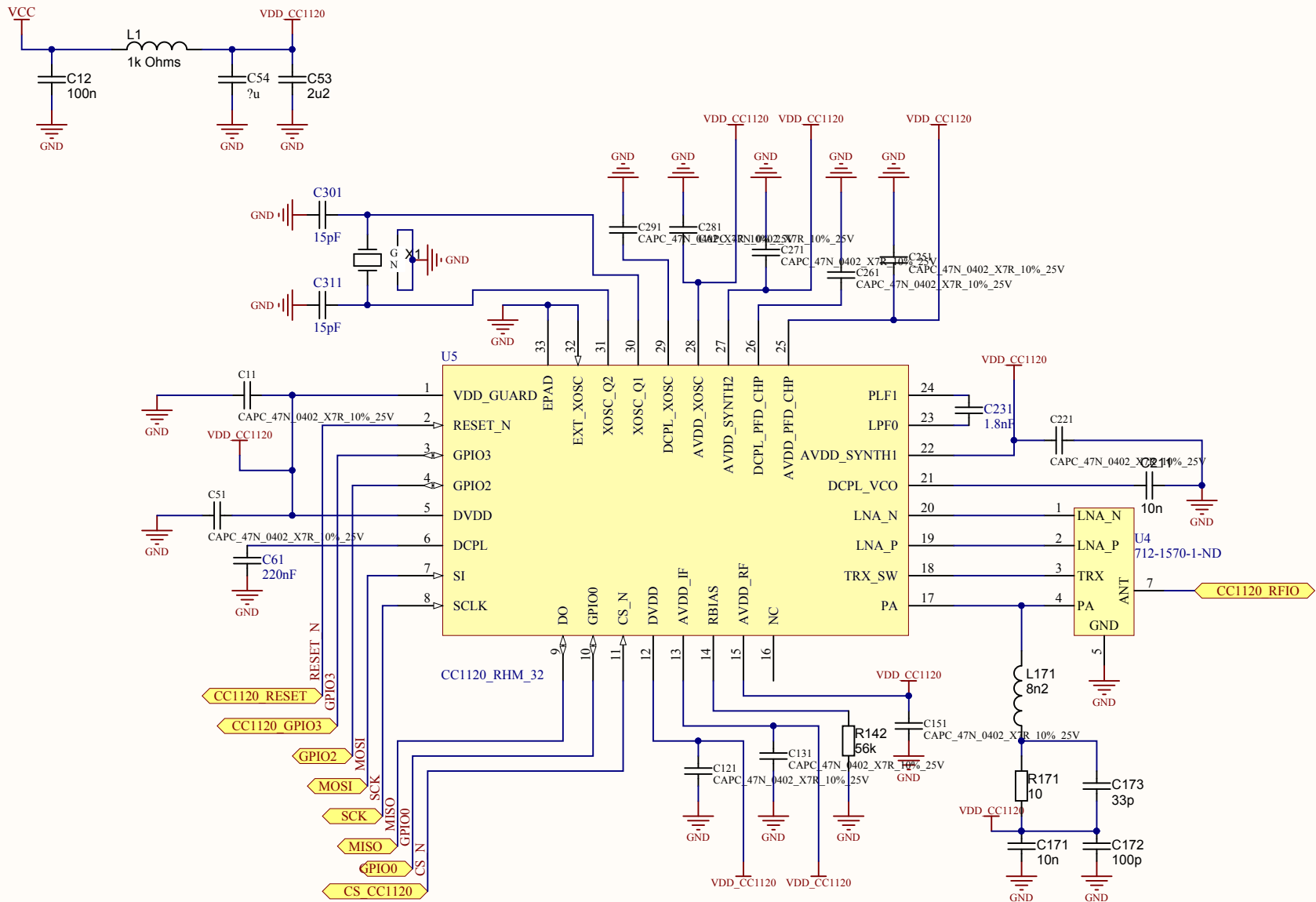
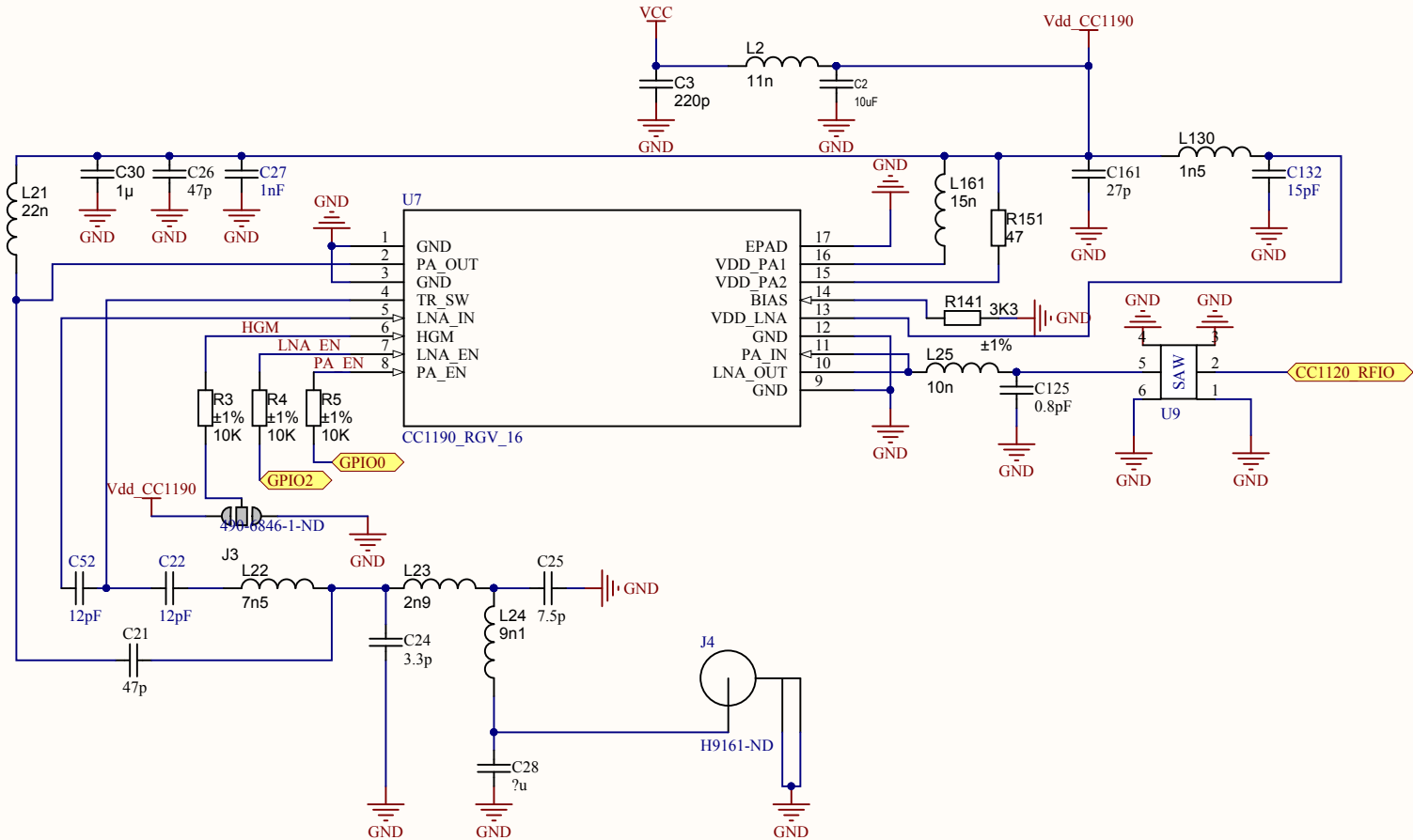




Title: HydroSenseNet RF Frontend			Bucknell University	
Dr. By: Edward Prescott		Ch. By: Alan Marchiori	Dept. of Computer Science	
Size: A	Number: 1	Revision: 1.1	701 Moore Ave	
Date: 7/20/2015			Lewisburg, PA 17837	
Time: 12:14:06 PM				
Sheet 2 of 3				
File: C:\Users\erp006\Google Drive\Water Quality Sensor\Circuit\HydroSenseNet\HydroSenseNet Communications.SchDoc				



NC1
U.FL to SMA Pigtail
931-1188-ND

Title: HydroSenseNet RF Amplifier			Bucknell University Dept. of Computer Science 701 Moore Ave Lewisburg, PA 17837 Bucknell UNIVERSITY
Dr. By: Edward Prescott		Ch. By: Alan Marchiori	
Size: A	Number: 1	Revision: 1.1	
Date: 7/20/2015		Time: 12:14:06 PM	
File: C:\Users\erp006\Google Drive\Water Quality Sensor\Circuit\HydroSenseNet\HydroSenseNet Range Extender.SchDoc		Sheet 3 of 3	



Bill of Materials

Bill of Materials For Project [HydroSenseNet.PrjPcb] (No PCB Document Selected)

Source Data From:	HydroSenseNet.PrjPcb
Project:	HydroSenseNet.PrjPcb
Variant:	None

Creation Date:	7/20/2015	12:14:15 PM
Print Date:	20-Jul-15	12:14:23 PM
Production Quantity:	10	
Currency	USD	

Footprint	Lib	Designator	Description	Quantity	Supplier 1	Supplier Part Num	Supplier Unit Price 1	Supplier Order Qty 1	Supplier Subtotal 1	Manufacturer 1	Manufacturer Part Number 1
	20mm_3V_Coin Cell Battery	BA11	BATTERY LITHIUM 3V COIN 20MM	1	Digi-Key	P1884-ND	0.255	10	\$ 2.55	Panasonic - BSG	CR2032
CAPC1608X55N	CAPC_10U_0603_X8R_M_4	C2	CAPC_10U_0603_X8R_M_4	1	Digi-Key	490-3298-1-ND	0.128	10	\$ 1.28	Murata Electronics North America	GRM188R06J08ME47D
