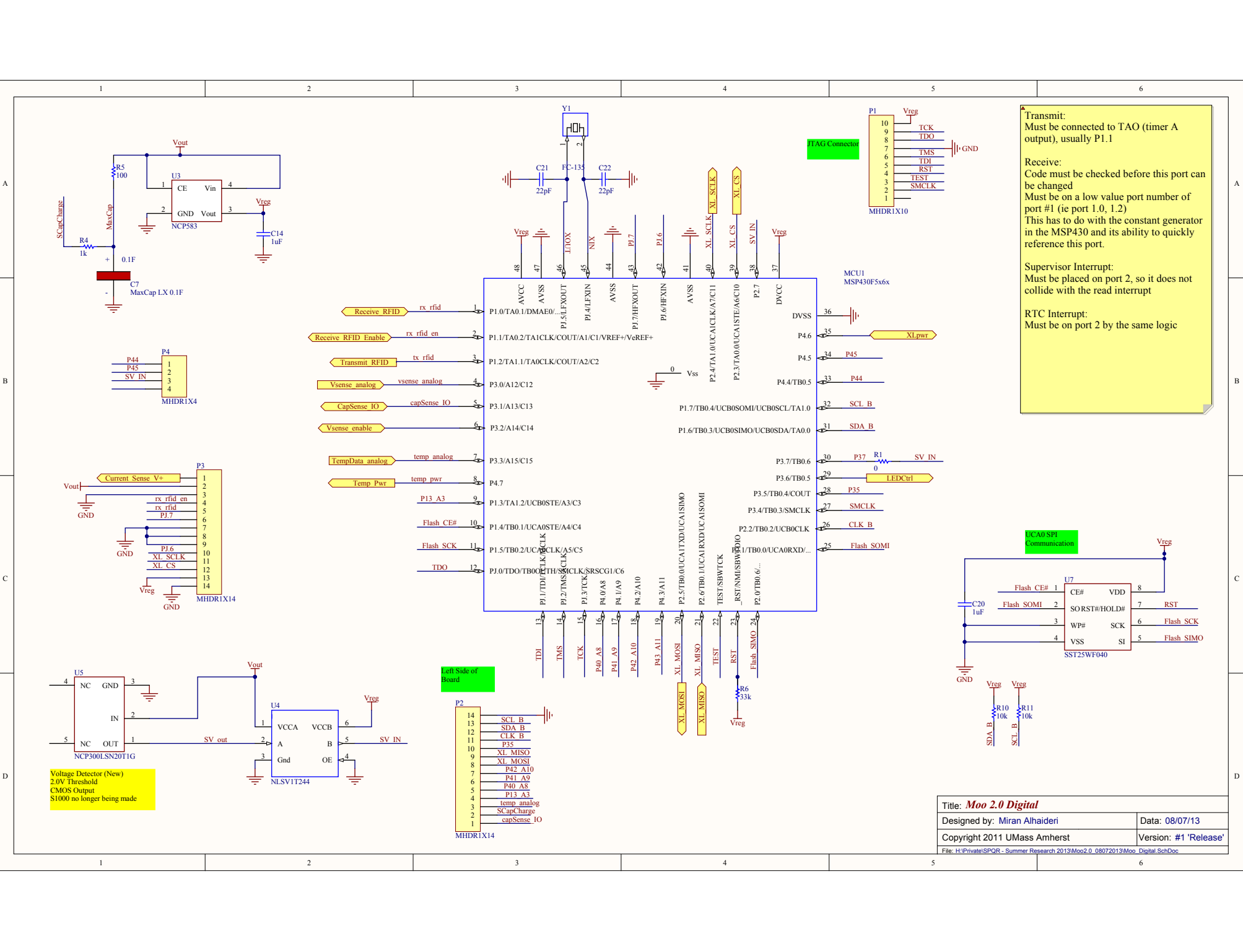


changed the capacitor 7 to 30pF
Old one no longer for sale

Used as a GPIO

Title: Moo 1.1 Antenna Front End	
Designed by: Dan Yeager & Alanson Sample	Data: 7/01/09
Copyright 2009 Intel Corporation	Version: #1 'Release'
File: H:\Private\SPQR - Summer Research 2013\Moo2.0_08072013\Moo_AFE_SchDoc	



