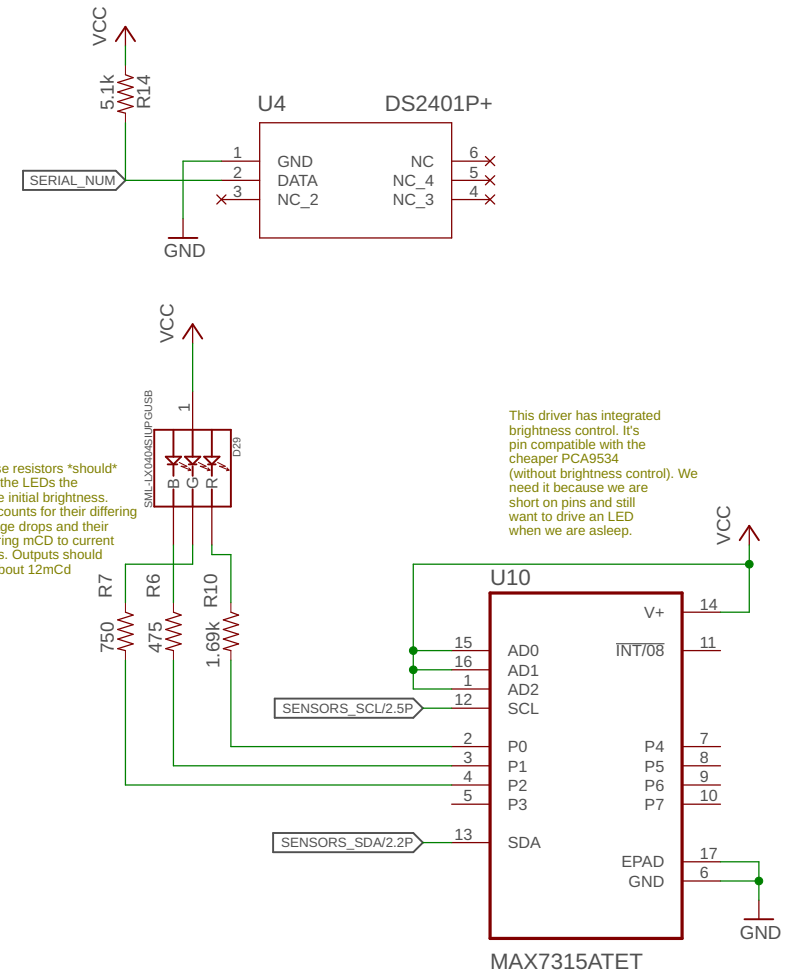
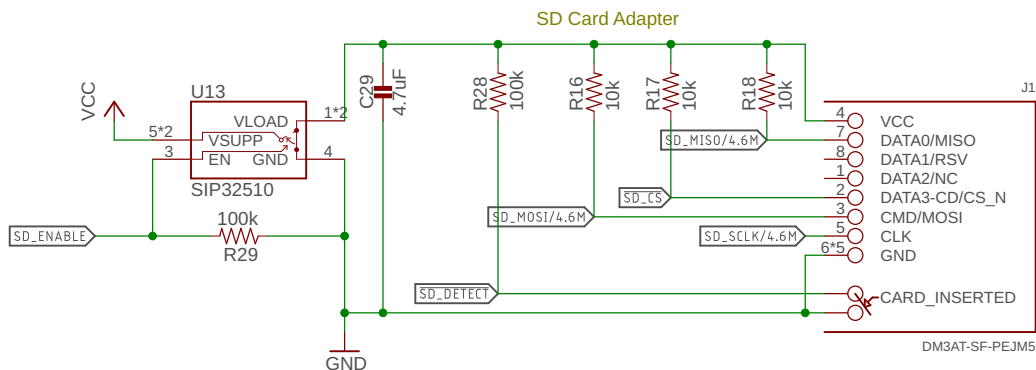
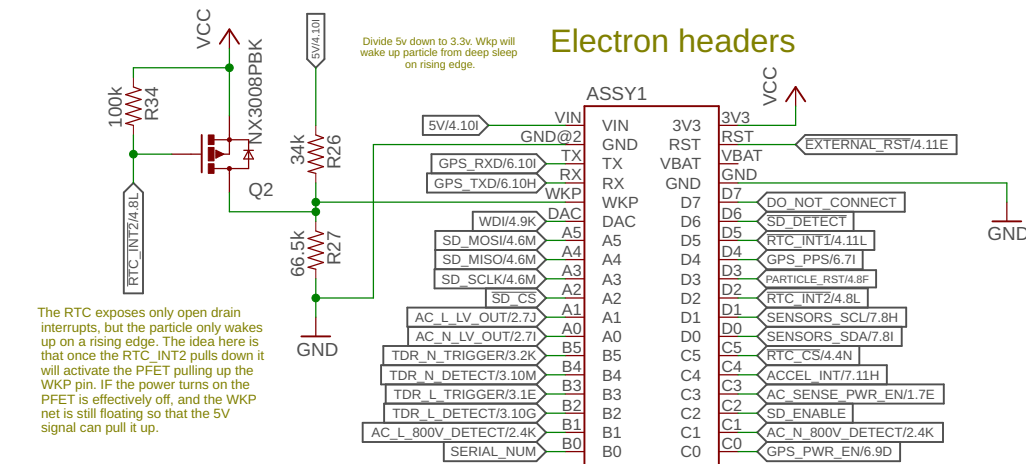


Headers

Electron headers



PowerWatch

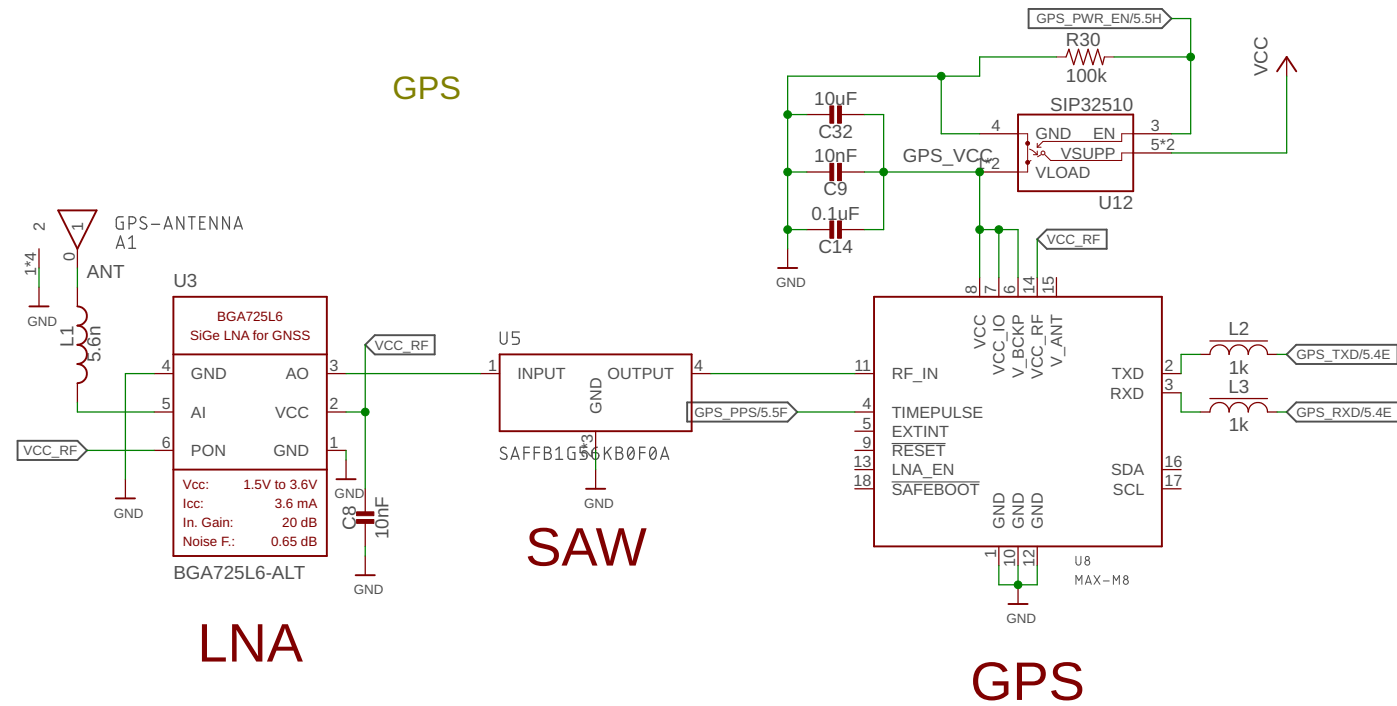
REV:
G

Author: Joshua Adkins

Date: 7/11/19 3:49 PM

Sheet: 5/7

https://www.u-blox.com/sites/default/files/MAX-8-M8-FW3_HardwareIntegrationManual_%28UBX-15030059%29.pdf