CAPC1005X55N	CAPC_220U_0402_X8R_50V_5%	C33	Capacitor SMD Cer 220pF 10% 0402 X8R 50V	1	Digi-Key	490-1203-1-ND	0.004	10	\$ 0.04	Murata Electronics North America	GRM1555C1H221JAO1D
CAPC1005X55N	CAPC_47U_0402_X8R_105V_25V	C11, C51, C121, C131, C151, C21, C251, C281, C291, C281, C291	CAPC_47U_0402_X8R_105V_25V	11	Digi-Key	490-1309-1-ND	0.0026	110	\$ 1.26	Murata Electronics North America	GRM1555C1H472KA01D
CAPC1005X55N	CAPC_100U_0402_X8R_16V_10%	C12	Capacitor SMD Cer 100pF 10% 16V X8R 0402	1	Digi-Key	478-1126-1-ND	0.084	10	\$ 0.84	AVX Corporation	0402YD104KA7Z
CAPC1005X55N	CAPC_47P_0402_NP0_1_50	C21, C26	CAP CER 47PF 50V 5% NP0 0402	2	Digi-Key	490-5942-1-ND	0.013	20	\$ 0.26	Murata Electronics North America	GRM1555C1H470JA01D
CAPC1005X55N	CAPC_12P_0402_NP0_5%_50V	C22, C52	CAP CER 12PF 50V 5% NP0 0402	2	Digi-Key	490-5924-1-ND	0.017	20	\$ 0.34	Murata Electronics North America	GRM1555C1H120JA01D
CAPC1005X55N	CAPC_3P3_0402_NP0_C_50	C24	CAP CER 3.3PF 50V NP0 0402	1	Digi-Key	490-5938-1-ND	0.028	10	\$ 0.28	Murata Electronics North America	GRM1555C1H3R3CA01D
CAPC1005X55N	CAPC_7P5_0402_NP0_C_50	C25	CAP CER 7.5PF 50V NP0 0402	1	Digi-Key	490-7219-1-ND	0.028	10	\$ 0.28	Murata Electronics North America	GRM1555C1H7R5CA01D
CAPC1005X55N	CAPC_1N_0402_NP0_5%_50V	C27	CAP CER 1000PF 50V 5% NP0 0402	1	Digi-Key	490-3244-1-ND	0.065	10	\$ 0.65	Murata Electronics North America	GRM1555C1H102JA01D
CAPC1005X55N	WP_CAV71_0402	C28, C54	EMPTY, NOT CONNECTED	2							
CAPC1005X55N	CAPC_1u_0402_X8R_6V3_10%	C30	Capacitor SMD Cer 1uF 10% 16V X8R 0402	1	Digi-Key	478-2583-1-ND	0.072	10	\$ 0.72	AVX Corporation	0402B0105KA7Z
