

1

2

3

4

A

A

B

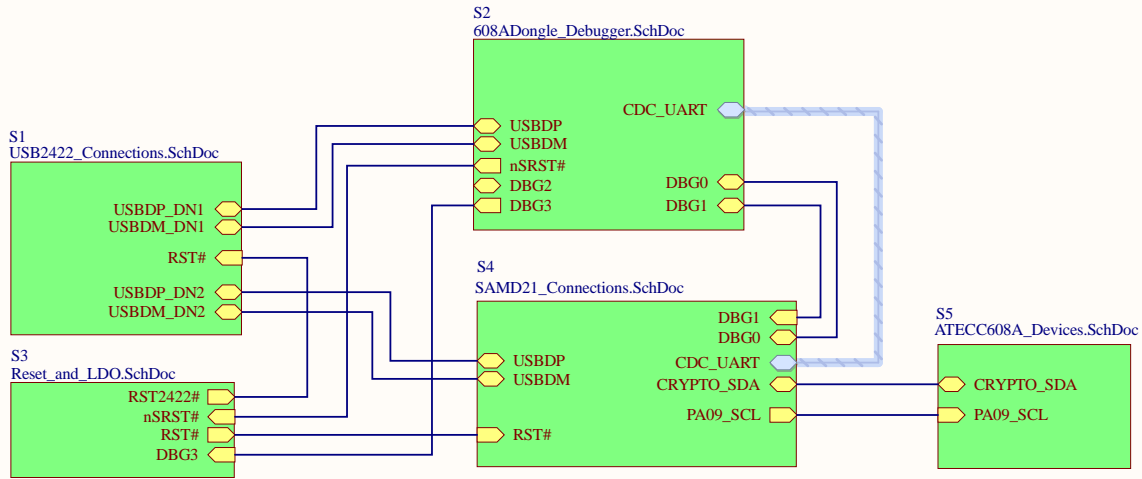
B

C


C

D

D




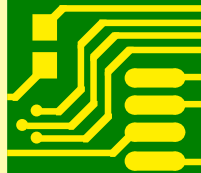
LBL1


Product number/revision
Serial number

Label PCBA


Place PCB component here






 A08-3036
 ATECC608AUSB PCB

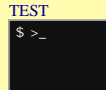
Place PCBA, TEST, TESTDOC documentation components here