PowerWatch

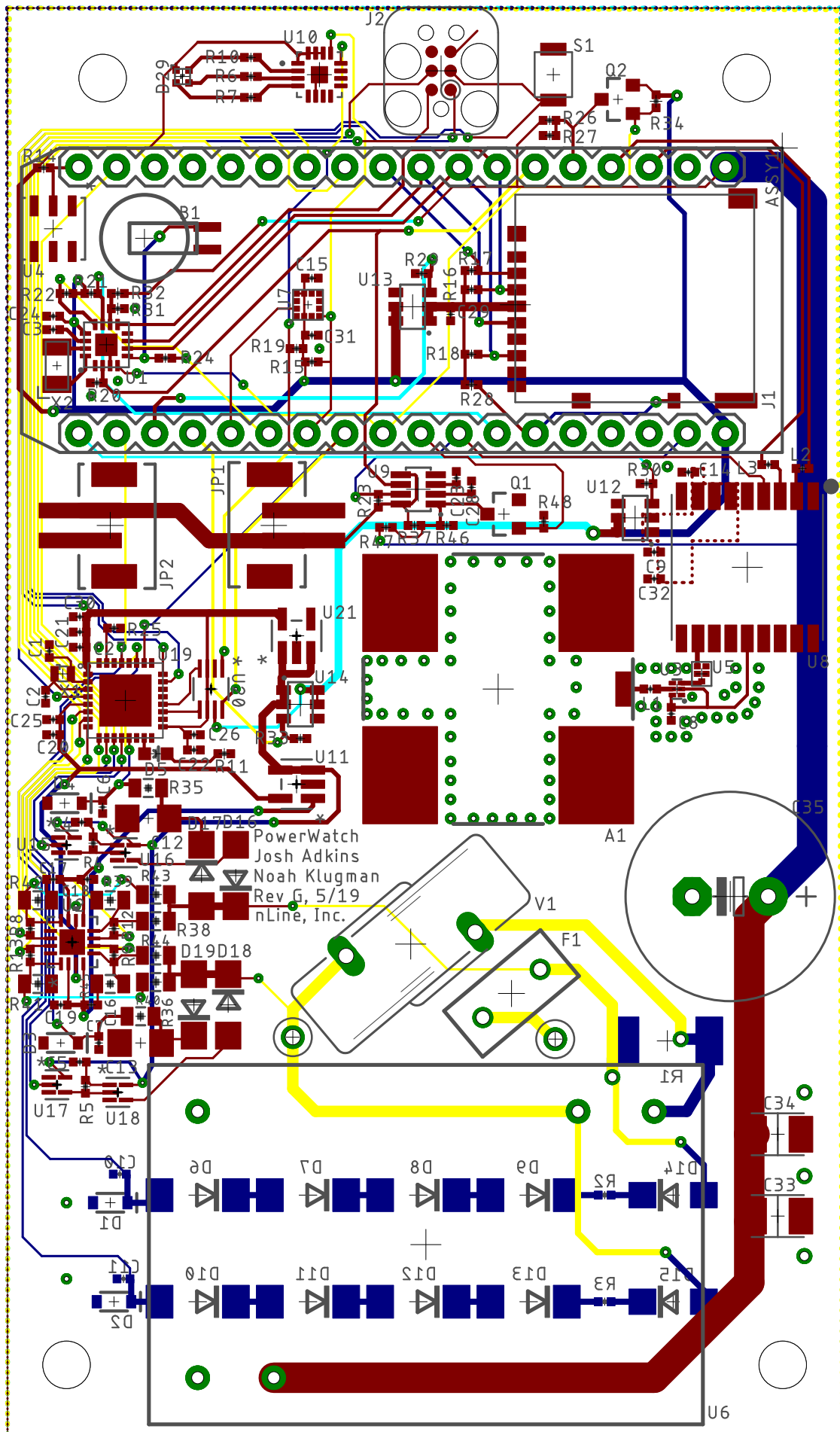
REV:
G

Author: Joshua Adkins

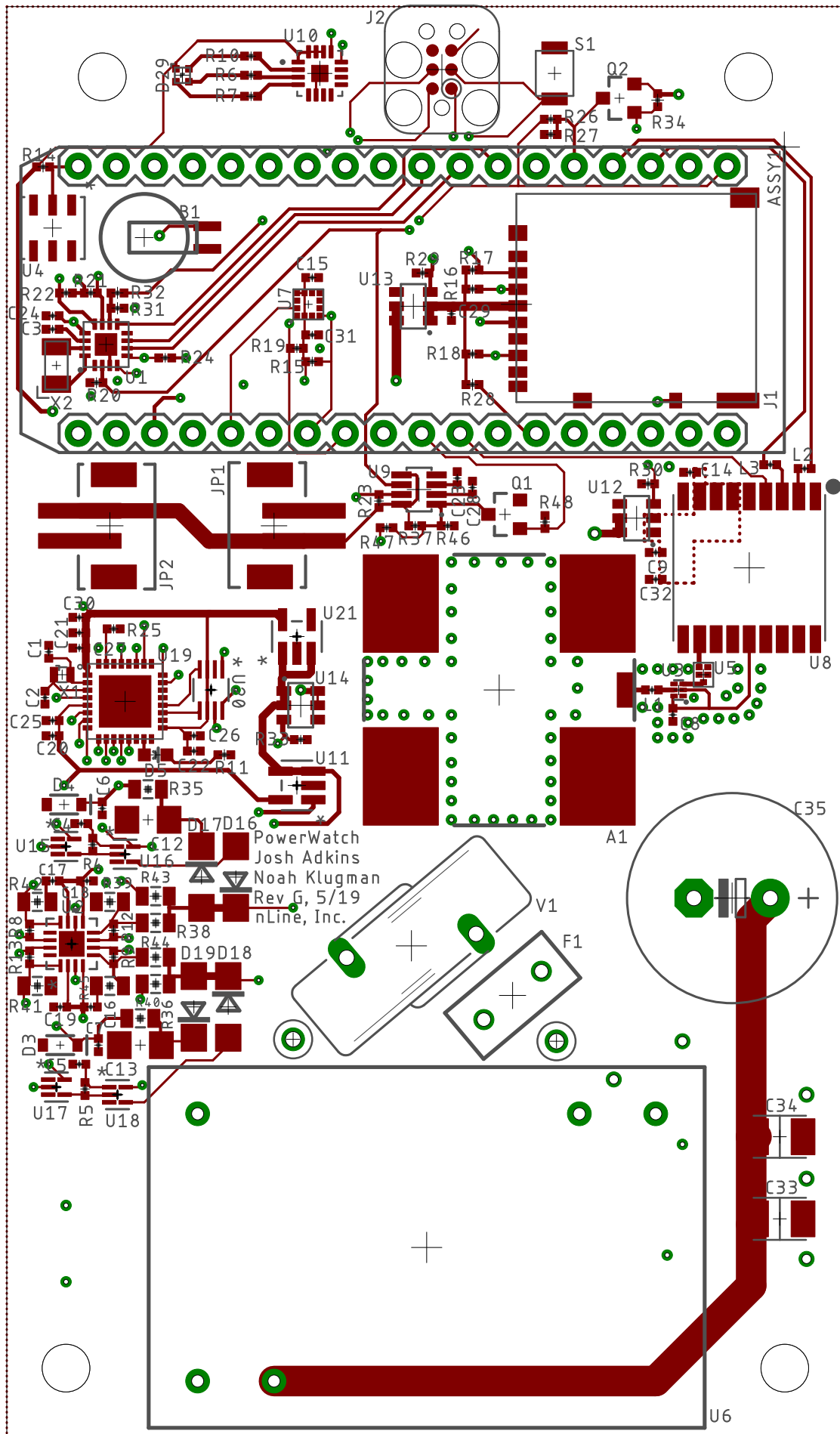
Date: 7/11/19 3:49 PM

Sheet: 6/7

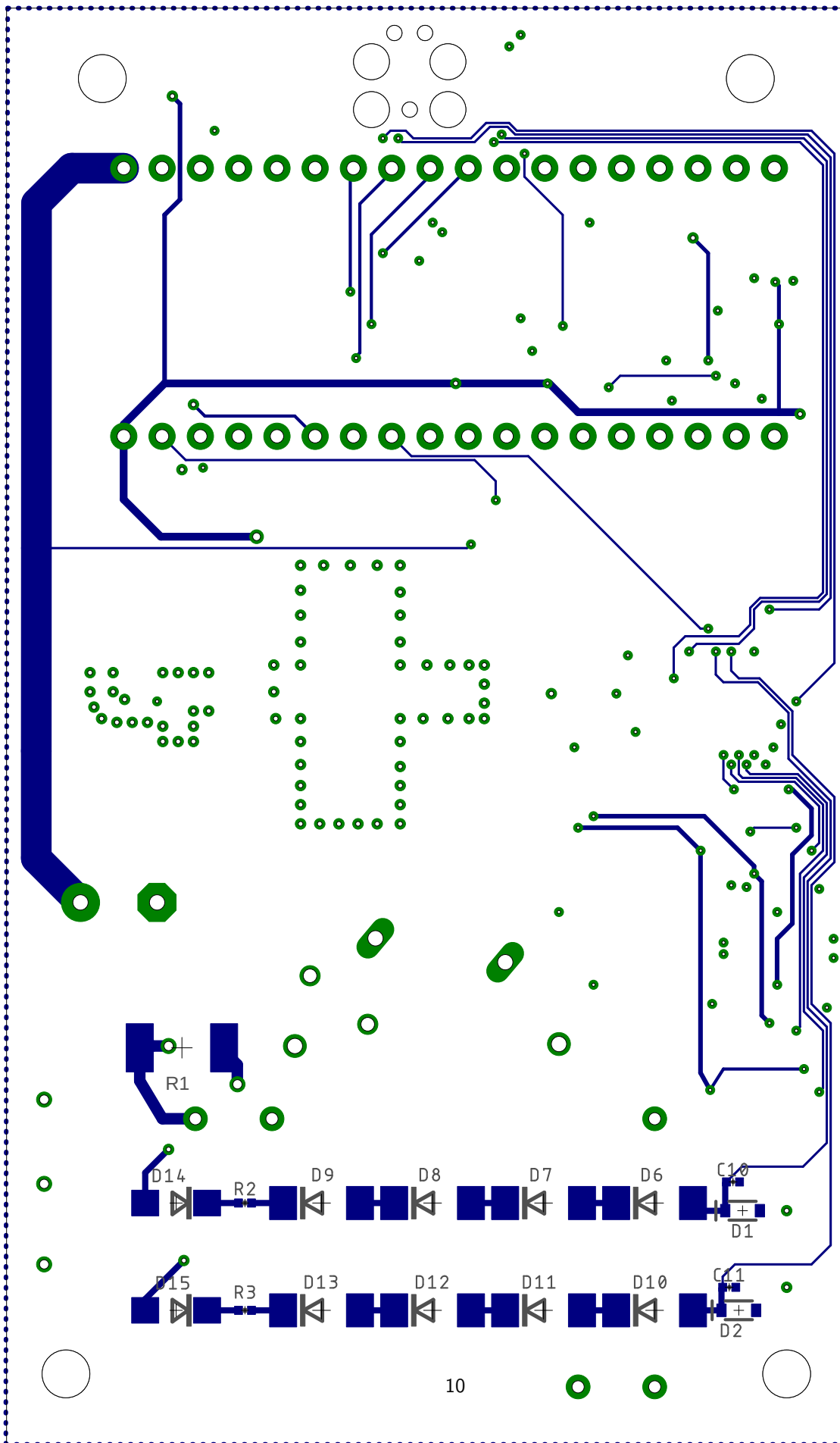
Top and Bottom Layers



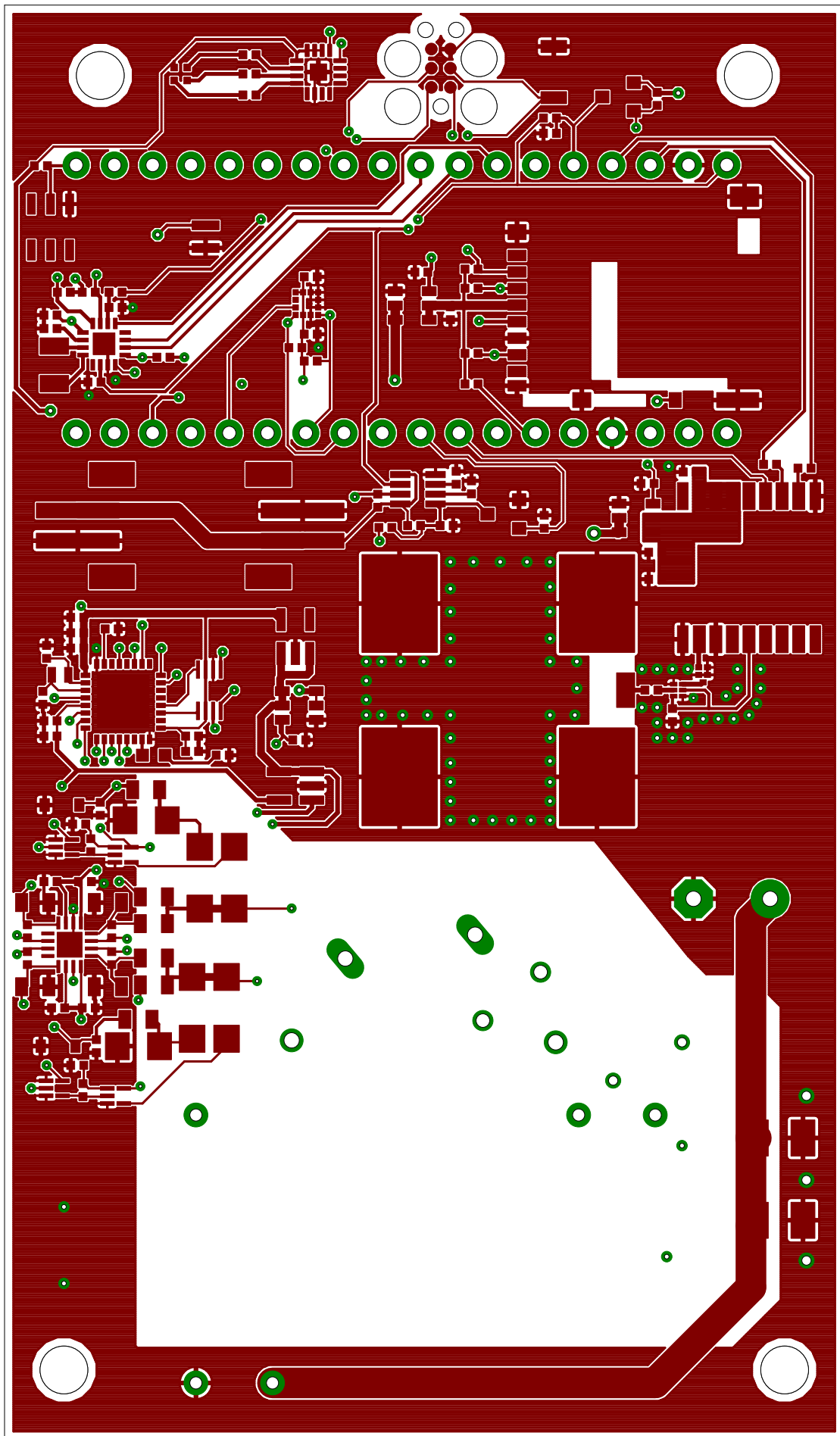
Top Layer



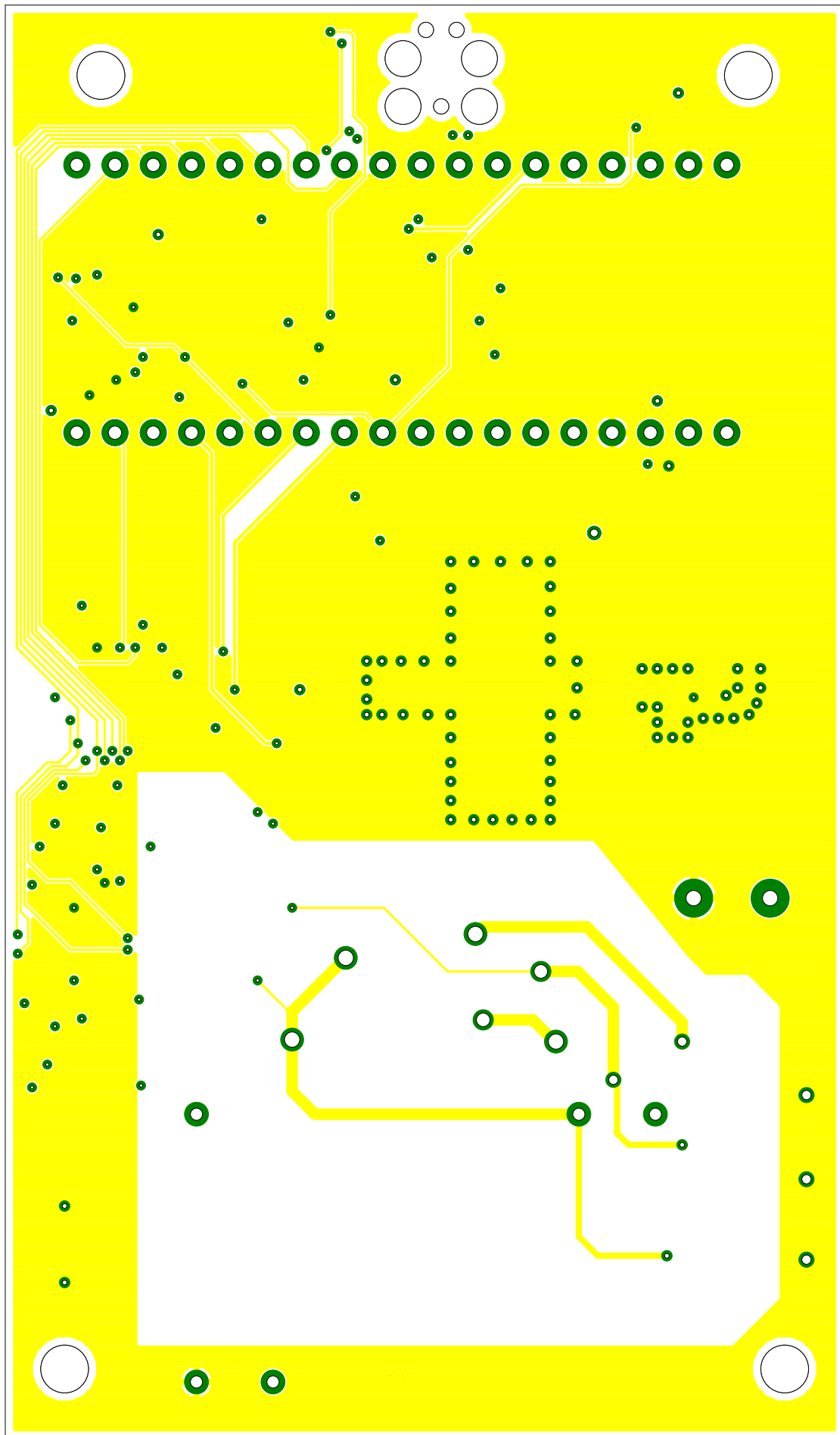
Bottom Layer



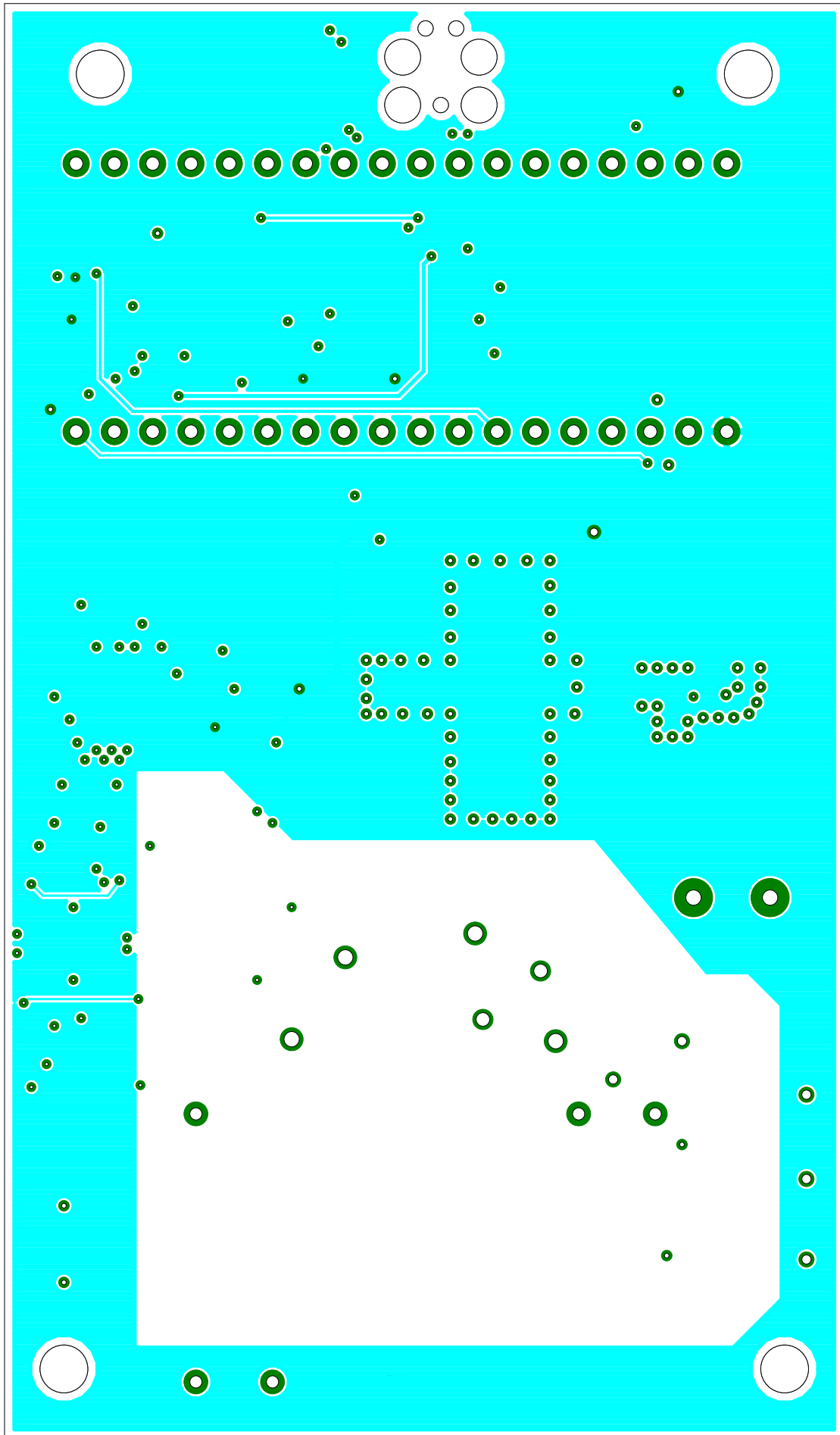
Top Copper Layer



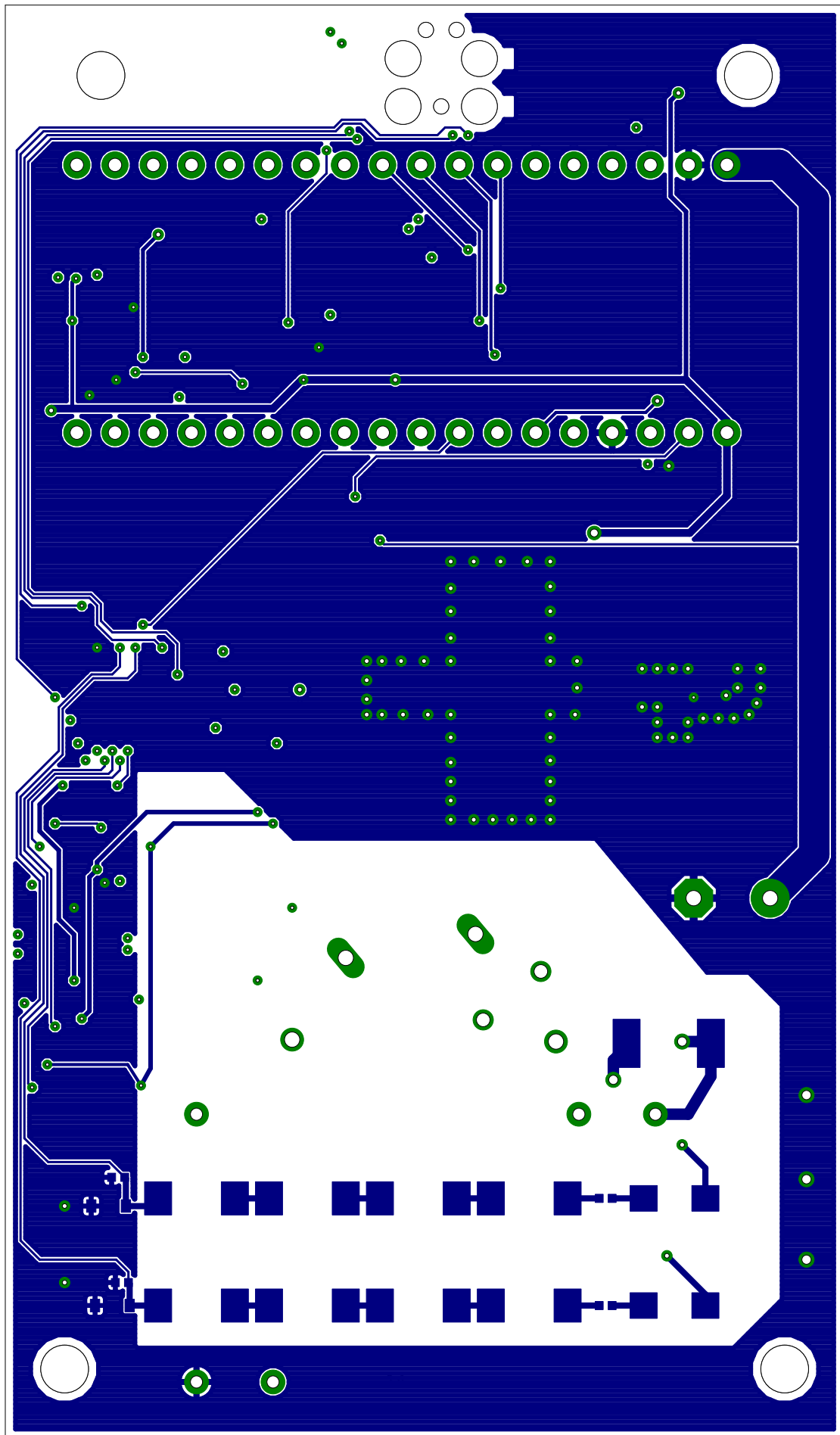
Layer 2 Copper



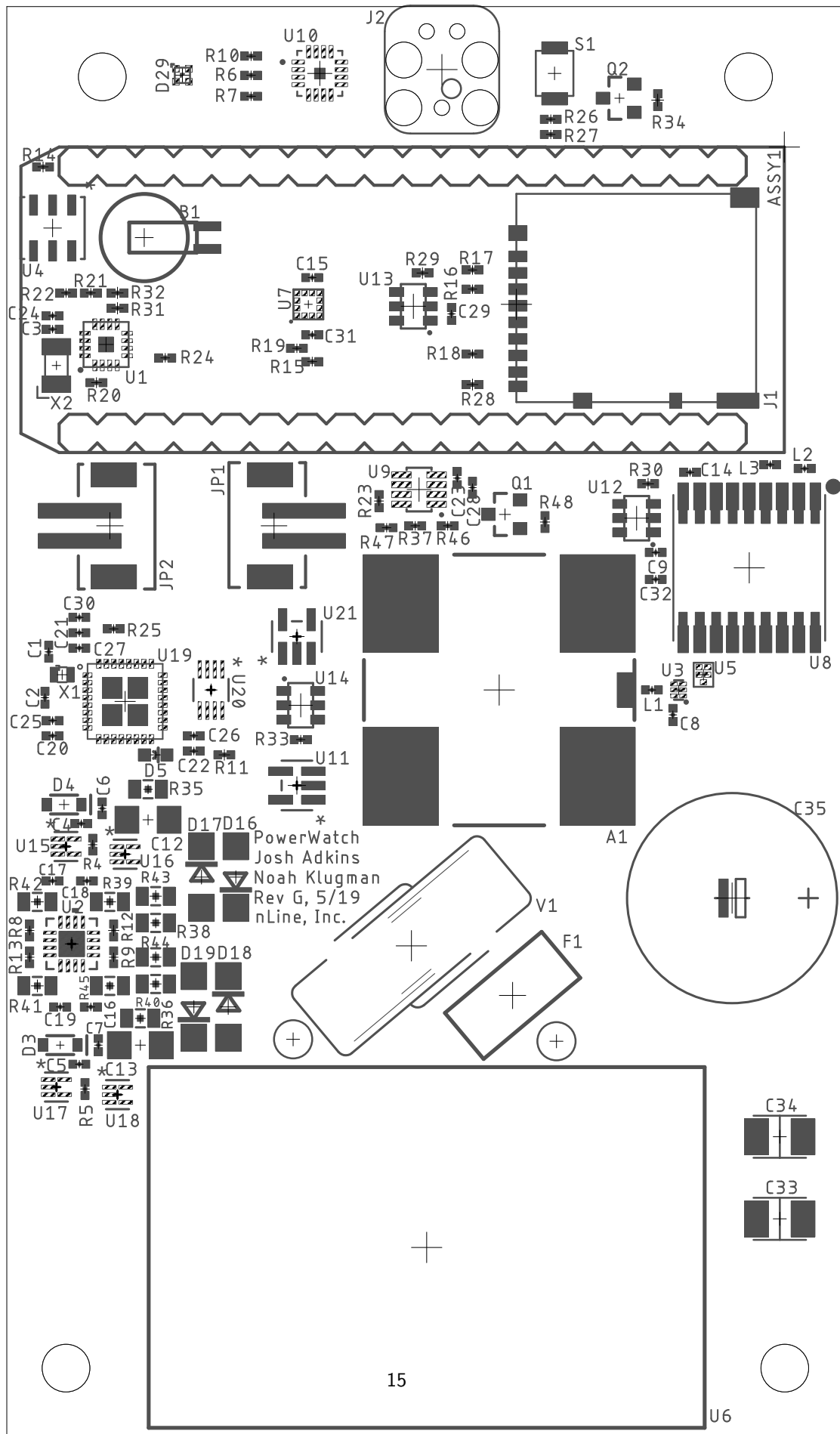
Layer 3 Copper



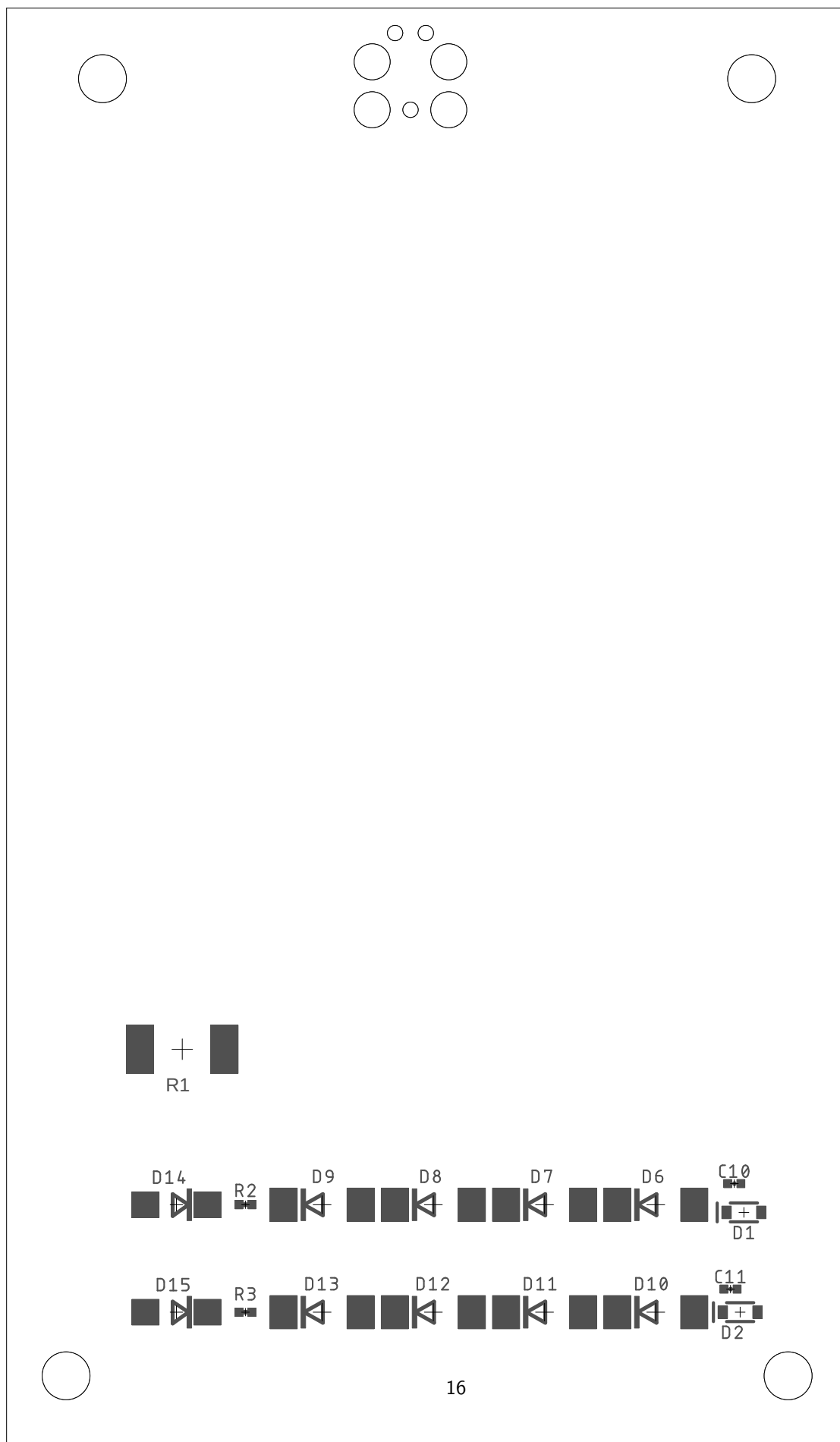
Bottom Copper Layer

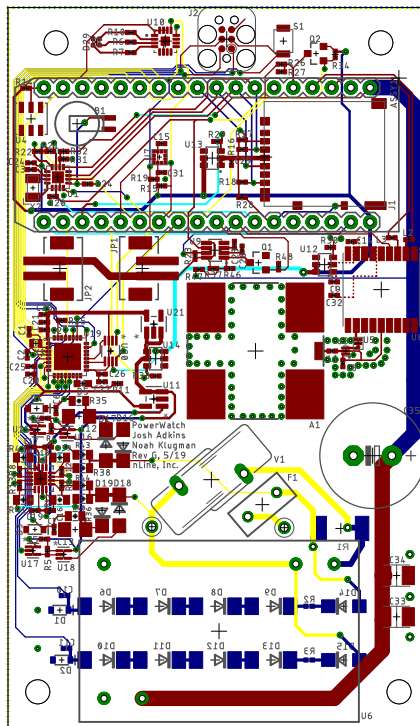


Top Paste Layer with Silkscreen

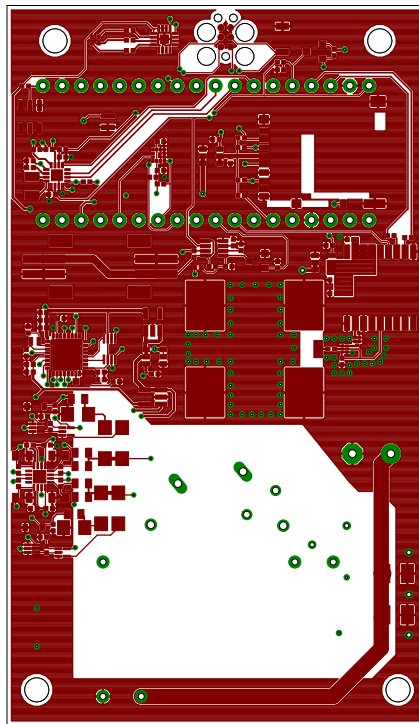


Bottom Paste Layer with Silkscreen

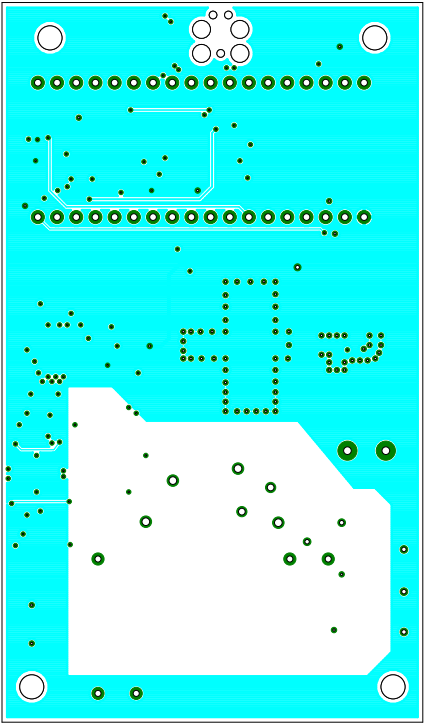




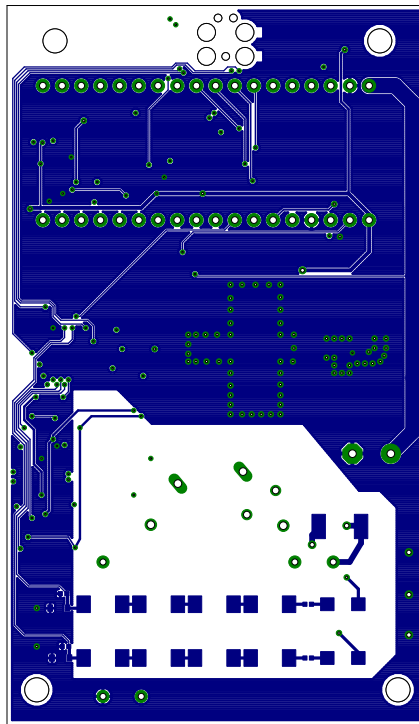
Top Layer 1:1 Scale







Bottom Copper Layer 1:1 Scale



plugwatch

Qty	Value	Device	Package
2		M024UCON-15767	JST-2-SMD-VERT
1		MS518SE	MS518SE-FL35E
9	0.1uF	CAPACITOR0402_CAP	0402_CAP
1	0.82uF	CAPACITOR0402_CAP	0402_CAP
1	1	R-US_R2512	R2512