CAPC1608X55N	CAPC_2u2_0603_10V_10%	C53	Capacitor SMD Cer 2.2uF 10% 10V X8R 0603	1	Digi-Key	478-6212-1-ND	0.14	10	\$ 1.40	AVX Corporation	0603Z225KA7Z
CAPC1005X55N	CAPC_220U_0402_X8R_105V_10V	C61	CAP CER 0.22uF 10% 10V X8R 0402	1	Digi-Key	490-3010-1-ND	0.05	10	\$ 0.55	Murata Electronics North America	GRM1555R1E1242KE19D
CAPC1005X55N	CAPC_0P8_0402_NP0_B_50V	C125	CAPC_0P8_0402_NP0_B_50V	1	Digi-Key	490-6269-1-ND	0.072	10	\$ 0.72	Murata Electronics North America	GRM1555C1H8R08A01D
CAPC1005X55N	CAPC_15P_0402_NP0_5%_50V	C132, C301, C311	CAP CER 15PF 50V 5% NP0 0402	3	Digi-Key	490-5888-1-ND	0.007	50	\$ 0.35	Murata Electronics North America	GRM1555C1H150JA01D
CAPC1005X55N	CAPC_27P_0402_NP0_1_50	C161	CAPC_27P_0402_NP0_1_50	1	Digi-Key	490-5869-1-ND	0.021	10	\$ 0.21	Murata Electronics North America	GRM1555C1H270JA01D
CAPC1005X55N	CAPC_10U_0402_X8R_16V_10%	C171, C221	Capacitor SMD Cer 10uF 10% 16V X8R 0402	2	Digi-Key	478-1114-1-ND	0.014	20	\$ 0.28	AVX Corporation	0402CY103KA7Z
CAPC1005X55N	CAPC_100U_0402_NP0_50V_5%	C172	Capacitor SMD Cer 100pF 5% 50V NP0 0402	1	Digi-Key	311-1024-1-ND	0.012	10	\$ 0.12	Yageo	CC0402JRWPO68N101
CAPC1005X55N	CAPC_33P_0402_NP0_50V_5%	C233	Capacitor SMD Cer 33pF 5% 50V NP0 0402	1	Digi-Key	478-1076-1-ND	0.1	10	\$ 1.00	Murata Electronics North America	0402S4330JA7Z
CAPC1005X55N	CAPC_1N8_0402_U2J_5%_10V	C175	CAP CER 1800PF 10V 5% U2J 0402	1	Digi-Key	490-6274-1-ND	0.126	10	\$ 1.26	AVX Corporation	GRM1557U1A182JA01D
Coin Cell Battery	WP_Battery Holder_20mm	J2	HOLDER BATTERY 20MM COIN	1	Digi-Key	BAT4-HLD-001-ND	0.28	10	\$ 2.80	Linear Technologies Inc	BAT4-HLD-001
U_FL_SMD	WP_U_FL Connector	J4	CONN UMC JACK STR 50 OHM SMD	1	Digi-Key	H6161-ND	1.122	10	\$ 11.22	Hirose Electric Co Ltd	U.FL-R-SMT(01)