 PCBADOC
 A12-1411



 TESTDOC
 A12-1412



 TEST
 A11-0464

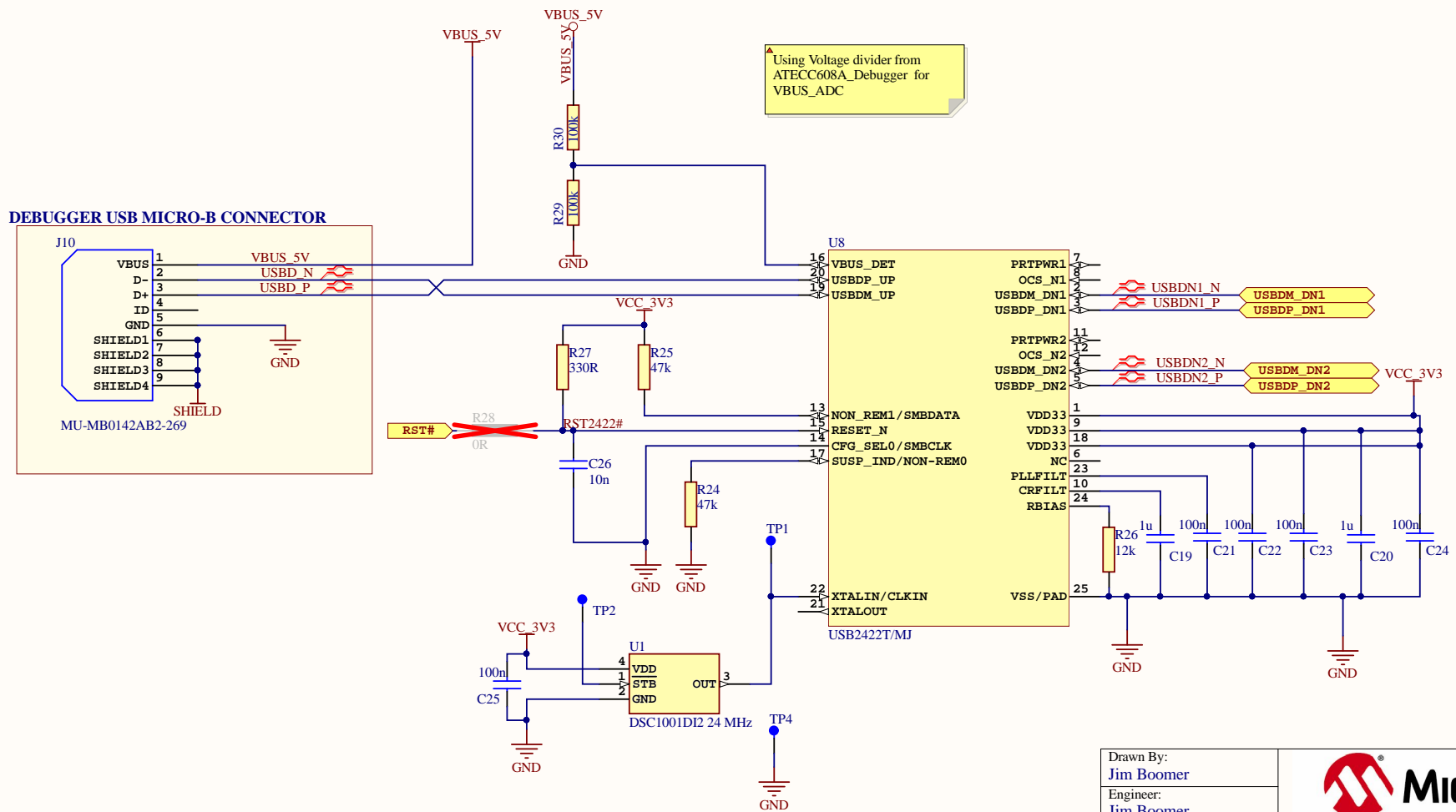
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|----------------------------------------------|---------------------------------------------------------------------------------------|-------------------------|
| Drawn By: Jim Boomer |  | |
| Engineer: Jim Boomer | | |
| Project Title ATECC608A USB Dongle | | |
| Sheet Title Top Level Schematic | | |
| Size | PCB Assembly Number: A09-3311 | PCBA Revision: 4 |
| File: 608ADongle_TopLevel.SchDoc | PCB Number: A08-3036 | PCB Revision: 4 |
| | | Date: 7/22/2019 |
| | | Page: 1 of 6 |