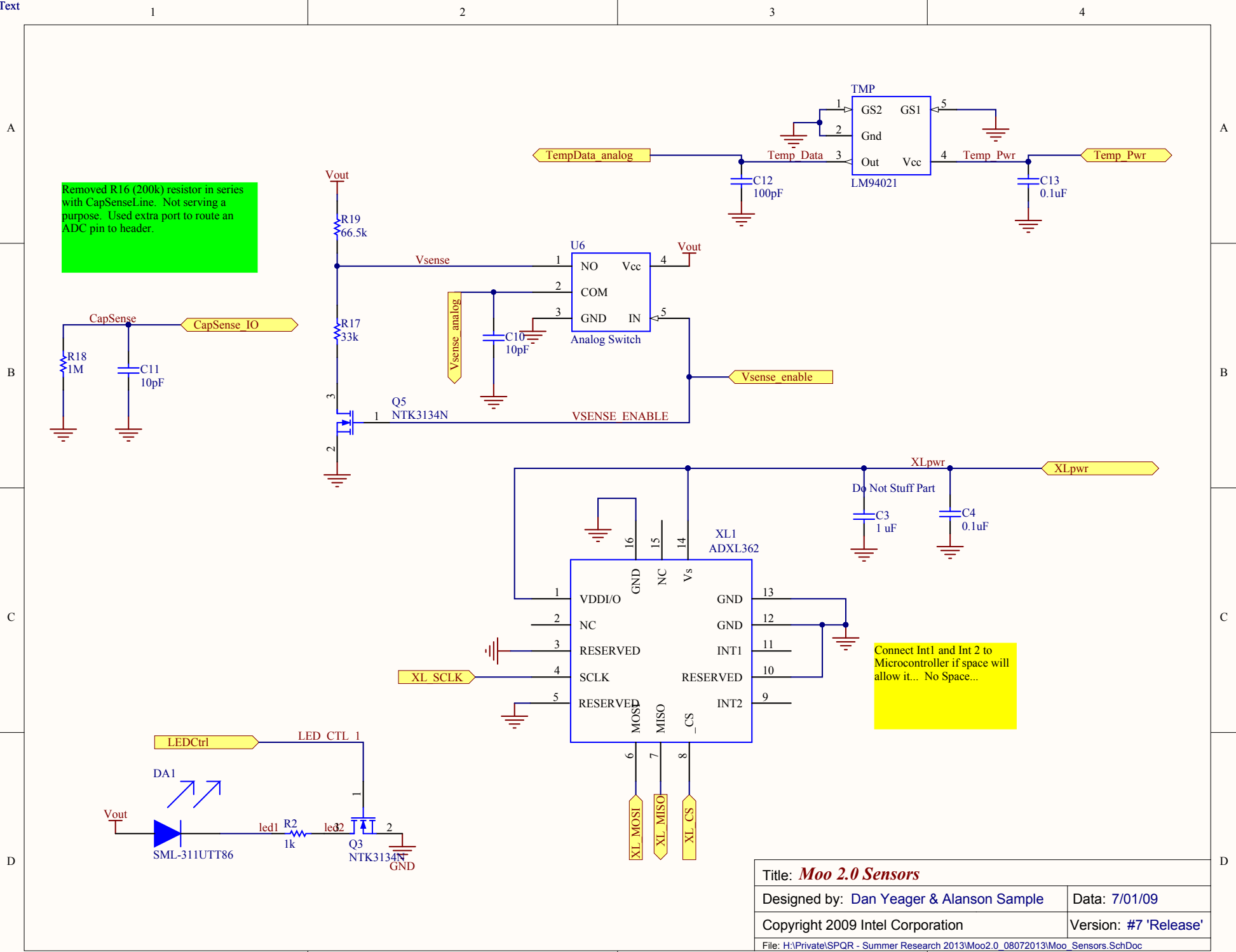
Transmit:
Must be connected to TAO (timer A output), usually P1.1

Receive:
Code must be checked before this port can be changed
Must be on a low value port number of port #1 (ie port 1.0, 1.2)
This has to do with the constant generator in the MSP430 and its ability to quickly reference this port.

