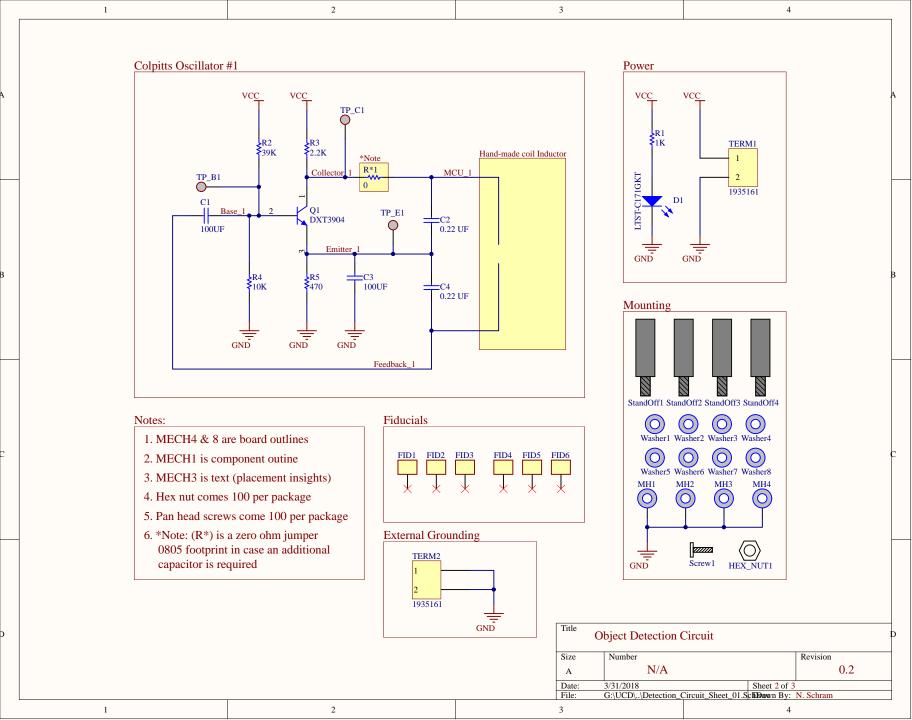
Revision History/ Project Log

REV	COMMENTS	DATE	INITIALS
0.1	First pass of the schematic has been completed. Placement of the components has been completed. All passive component footprints are 0805(M). Top pour is GND, bottom pour is VCC.	2018-JAN-27	NAS
0.1	Still need to complete the MCU subsection and connections back to the PC.	2018-JAN-28	NAS
0.1	Schematic finished, PCB layout & routing finished. All components selected. Generating all outputs, including BOM and gettings quotes started for FAB.	2018-FEB-03	NAS
0.2	Corrected the silk string placement of MCU and INDUCTOR. Inside Sandbox Dimensions: 37" x 26 3/4"	2018-MAR-26	NAS
0.2	Design copied x12 for the base of the sandbox. Increased the size of the euro terminals and changed the 1uF caps to 0.22uF.	2018-MAR-26	NAS
0.2	Changed and verified all hardware is rated for 50V.	2018-MAR-26	NAS
0.2	Capacitor changes for higher voltage rating. Additional 12 position terminal added for connection to the MCU.	2018-MAR-29	NAS
0.2	Finished the cluster placement. Need to make a final decision about the size of the euro terminals.	2018-MAR-30	NAS
0.2	Placement and routing complete. Finishing the silkscreen. Will get off for quoting this evening. Will get fabrication started and will do manual assembly.	2018-MAR-31	NAS