CAPC1005X55N	L_BEAD_102_0402	L1	Description FILTER CHIP 1000 OHM 250MA 0402	1	Digi-Key	490-3999-1-ND	0.187	10	\$ 1.87	Murata Electronics North America	BLM159H102S1ND
CAPC1005X55N	L_1N_0402_1_LOW	L2	FIXED IND 1N 11N 500MA 140 MOHM	1	Digi-Key	490-6766-1-ND	0.286	10	\$ 2.86	Murata Electronics North America	LOW15AN102ND
INDC1608N	L_22N_0603_1_LOW	L21	FIXED IND 22N 60A 99 MOHM SMD	1	Digi-Key	490-6876-1-ND	0.307	10	\$ 3.07	Murata Electronics North America	LOW15AN22N10D
CAPC1005X55N	L_7N5_0402_G_QLOW	L22	FIXED IND 7.5N 570MA 130 MOHM	1	Digi-Key	490-6846-1-ND	0.314	10	\$ 3.14	Murata Electronics North America	LOW15AN7NSG00D
CAPC1005X55N	L_29N_0402_B_QLOW	L23	FIXED IND 2.9N 750MA 70 MOHM	1	Digi-Key	490-6801-1-ND	0.314	10	\$ 3.14	Murata Electronics North America	LOW15AN29NB00D
CAPC1005X55N	L_9N1_0402_G_QLOW	L24	FIXED IND 9.1N 540MA 140 MOHM	1	Digi-Key	490-6854-1-ND	0.314	10	\$ 3.14	Murata Electronics North America	LOW15AN9N1G00D
CAPC1005X55N	L_11N_0402_G_QLOW	L25	FIXED IND 11N 500MA 170 MOHM	1	Digi-Key	490-6762-1-ND	0.314	10	\$ 3.14	Murata Electronics North America	LOW15AN11NG00D
CAPC1005X55N	L_1N5_0402_S	L130	FIXED IND 1.5N 300MA 100 MOHM	1	Digi-Key	490-2612-1-ND	0.059	10	\$ 0.59	Murata Electronics North America	LOG15HS1N5S02D
CAPC1005X55N	L_11N_0402_J	L161	FIXED IND 11N 300MA 320 MOHM	1	Digi-Key	490-2625-1-ND	0.059	10	\$ 0.59	Murata Electronics North America	LOG15HS11N502D
CAPC1005X55N	L_8N2_0402_G_QLOW	L171	FIXED IND 8.2N 540MA 140 MOHM	1	Digi-Key	490-6849-1-ND	0.314	10	\$ 3.14	Murata Electronics North America	LOW15AN8N2G00D
LED-0603-GREEN	LED_SMD_Green_0603_570nm	LED1, LED2, LED6	LED 0603 SMD Green 570nm 50mcd 30mA	3	Digi-Key	754-1116-1-ND	0.272	30	\$ 8.16	Knightridge Company LLC	APT1608CGCK