2	1.00k	RESISTOR0402_RES	0402_RES
2	1.69k	RESISTOR0402_RES	0402_RES
2	10	RESISTOR0402_RES	0402_RES
6	1000Vr	DIODE-DO214AC	DO214AC
7	100k	RESISTOR0402_RES	0402_RES
2	100pF	CAPACITOR0402_CAP	0402_CAP
2	100uF	CAPACITOR1210_CAP	1210_CAP
1	10k	RESISTOR0402_RES	0402_RES
10	10k	RESISTOR0402_RES	0402_RES
2	10nF	CAP1206	1206
4	10nF	CAPACITOR0402_CAP	0402_CAP
2	10uF	CAPACITOR0402_CAP	0402_CAP
3	1M	RESISTOR0402_RES	0402_RES
2	1k	FERRITE_BEAD0402	0402_CAP
2	1nF	CAPACITOR0402_CAP	0402_CAP
4	1uF	CAPACITOR0402_CAP	0402_CAP
1	2.2uF	CAPACITOR0402_CAP	0402_CAP
1	2000uF	CPOL-USE5-13	E5-13
8	200V	DIODE-DO214AA	DO214AA
2	3.74k	RESISTOR0402_RES	0402_RES
1	300VAC - 500ma	MICRO_FUSE500MA_350VAC	MIRCRO_FUSE_5MM
1	34k	RESISTOR0402_RES	0402_RES
4	3V	DIODE-ZENER-MM3Z3V3T1G	SOD-323
2	4.3pF	CAPACITOR0402_CAP	0402_CAP
2	4.7uF	CAPACITOR0402_CAP	0402_CAP
2	40.2	RESISTOR0402_RES	0402_RES
1	475	RESISTOR0402_RES	0402_RES
1	47pF	CAPACITOR0402_CAP	0402_CAP
1	5.1k	RESISTOR0402_RES	0402_RES
1	5.6n	INDUCTOR0402	0402_CAP
1	66.5k	RESISTOR0402_RES	0402_RES
1	750	RESISTOR0402_RES	0402_RES