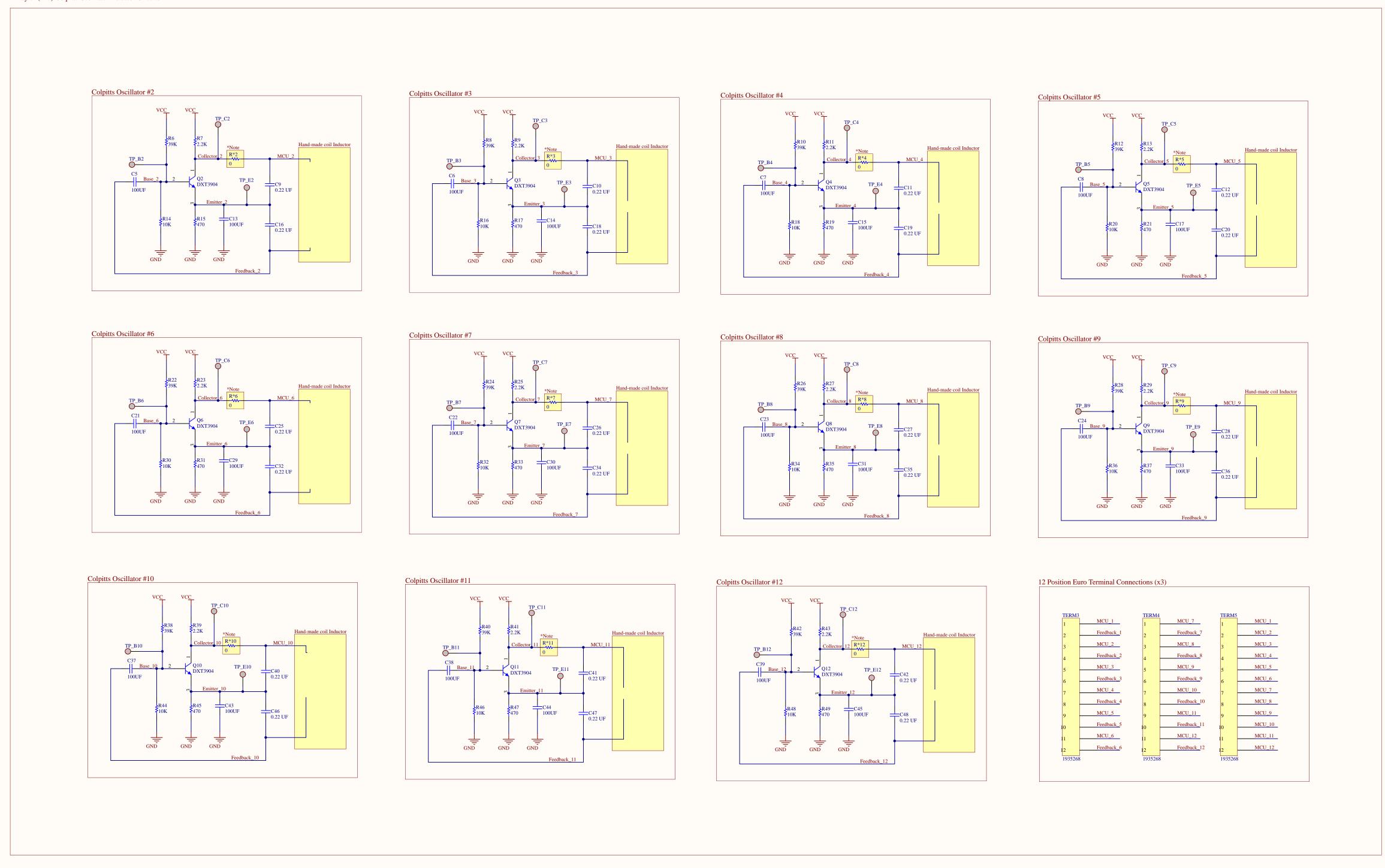
Schematic Documents

PAGE	PAGE NAME		
01	Detection_Circuit_History		
02	Detection_Circuit_Sheet_01		

2 3 4 5



Array of (x12) Colpitts Oscillator Detector Circuits



Object Detection Circuit

Size Number D N/A Revision 0.2

Date: 3/31/2018 Sheet 3 of 3

File: G/UCD/ Detection Circuit Sheet (2.5c) Million By: N. Schram

2 5 7

CAP CER 100UF CAP CER 100UF CAP CER 100UF CAP CER 0.2016 CAP CER 0.2016 CAP CER 0.22UF CAP CAR CAP	Comment	Description	Designator	Footprint	LibRef	Quantity
CAP CER 190UF			C17, C21, C22, C23, C24, C29,			
C11, C12, C16, C19, C20, C25, C26, C27, C28, C32, C34, C35, C36, C40, C35, C36, C40, C41, C42, C46, C41, C42, C46, C47, C48	100UF		C37, C38, C39,	C1210_M		24
Cart			C11, C12, C16, C18, C19, C20, C25, C26, C27, C28, C32, C34, C35, C36, C40,			
TEST-C171GKT	08055C224JAT2A	50V X7R 0805		6-0805_N	08055C224JAT2A	24
Fiducial	LTST-C171GKT			6-0805_M	LED3	1
6-32 Hex Nut STELL 6-32 HEX NUT 1 #6 MH #6 Mounting Hole	Fiducial			Fiducial	Fiducial	6
#6 MH #6 Mounting Hole MH4 #6_MH MH	6-32 Hex Nut				HEX_NUT	1
DXT3904 O.2A SOT89-3 O.5 O.6, O.7, O.8, O.2A SOT89-3 O.2A SOT89-3 O.2A SOT89-3 O.2 O.10, O.11, O.12 DXT3904-13 DXT3904-13 12	#6 MH	#6 Mounting Hole		#6_MH	МН	4
1K	DXT3904	0.2A SOT89-3	Q5, Q6, Q7, Q8,	DXT3904-13	DXT3904-13	12
RES SMD 39K 0840 0895 R840, R82 R85, R87, R9, R11, R85 SMD 2.2K 0805 R81, R83, R23, R25, 0805 R81, R83 R80, R82, R83, R83, R83, R83, R84, R84, R84, R84, R85 SMD 10K 0805 R84, R84, R86, R84, R80, R80, R82, R85, R87, R8, R81, R80, R80, R82, R80, R80, R82, R80, R80, R82, R80, R80, R82, R80, R80, R80, R80, R80, R82, R80, R80, R84, R80, R80, R80, R80, R80, R81, R82, R84, R84, R86, R84, R86, R84, R86, R84, R87, R87, R81, R85, R87, R81, R86, R84, R87, R87, R81, R87, R8	1K		R1	6-0805_M	RNCP0805FTD1K00	1
39K 0805 R40, R42 6-0805_M ERJ-P8603902V 12 RES SMD 2.2K 0HM 0.5% 1/4W 0805 R41, R43 6-0805_M ERJ-P86D2201V 12 RES SMD 10K 0805 R41, R43 6-0805_M ERJ-P86D2201V 12 RES SMD 10K 0805 R41, R43 6-0805_M ERJ-P86D2201V 12 RES SMD 470 0805 R41, R43, R43, R44, R46, R48 6-0805_M RNCP0805FTD10K0 12 RES SMD 470 0805 R41, R33, R33, R35, R45, R47, R49 R10, R71, R72, R73, R74, R45, R47, R49 R710, R711, R72, R73, R74, R79, R710, R711, R72, R73, R74, R79, R710, R711, R72, R73, R74, R79, R710, R711, R72, R73, R74, R74, R74			R12, R22, R24,			