LED-0603-YELLOW	LED_SMD_Yellow_0603_590nm	LED3, LED5	LED 0603 SMD Yellow 590nm 150mcd 20mA	2	Digi-Key	754-1124-1-ND	0.31	20	\$ 6.20	Knightridge Company LLC	APT1608YCK
LED-0603-RED	LED_SMD_Red_0603	LED4, LED7, LED8	LED 0603 SMD Hyper Red 630nm 220mcd 20mA	3	Digi-Key	516-1420-1-ND	0.3254	30	\$ 9.79	Avago Technologies US Inc.	HSMH-C190
Arduino Shield	WP_Arduino Shield	MC1	SMA to U.FL Pigtail	2	Digi-Key	831-1188-ND	0.49	10	\$ 4.90	Taoglas Limited	CAB_720
RESC1608X55N	RES_10K_0603_5%	RT1, RT4	Resistor SMD chip 10K 0hm 0.1W 5% 0603	2	Digi-Key	311-10KGRCT-ND	6.008	25	\$ 0.20	Yageo	RC0603JR-0710KL
RESC1608X55N	RES_100R_0603_1%	R2, R7, R8, R9, R10, R11, R12, R13	Resistor SMD chip 100 Ohm 0.1W 1% 0603	8	Digi-Key	311-100HRCCT-ND	0.0057	100	\$ 0.57	Yageo	RC0603FR-07100RL
RESC1005X40N	RES_10K_0402_1%	R3, R4, R5	Resistor SMD chip 10K 0hm 0.063W 1% 0402	3	Digi-Key	311-10KLRCT-ND	0.006	30	\$ 0.29	Yageo	RC0402FR-0710KL
RESC1608X55N	RES_100K_0603_1%	R6	Resistor SMD chip 100K Ohm 0.1W 1% 0603	1	Digi-Key	541-1788-1-ND	0.0072	10	\$ 0.72	Vishay Dale	RC0603100KFKEA
RESC1005X40N	RES_3K3_0402_1%	R141	Resistor SMD chip 3.3K Ohm 0.03W 1% 0402	1	Digi-Key	311-3.30KLRCT-ND	0.013	10	\$ 0.13	Yageo	RC0402FR-075KL
RESC1005X40N	RES_56K_0402_1%	R142	Resistor, 060303 SMD, Empty footprint	1	Digi-Key	311-56KLRCT-ND	0.013	10	\$ 0.13	Yageo	RC0402FR-075KL
RESC1005X40N	RES_47_0402_1%	R151	Resistor, 060303 SMD, Empty footprint	1	Digi-Key	311-47LRCT-ND	0.013	10	\$ 0.13	Yageo	RC0402FR-0747RL
RESC1005X40N	RES_10_0402_5%	R171	Resistor, 060303 SMD, Empty footprint	1	Digi-Key	RHM1000CT-ND	0.194	10	\$ 1.94	Rohm Semiconductor	ESR01M2P-10