2	806k	RESISTOR0805_RES	0805_RES
1	825k	RESISTOR0402_RES	0402_RES
8	953k	RESISTOR0805_RES	0805_RES
1	AB1815-T3	AB1815-T3	QFN-16-3MM
1	ABS05-32.768KHZ-T	ABS05-32.768KHZ-T	ABS05
1	ABS07-32.768KHZ-7-T	ABS07-32.768KHZ-7-T	2-SMD
1	ADA4096-4ACPZ-R7	ADA4096-4ACPZ-R7	CP_16_27
1	B3U-1000P	B3U-1000P	B3U-1000P
1	BGA725L6-ALT	BGA725L6-ALT	LNA-TSLP-6-2-ALT
1	DM3AT-SF-PEJM5	DM3AT-SF-PEJM5	DM3AT-SF-PEJM5
1	DS2401P+	DS2401P+	21-0382

plugwatch

1	ELECTRON	ELECTRON	ELECTRON_SINGLE-ROW
1	GPS-ANTENNA	GPS-ANTENNA	ANT1818B00BT1516S
1	IRM-03-5V	IRM-03-5V	IRM-03
1	LED0603	LED0603	LED-0603
1	LIS2DH12	LIS2DW12	LGA-12
1	MAX-M8	MAX-M8	MAX-M8
1	MAX67XXMAX6749MAX67XX	MAX67XXMAX6749MAX67XX	SOT-23-8
1	MAX7315ATET	MAX7315ATET	QFN50P300X300X80-17N
1	MOSFET-NCHANNELSMD	MOSFET-NCHANNELSMD	SOT23-3
1	NX3008PBK	NX3008PBK	SOT23-3
1	REF2030AIDDCR	REF2033AIDDCR	DDC5
1	S14K385	S14K385	S14K385
1	SAFFB1G56KB0F0A	FILTERS	QCS5I
3	SIP32510	SIP32510	TSOT23-6
1	SML-LX0404SIUPGUSB	SML-LX0404SIUPGUSB	1MM_SQ_4PAD
4	SN74LVC1G86DRLRDRL5-L	SN74LVC1G86DRLRDRL5-L	DRL5-L
1	STM32L432KC	STM32L432KC	UQFN-32