RES SMD 2.2K OHM 0.5% 1/4W 0805 R4, R14, R16, R18, RES SMD 10K 0805 R4, R14, R43 R6, R84, R6, R84 R6, R84 R6, R84 R6, R84 R6, R85, R15, R17, R19, R85 SMD 470 R85, R15, R17, R19, R85 SMD 470 R85, R15, R17, R19, R85 SMD 470 R85, R15, R17, R19, R85 SMD 0 OHM JUMPER 1/8W R71, R2, R3, R3, R72, R41 R85 SMD 0 OHM JUMPER 1/8W R71, R2, R3, R3, R72, R41 R85 SMD 0 OHM JUMPER 1/8W R71, R2, R3, R4, R72, R73, R4, R73, R74 R71, R72, R73, R4, R73, R74 R71, R72, R73, R4, R74, R79 R71, R71, R75, R76, R77, R78, R79, R710, R711, R710 R710 R711, R711, R710 R711, R710 R711,	39K		R40, R42	6-0805_M	ERJ-PB6D3902V	12
RES SMD 10K R20, R30, R32, OHM 11/4/W R34, R36, R44, R46 R48 R46, R48 R46, R48 R46, R48 R45, R46, R48 R470 OHM 0.5% 1/4W R35, R15, R17, R19, R21, R31, R33, R37, R45, R37, R45, R47, R49 R470 O805 R47, R49 G-0805_M ERJ-PB6D4700V 12 R32 Pan Head MACHINE SCREW PAN PHILLIPS 6-32 Screw PAN PHILLIPS 6-32 Screw PAN PHILLIPS 6-32 ALUMINUM StandOff1, StandOff2, StandOff3 GREN TERM BLOCK PCB 12POS 5.0MM GREN TERM 1.78 R2, R3, R3, R37, R35, R37	2.2K	OHM 0.5% 1/4W	R13, R23, R25, R27, R29, R39,	6-0805_M	ERJ-PB6D2201V	12
RES SMD 470 0805 R21, R31, R33, OHM 0.5% 1/4W 0805 R47, R49 6-0805_M ERJ-PB6D4700V 12 RES SMD 0 OHM JUMPER 1/8W 0805 R21, R22, R23, R24, R25, R26, R27, R28, JUMPER 1/8W R29, R210, R211, R22, R23, R24, R25, R26, R27, R28, R29, R210, R211, R	10K	OHM 1% 1/4W	R20, R30, R32, R34, R36, R44,	6-0805_M	RNCP0805FTD10K0	12
RES SMD 0 OHM JUMPER 1/8W 0 0805 R*1, R*2, R*3, R*4, R*5, R*6, R*7, R*8, R*9, R*10, R*11, 6-0805_M ERJ-6GEY0R00V 12 6-32 Pan Head MACHINE SCREW Screw PAN PHILLIPS 6-32 Stand Off 1, HEX STANDOFF 6-32 ALUMINUM 6-32 Stand Off 3/4" StandOff1, StandOff2, StandOff3, StandOff4 TERM BLOCK PCB 2POS 5.0MM GREEN TERM 1, TERM2 1935161 TERM BLOCK PCB 12POS 5.0MM TERM3, TERM4, TERM5 TERM BLOCK PCB 12POS 5.0MM TERM TERM5 TERM BLOCK PCB 12POS 5.0MM TERM BLOCK PCB 12POS 5.0M		OHM 0.5% 1/4W	R21, R31, R33, R35, R37, R45,			
