS, 12ns, +3.3V, CMOS, TQFP100	PT1494 U64K24S12-Q	QFP100-14X20
2	U16 U21	72-5426	IC, 74AC04, HEX INVERTER, SO14, T&R	PT1325 U74AC04-S	SO14
2	U18-19	72-1452	IC, 74AC138, 1-OF-8 DECODER/DEMULTIPLEXER, SO16	PT1420 U74AC138-S	SO16
1	U32	72-1483	IC, 74AC139, DUAL 2 TO 4 LINE DECODER, SO16, T&R	PT1174 U74AC139-S	SO16
1	U53	72-5423	IC, 74AC157, QUAD 2-INPUT MULTIPLEXER, SO16	PT1246 U74AC157-S	SO16
2	U46 U48	72-5435	IC 74AC32 QUAD 2-INPUT POS-OR SO14	PT1868 U74AC32-S	SO14
1	U28	72-5425	IC, 74AC74, DUAL FLIP-FLOP, D-TYPE, SMT SO14	PT1247 U74AC74-S	SO14
1	U27	72-5418	IC, 74HC00, QUAD 2-INPUT NAND, SO14, T&R	PT1348 U74HC00-S	SO14
1	U58	72-1441	IC, 74HC08, QUAD 2-INPUT POS-AND, SO14	PT1421 U74HC08-S	SO14
2	U45 U47	OMIT	OMIT, IC, 74HC244, OCT BUF LNE DVR, 3-STATE OUT, SO20W, T&R, (72-1111 )	PT1573 U74HC244-SO	SO20W
1	U15	72-1404	IC, 74HC86, QUAD 2 - INPUT EXCLUSIVE OR, SO14	PT1491 U74HC86-S	SO14
3	U50 U52 U60	72-1268	IC 74HCT08 QUAD 2-INPUTAND SMITT SO14	PT2418 U74HCT08-S	SO14
1	U43	72-1401	IC, 74HCT14, HEX SCHMITT TRIGGER INVERTER, SO14	PT1356 U74HCT14-S	SO14
2	U34 U49	72-1487	IC 74HCT244 OCTAL BUFFER W/3-STATE SMITT SO20W TA	PT2417 U74HCT244-S	SO20W
4	U9 U29 U38 U40	72-5437	IC 74VHC273 FLIP-FLOP OCTAL-D SO20W T&R	PT1909 U74VHC273-S	SO20W
1	U44	72-0044	IC 74VHC4040 12 BIT RIPPLE COUNTER SO16	PT2759 U74VHC4040-S	SO16
4	U1-2 U13-14	72-1484	IC, AK4393, DAC, 24 BIT, 96 KHz, 115dB DR, VSOP28	PT1504 UAK4393-V	VSOP28
2	U3 U12	72-1464	IC, AK5392, DUAL 24BIT ADC, SO28W	PT1555 UAK5392-S	SO28W
5	U4 U6 U8 U10 U59	72-1466	IC, DSP56362, DSP PROCESSOR, QFP144-20X20	PT1316 UDSP56362-Q	QFP144-20X20
1	U78	70-4144	V-REG LM2940CS-5.0 5V 1A TO-263	PT1878 ULM2940CS-5-S	TO-263
1	U11	70-5004	IC, MC34064, UNDERVOLTAGE SENSING CIRCUIT, TO-226AA	PT1110 UMC34064P	TO226AA(RIG)-V
4	U22-24 U41	72-5434	IC NC7SZ125 TINYLOGIC BUFFER SOT23-5 TA	PT1881 UNC7SZ125-S	SOT23-5
1	U31	72-3093-03V2	IC AT49F040-70JC 4 MEG FLASH EEPROM DRIVERACK 480 V2	PT1764 UP723093	PLCC/R-32
1	U51	72-5518	IC PC16552D DUAL UART PLCC-44	PT1882 UPC16552D-L	PLCC-44
1	U25	72-5535	IC UC3843AD1 CURRENT MODE CNTLR SO8	PT1993 UUC3843AD1-S	SO8
1	U61	OMIT	OMIT IC UC3843AN CURRENT MODE CNTLR DIP8-300 (72-5525)	PT2831 UUC3843AN-D-O	DIP8-300
1	U17	72-4161	IC, CPU, Z180 MICROPROCESSOR, 20MHz, PLCC-68	PT1474 UZ180-20MHZ-L	PLCC-68
1	Y1	OMIT	OMIT OSC 20.000 MHZ DIP8 (00-0005)	PT1827 Y20.000M000005-O	OSC4300300
1	X1	76-0321	XTAL, 20.000MHz, METAL CAN, STANDARD PACKAGE	PT1431 Y20.000M700321	XTALV
1	X7	76-0315	XTAL, 24.576MHz, 18pF, LOW PROFILE, HC-49, T&R	PT1478 Y24.576M760315	XTALV