A2035-H	Maestro A2035-H GPS	U1		1	Digi-Key	1530-1009-6-ND	21.363	10	\$ 213.53	Maestro Wireless Solutions	A2035-H
SOI23-C	WP_MA809E	U2	IC MPU/RESET CRC SOI23-C	1	Digi-Key	MA809SEUR-T-ND	2.788	10	\$ 27.88	Maxim Integrated	MA809SEUR-T
STM3217P1030X26-502N	RTC_PC2129	U3	IC RTC CLK/CLK I2C/PSI-26-SOIC	1	Digi-Key	668-9817-ND	3.181	10	\$ 31.81	NXP Semiconductors	PCF2129T2,518
HM3201P150013	WP_Integrated Passive Component_0900PC150013	U4	TI CC1120 1121 1125 FRONT-END	1	Digi-Key	712-1570-1-ND	1.189	10	\$ 11.89	Johnson Technology Inc	0900PC15J0013E
THMS32_37FX3P7	IC_LED Driver PCA9634	U5	IC RF TXRX FOR NARROWBAND 32QFN	1	Digi-Key	296-35667-6-ND	4.95	10	\$ 49.50	Texas Instruments	CC1120RHR
RS90P6P640X12-9-20N	IC_Channel LED Driver, C2C Connectivity	U6	9 Channel LED Driver, C2C Connectivity	1	Digi-Key	568-4066-1-ND	1.44	10	\$ 14.40	NXP Semiconductors	PCA9634PW, 118
RGV16_2P16X2P1-8SOP8	CC1190_RGV_16	U7	IC RF FRONT-END 16V0FN	1	Digi-Key	296-36922-1-ND	3.37	10	\$ 33.70	Texas Instruments	CC1190RGV7
	IC_DUAL BUFFER TC7W125FU	U8	IC BUS BUFFER DUAL N-W/ SMD	1	Digi-Key	TC7W125FUTE12-LFCT-ND	0.371	10	\$ 3.71	Tohshiba Semiconductor and Storage	TC7W125FUTE12LF
6Pin_SAW Filter	WP_SAW Filter	U9	FILTER SAW 915MHz REMOTE SMD	1	Digi-Key	495-1674-1-ND	1.307	10	\$ 13.07	EPCOS (TDK)	63992163588U410W9
Crystal_4_SMD	WP_Crystal_32Mhz-10pF	X1	CRYSTAL 32.000MHz 10PF SMD	1	Digi-Key	644-1065-1-ND	1.184	10	\$ 11.84	NDK	NZC520SA-32.00000MHz
									\$ 557.38		

Approved	Notes
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Revision 1.1

Prepared by E. Prescott
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