6-32 Pan Head Screw PAN PHILLIPS 6-32 Screw 1 6-32 Screw 1 1	470	RES SMD 0 OHM	R*1, R*2, R*3, R*4, R*5, R*6, R*7, R*8,	6-0805_M	ERJ-PB6D4700V	12
HEX STANDOFF 6- 32 ALUMINUM StandOff1, StandOff2, StandOff3 3/4" StandOff4 STANDOFF 4	0 6-32 Pan Head		R*12	6-0805_M	ERJ-6GEY0R00V	12
32 ALUMINUM StandOff3, StandOff4 STANDOFF 4 TERM BLOCK PCB 2POS 5.0MM GREEN TERM1, TERM2 1935161 1935161 2 TERM BLOCK PCB 12POS 5.0MM IERM5 1935268 1935268 3 TERM BLOCK PCB 12POS 5.0MM IERM5 1935268 1935268 3 TP_B1, TP_B2, TP_B4, TP_B5, TP_B6, TP_B7, TP_B8, TP_B9, TP_B10, TP_B11, TP_B12, TP_C1, TP_C2, TP_C3, TP_C4, TP_C5, TP_C6, TP_C7, TP_C8, TP_C9, TP_C10, TP_C11, TP_C12, TP_E11, TP_E2, TP_E3, TP_E4, TP_E5, TP_E6, TP_E7, TP_E8, TP_E9, TP_E10, TP_E7, TP_E8, TP_E9, TP_E10, TP_E7, TP_E8, TP_E9, TP_E10, TP_E7, TP_E8, TP_E9, TP_E10, TESTPOINT TestPoint TestPoint 36	Screw	PAN PHILLIPS 6-32	StandOff1,		6-32 Screw	1
1935161 TERM BLOCK PCB 12POS 5.0MM TERM3, TERM4, TERM5 1935268 1935268 1935268 1935268 1935268 1935268 1935268 1935268 1935268 3 1935268 1935268 3 1935268 3 1935268 1935268 3 1935268 3 1935268 1935268 3 1935268 1935268 3 1935268 1935268 3 1935268 1935268 3 1935268 1935268 3 1935268 1935268 1935268 3 1935268 1935268 1935268 1935268 3 1935268 1935268 3 1935268 1935268 1935268 1935268 3 1935268 19352	6-32 Stand Off	32 ALUMINUM 3/4"	StandOff3,		STANDOFF	4
12POS 5.0MM TERM3, TERM4, 1935268 1935268 3 TP_B1, TP_B2, TP_B1, TP_B2, TP_B5, TP_B6, TP_B7, TP_B8, TP_B9, TP_B10, TP_C1, TP_C2, TP_C3, TP_C4, TP_C9, TP_C10, TP_C9, TP_C10, TP_C11, TP_C2, TP_C11, TP_C2, TP_C7, TP_C8, TP_C9, TP_C10, TP_C11, TP_C2, TP_E11, TP_E2, TP_E3, TP_E4, TP_E5, TP_E6, TP_E7, TP_E8, TP_E9, TP_E10, TESTPOINT Test Point Test Point Test Point 36	1935161	2POS 5.0MM	TERM1, TERM2	1935161	1935161	2
IP_B3, TP_B4,	1935268	12POS 5.0MM		1935268	1935268	3
Nylon Washer MACHINE SCREW P Washer1, Washer2 Washer 8	TestPoint	Test Point	IP_B3, IP_B4, IP_B5, IP_B6, IP_B7, IP_B8, IP_B9, IP_B10, IP_E11, IP_B12, IP_C1, IP_C2, IP_C3, IP_C4, IP_C5, IP_C6, IP_C7, IP_C11, IP_C11, IP_C12, IP_E11, IP_E2, IP_E3, IP_E4, IP_E5, IP_E6, IP_E7, IP_E8, IP_E7, IP_E8, IP_E7, IP_E8, IP_E7, IP_E8, IP_E7, IP_E8, IP_E9, IP_E10,	TestPoint	TestPoint	36
	Nylon Washer					