1	TC2030-JLINK-L	TC2030-JLINK-L	TC2030-IDC
1	TCA9406DCUR	TCA9406DCUR	DCU8
2	TEST_POINT_0.040IN	TEST_POINT_0.040IN	TESTPOINT_0.040IN
1	TPS79330DBVR	TPS79330DBVR	DBV5

Parts

JP1,JP2

B1

C14,C15,C16,C17,C18,C19,C20,C21,C22

C23

R1

R8,R9

R10,R11

R2,R3

D14,D15,D16,D17,D18,D19

R28,R29,R30,R31,R32,R33,R34

C4,C5

C33,C34

R25

R15,R16,R17,R18,R19,R20,R21,R22,R23,R24

C12,C13

C8,C9,C10,C11

C31,C32

R46,R47,R48

L2,L3

C6,C7

C24,C25,C26,C27

C28

C35

D6,D7,D8,D9,D10,D11,D12,D13

R12,R13

F1

R26

D1,D2,D3,D4

C1,C2

C29,C30

R4,R5

R6

C3

R14

L1

R27

R7

R35,R36

R37

R38,R39,R40,R41,R42,R43,R44,R45

U1

X1

X2

U2

S1

U3

J1

U4

plugwatch

ASSY1

A1

U6

D5

U7

U8

U9

U10

Q1

Q2

U11

V1

U5

U12,U13,U14

D29

U15,U16,U17,U18

U19

J2

U20

TP1,TP2

U21

plugwatch

Description

Header 2

A small, low leakage rechargeable battery for RTC backup

SMD Capacitor

SMD Capacitor

RESISTOR, American symbol

Resistor

Resistor

Resistor

DIODE

Resistor

SMD Capacitor

SMD Capacitor

Resistor

Resistor

Capacitor

SMD Capacitor