Supervisor Interrupt:
Must be placed on port 2, so it does not collide with the read interrupt

RTC Interrupt:
Must be on port 2 by the same logic

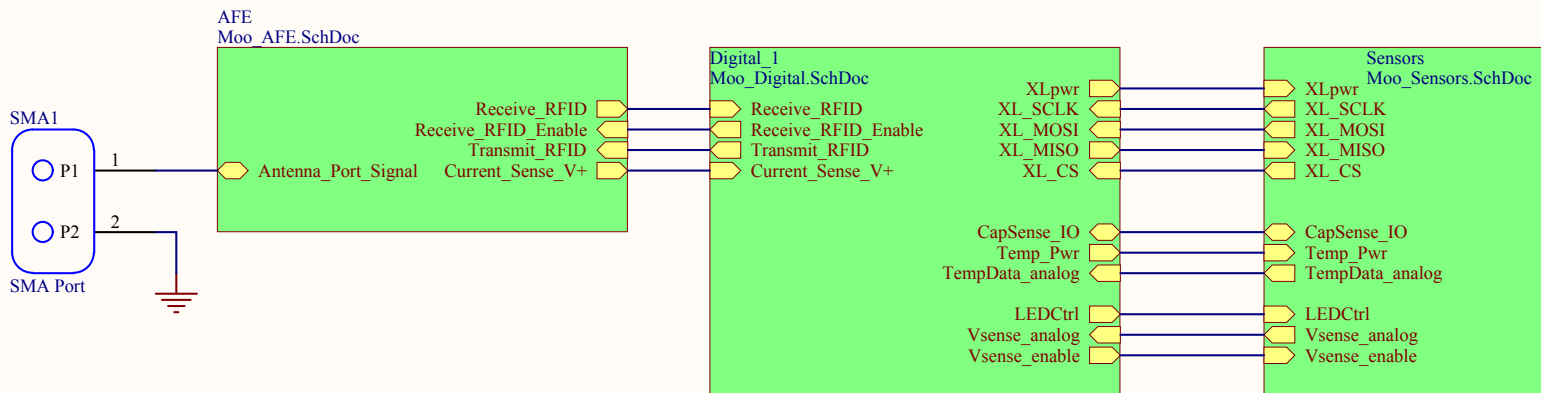
Title: Moo 2.0 Digital	
Designed by: Miran Alhaideri	Data: 08/07/13
Copyright 2011 UMass Amherst	Version: #1 'Release'
File: H:\Private\SPQR - Summer Research 2013\Moo2.0_08072013\Moo_Digital_SchDoc	



Removed R16 (200k) resistor in series with CapSenseLine. Not serving a purpose. Used extra port to route an ADC pin to header.

Connect Int1 and Int 2 to Microcontroller if space will allow it... No Space...

Title: Moo 2.0 Sensors	
Designed by: Dan Yeager & Alanson Sample	Data: 7/01/09
Copyright 2009 Intel Corporation	Version: #7 'Release'
File: H:\Private\SPQR - Summer Research 2013\Moo2.0_08072013\Moo Sensors.SchDoc	



PCB Layout Rules and Guidelines

- 5x5 Routing
- 5mil clearance
- 5mil trace width
- 8mil trace width preferred
- Via 8x12
- Hole size 8mil annular ring 12mil
- Prototron rules hole size plus 2mils of annular on either size (hole+4mil). More annular is needed for vias and probe points that will be man handled and repeatedly soldered and re-soldered
- RF Signals
(Above routing rules only valid for low frequency signals or digital I/O)
- RF need larger vias and careful routing

Trace Thickness

1/2 oz.	0.7 mils
1 oz.	1.4 mils
2 oz.	2.8 mils

Title: <i>Moo Top</i>	
Designed by: Hong Zhang & Jeremy Gummesson	Data: 08/06/10
Copyright 2010 UMass Amherst	Version: #1 'Release'
File: H:\Private\SPQR - Summer Research 2013\Moo2.0_08072013\Moo_Top.SchDoc	