SMD Capacitor

Resistor

SMD Capacitor

SMD Capacitor

SMD Capacitor

POLARIZED CAPACITOR, American symbol

DIODE

Resistor

A 5mm AC micro fuse package

Resistor

Zener Diode

SMD Capacitor

SMD Capacitor

Resistor

Resistor

SMD Capacitor

Resistor

A very specific inductor

Resistor

Resistor

Resistor

Resistor

Resistor

Ultra-low current RTC. 55nA quiescent @ 3V. 1.5-3.6V input.

32.768kHz Crystal

32.768kHz Crystal

Switch

CONN MICRO SD R/A PUSH-PUSH SMD

A one wire serial number chip.

plugwatch

Actually two 18 position headers, but it's placed as a single unit in the CAD software.

A 5V 3W board mount power supply

LED

ultra low power 3 axis accelerometer

A simple watchdog timer with adjustable timeouts and reset time

Generic NMOS footprint

MOSFET - P Channel

VARISTOR

Load switch, slew rate controlled. By Vishay

1mm² RGB LED

Simple STM32 Cortex M4. Features include a fast 32bit timer, 2 spi, 2 i2c, 2usart, hardware aes and more.

0.040in Test Point

DESCRIPTION

CONN HEADER PH TOP 2POS 2MM SMD

CAP CER 0.1UF 10V X5R 0402
CAP CER 0.82UF 10V X5R 0402
RES SMD 1 OHM 5% 2W 2512
RES SMD 1K OHM 0.1% 1/16W 0402
RES SMD 1.69K OHM 1% 1/16W 0402
RES SMD 10 OHM 1% 1/16W 0402
DIODE GEN PURP 1KV 1A SMA
RES SMD 100K OHM 1% 1/16W 0402
CAP CER 100PF 50V C0G/NPO 0402
CAP CER 100UF 6.3V X7S 1210
RES SMD 10K OHM 1% 1/16W 0402
RES SMD 10K OHM 1% 1/16W 0402
CAP CER 10000PF 630V X7R 1206
CAP CER 10000PF 16V X7R 0402
CAP CER 10UF 6.3V X5R 0402
RES 1M OHM 1% 1/16W 0402
FERRITE BEAD 1 KOHM 0402 1LN
CAP CER 1000PF 50V X7R 0402
CAP CER 1UF 10V X7S 0402

CAP ALUM 2000UF 20% 6.3V T/H
DIODE ZENER 200V 3W DO214AA
RES SMD 3.74KOHM 0.1% 1/16W 0402
FUSE BRD MNT 500MA 350VAC 100VDC
RES SMD 34K OHM 1% 1/10W 0402
DIODE ZENER 3V 300MW SOD323
CAP CER 4.3PF 50V C0G/NP0 0402
CAP CER 4.7UF 6.3V X5R 0402
RES 40.2 OHM 1% 1/16W 0402
RES 475 OHM 1% 1/16W 0402
CAP CER 47PF 100V C0G/NP0 0402
RES SMD 5.1K OHM 1% 1/10W 0402
FIXED IND 5.6NH 1.77A 40 MOHM
RES SMD 66.5K OHM 1% 1/16W 0402
RES SMD 750 OHM 1% 1/10W 0402
RES SMD 806K OHM 1% 1/8W 0805
RES SMD 825K OHM 1% 1/10W 0402
RES SMD 953K OHM 0.1% 1/8W 0805