Bill of Materials

<Parameter Title not found>

Source Data From: Moo2.0.PrjPcb
 Project: Moo2.0.PrjPcb
 Variant: None

Creation Date: 9/15/2013 10:35:48 PM
 Print Date: 41532 41532.94165

Footprint	Comment	LibRef	Designator	Description	Quantity
0805	Ceramic_Chip_Capacitor	Ceramic_Chip_Capacitor	C1	Ceramic Capacitor - Standard	1
0402	Ceramic_Chip_Capacitor	Ceramic_Chip_Capacitor	C2, C4, C10, C11, C12, C13, C14, C20, Cp1, Cp2, Cp3, Cp4, Cs1, Cs2, Cs3, Cs4, Cs5	Ceramic Capacitor - Standard	17
0603	1 uF Tantalum Chip Capacitor	Ceramic Chip Capacitor	C3	Decoupling capacitor	1
Maxcap LX 0.1F	MaxCap LX 0.1F	MaxCap LX 0.1F	C7	MaxCap LX 0.1F, low leakage supper cap 5.5v	1
0402	Ceramic Chip Capacitor	Ceramic Chip Capacitor	C21, C22	Ceramic Capacitor - Standard	2
Var-Cap_603	Var Cap	Var-Cap/603	CV1	Var-Cap 603 Compatible, DK: SG2029CT-ND	1
SOT-323, HSMS-285C	HSMS-285C	HSMS-285C	D1, D2, D3, D4, D5	Agilent Schottky Diode, Bridge Quad, HSMS-285C	5
SOD-523	RB751S40T1	Schottky Diode	D6, D7	Schottky Diode	2
0603 - LED	SML-311UTT86	SML-311UTT86	DA1	LED 630NM RED WTR CLR 0603 SMD	1
SOD-523	ESD5Z3.3T1	ESD5Z3.3T1	ED	5V Overvoltage Protection Zener	1
0603	Inductor	Inductor	L1	Inductor	1
48-QFN	MSP430F5x6x	MSP430F5x6x	MCU1	48QFN MSP430F5x6x	1
MHDR1X10	MHDR1X10	MHDR1X10	P1	Header, 10-Pin	1
MHDR1X14	MHDR1X14	MHDR1X14	P2, P3	Header, 14-Pin	2
MHDR1X4	MHDR1X4	MHDR1X4	P4	Header, 4-Pin	1
Probe Point	Probe Point	Probe Point	PP1, PP2	Probe Point for debug	2
SOT-23	BFT25A	BFT25A	Q1	NPN 5 GHz Wideband Transistor	1
SOT723	NTK3134N	NTK3134N	Q2, Q3, Q5	Powe Mosfet 20V, 890mA, Single N-channel	3
sol343r	BF1212WR	BF1212	Q4		1
0402	Thick Film Chip Resistor	Thick Film Chip Resistor	R1, R2, R3, R4, R5, R6, R10, R11, R17, R18, R19	Thick Film Chip Resistor	11
0603 - RES	Thick Film Chip Resistor	Thick Film Chip Resistor	Rs	Thick Film Chip Resistor	1
SMA Port	SMA Port	SMA Port	SMA1	Two pin SMA connector wisp	1
SC70	LM94021	LM94021	TMP	Temperature Sensor	1
sc70-5	NCS2200SQ2T2G	NCS2200SQ2T2G	U1	On Semi 10uA Comparator	1
UDFN6	NLSV1T244	NLSV1T244	U2, U4	Level Shifter: 1-Bit Dual-Supply Non-Inverting Level Translator	2
SC82-AB	NCP583	NCP583	U3	Ultra-Low Iq 150mA CMOS LDO Regulator with Enable	1
SOT-23-5	NCP300LSN20T1G	NCP300LSN20T1G	U5	2.0V Voltage Detector; Active-low, CMOS output	1
sc70-5	Analog Switch	TS5A3166	U6	TI Analog Switch 100nA 1ohm Normally Open	1
SOIC8	SST25WF040	SST25WF040	U7	Serial Flash Memory - 8 Lead SOIC Package	1
16-pin QFN for ADXL362	ADXL362	ADXL362	XL1	Analog Devices 3D Accelerometer	1
FC-135	FC-135	FC-135	Y1		1

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Approved	Notes