IC OPAMP GP 4 CIRCUIT 16LFCSP

IC AMP MMIC RF LNA 20DB TSLP-6
CONN MICRO SD CARD PUSH-PUSH R/A

plugwatch

18 Position header
PATCH ANT GPS/GLO CP SMD

LED RED DIFFUSED 1608 SMD

IC RECEIVER GPS/GNSS 18LCC

IC I/O EXPANDER I2C 8B 16TQFN
MOSFET N-CH 60V 115MA SOT23-3

IC VREF SERIES 1.5V/3V 5SOT
VARISTOR 620V 5KA DISC 14MM
FILTER SAW 1.575GHZ 5SMD

IC GATE XOR 1CH 2-INP SOT5

IC TRNSLTR BIDIRECTIONAL US8
7cm, 18AWG wire with 4mm stripped on each end. Attach to bottom of board. Ask for clarification.
IC REG LINEAR 3V 200MA SOT23-5

plugwatch

DIGI-KEY_PART_NUMBER

plugwatch

MAX7315ATE+-ND

plugwatch

DIGI-KEY_PURCHASE_URL

plugwatch

https://www.digikey.com/product-detail/en/maxim-integrated/MAX7315ATE-/MAX7315ATE--ND/1513522?utm_source=snaped

plugwatch

DIGIKEY	MANUFACTURER	MANUFACTURER_PART_NUMBER
455-1734-1-ND	JST Sales America Inc.	
728-1054-ND	Seiko	
311-1336-1-ND	Yageo	
311-3789-1-ND	Yageo	
CRM2512-JW-1R0ELFCT-ND	Bourns Inc.	
YAG2306CT-ND	Yageo	
YAG3044CT-ND	Yageo	
311-10.0LRCT-ND	Yageo	
S1M-FDICT-ND	Diodes Incorporated	
311-100KLRCT-ND	Yageo	
311-1024-1-ND	Yageo	
490-10530-1-ND	Murata Electronics North America	
RMCF0402FT10K0CT-ND	Stackpole Electronics Inc.	
RMCF0402FT10K0CT-ND	Stackpole Electronics Inc.	
445-2291-1-ND	TDK Corporation	
490-1313-1-ND	Murata Electronics North America	
490-13211-1-ND	Murata Electronics North America	
RMCF0402FT1M00CT-ND	Stackpole Electronics Inc	
490-4003-1-ND	Murata	
490-6350-1-ND	Murata Electronics North America	
490-13409-1-ND	Murata Electronics North America	
490-12696-1-ND	Murata Electronics North America	
P122284TB-ND	Panasonic Electronic Components	
1PGSMB5956R5GCT-ND	Taiwan Semiconductor Corporation	
P3.74KDCCT-ND	Panasonic Electronic Components	
507-1903-ND	Bel Fuse Inc	
P34.0KLCT-ND	Panasonic Electronic Components	
MM3Z3V0ST1GOSCT-ND	ON Semiconductor	
490-3099-1-ND	Murata Electronics North America	
445-5947-1-ND	TDK Corporation	
RMCF0402FT40R2CT-ND	Stackpole Electronics Inc	
RMCF0402FT475RCT-ND	Stackpole Electronics Inc	
490-7307-1-ND	Murata Electronics North America	
P5.10KLCT-ND	Panasonic Electronic Components	
490-11766-1-ND	Murata	
YAG3209CT-ND	Yageo	
P750LCT-ND	Panasonic Electronic Components	
311-806KCRCT-ND	Yageo	
P825KLCT-ND	Panasonic Electronic Components	
P953KDACT-ND	Panasonic Electronic Components	
535-11936-1-ND	Abrakon	
535-11899-1-ND	Abrakon	
535-9543-1-ND	ABRACON	
ADA4096-4ACPZ-R7CT-ND	Analog Devices Inc.	ADA40964ACPZR7
SW1020CT-ND	Omron	
BGA725L6E6327FTSA1CT-ND	Infineon	
HR1964CT-ND	Hirose Electric Co Ltd	
DS2401P+-ND	Maxim Integrated	

plugwatch

S7051-ND,S7051-ND	Sullins	
311-1531-ND	Yageo	
1866-3020-ND	Mean Well USA	
SML-D12U1WT86CT-ND	Rohm Semiconductor	
497-14851-1-ND	STMicroelectronics	
672-1003-1-ND	u-blox	
MAX6749KA+TCT-ND	Maxim Integrated	
MAX7315ATE+-ND	Maxim Integrated	
2N7002-FDICT-ND	Diodes Incorporated	
568-10499-1-ND	Nexperia	
296-47351-1-ND	Texas Instruments	REF2030AIDDCR
495-5945-ND	EPCOS (TDK)	
587-5642-1-ND	Taiyo Yuden	
SIP32510DT-T1-GE3CT-ND	Vishay	
67-2125-1-ND	Lumex Opto	
296-18613-1-ND	Texas Instruments	SN74LVC1G86DRLR
497-16578-ND	STMicroelectronics	
DNP	DNP	
296-28109-1-ND	Texas Instruments	TCA9406DCUR
5001K-ND		
296-12159-1-ND	Texas Instruments	TPS79330DBVR

plugwatch

MF	MOUSER	MP	MPN	NEWARK
			B2B-PH-SM4-TB(LF)(SN)	
			MS518SE-FL35E	
			CC0402KRX5R6BB104	
			CC0402KRX5R6BB824	
			CRM2512-JW-1R0ELF	
			RT0402BRE071KL	
			RC0402FR-071K69L	
			RC0402FR-0710RL	
			S1M-13-F	
			RC0402FR-07100KL	
			CC0402JRNPO9BN101	
			GRM32EC70J107ME15L	
			RMCF0402FT10K0	
			RMCF0402FT10K0	
			C3216X7R2J103K115AA	
			GRM155R71C103KA01D	
			GRJ155R60J106ME11D	
			RMCF0402FT1M00	
			BLM15HD102SN1D	
			GRM155R71H102KA01J	
			GCM155C71A105KE38D	
			GRM155C70J225KE11D	
			EEU-FS0J202B	
			1PGSMB5956 R5G	
			ERA-2AEB3741X	
			0697H0500-01	
			ERJ-2RKF3402X	
			MM3Z3V0ST1G	
			GJM1555C1H4R3CB01D	
			C1005X5R0J475K050BC	
			RMCF0402FT40R2	
			RMCF0402FT475R	
			GRM1555C2A470JA01D	
			ERJ-2RKF5101X	
			LQW15AN5N6B80D	
			RC0402FR-0766K5L	
			ERJ-2RKF7500X	
			RC0805FR-07806KL	
			ERJ-2RKF8253X	
			ERA-6AEB9533V	
			AB1815-T3	
			ABS05-32.768KHZ-T	
			ABS07-32.768KHZ-7-T	
			ADA4096-4ACPZ-R7	
			B3U-1000P	
			BGA725L6E6327FTSA1	
			DM3AT-SF-PEJM5	
			DS2401P+	

plugwatch

		PPPC181LFBN-RC	
		ANT1818B00BT1516S	
		IRM-03-5	
		SML-D12U1WT86	
511-LIS2DH12TR		LIS2DH12TR	
		MAX-M8Q-0	
		MAX6749KA+T	
Maxim Integrated	MAX7315ATE+	MAX7315ATE+	
		2N7002-7-F	
771-NX3008PBK,215		NX3008PBK,215	74T4665
		REF2030AIDDCR	
		B72214S2381K101	
		F6QA1G575H2JF-J	
		SIP32510DT-T1-GE3	
		SML-LX0404SIUPGUSB	
		SN74LVC1G86DRLR	
		STM32L432KCU6	
		DNP	
		TCA9406DCUR	
		TPS79330DBVR	

plugwatch

PACKAGE	PROD_ID	SPICEPREFIX	VALUE	VENDOR
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	C			
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	DIO-11284		3.3V	
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Analog Devices Inc

	X			
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plugwatch

TQFN-16 Maxim

Texas Instruments

Texas Instruments

Texas Instruments

Texas Instruments