1

2

3

4



Drawn By:
Jim Boomer
Engineer:
Jim Boomer



Project Title
ATECC608A USB Dongle

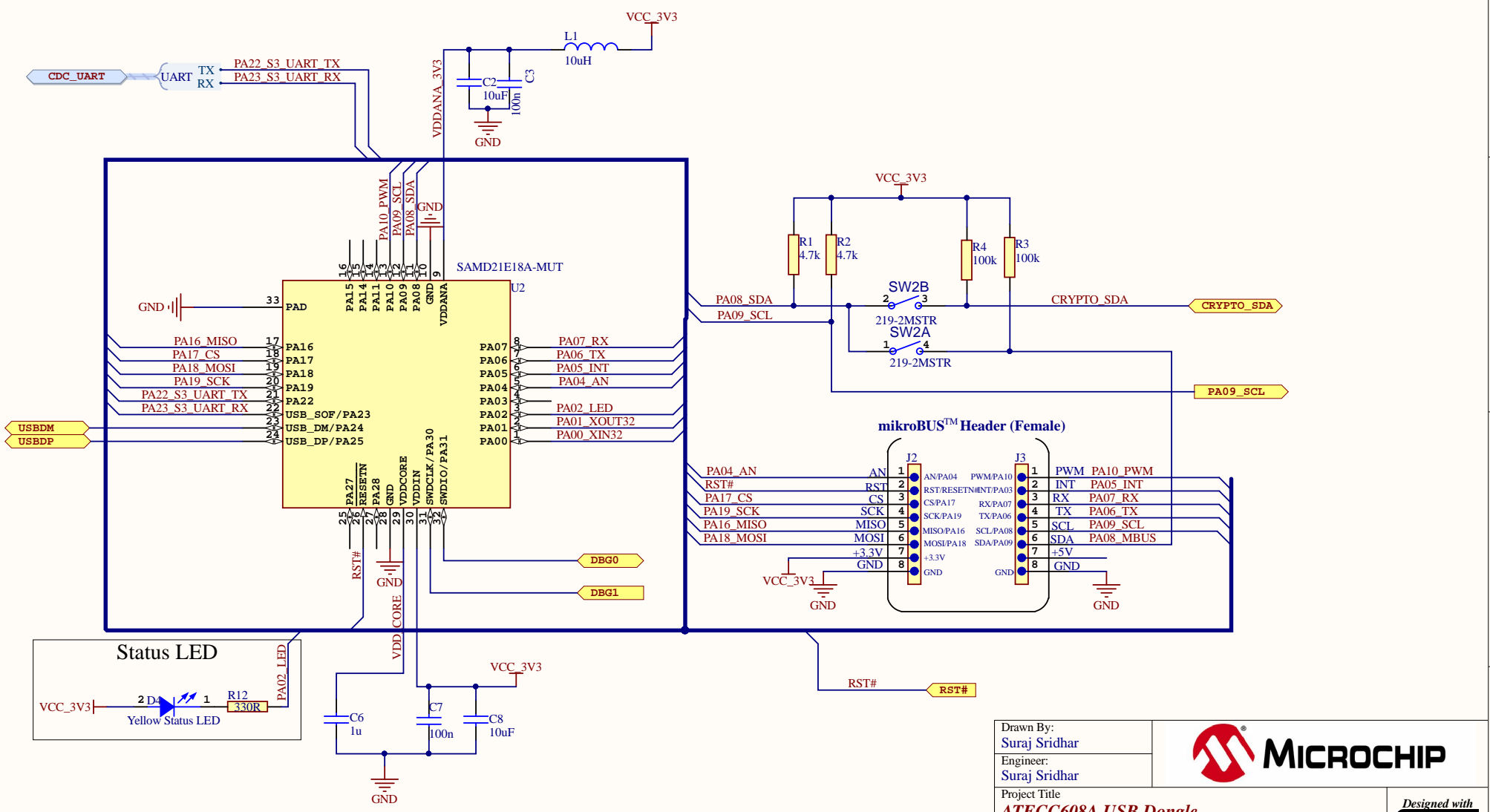


Sheet Title
USB2422 Connections

| | | |
|---------|-------------------------------|------------------|
| Size A4 | PCB Assembly Number: A09-3311 | PCBA Revision: 4 |
| | PCB Number: A08-3036 | PCB Revision: 4 |

Date: 7/22/2019
Page: 2 of 6

File: USB2422_Connections.SchDoc

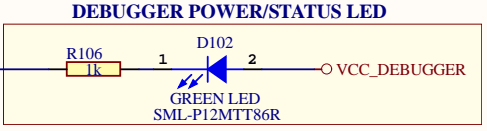
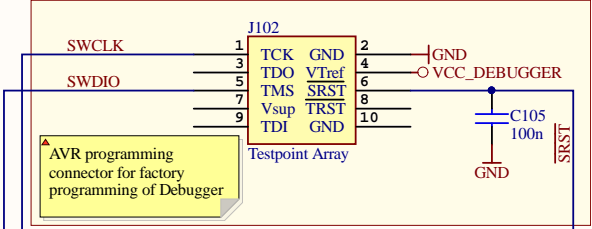


Drawn By:
Suraj Sridhar
Engineer:
Suraj Sridhar

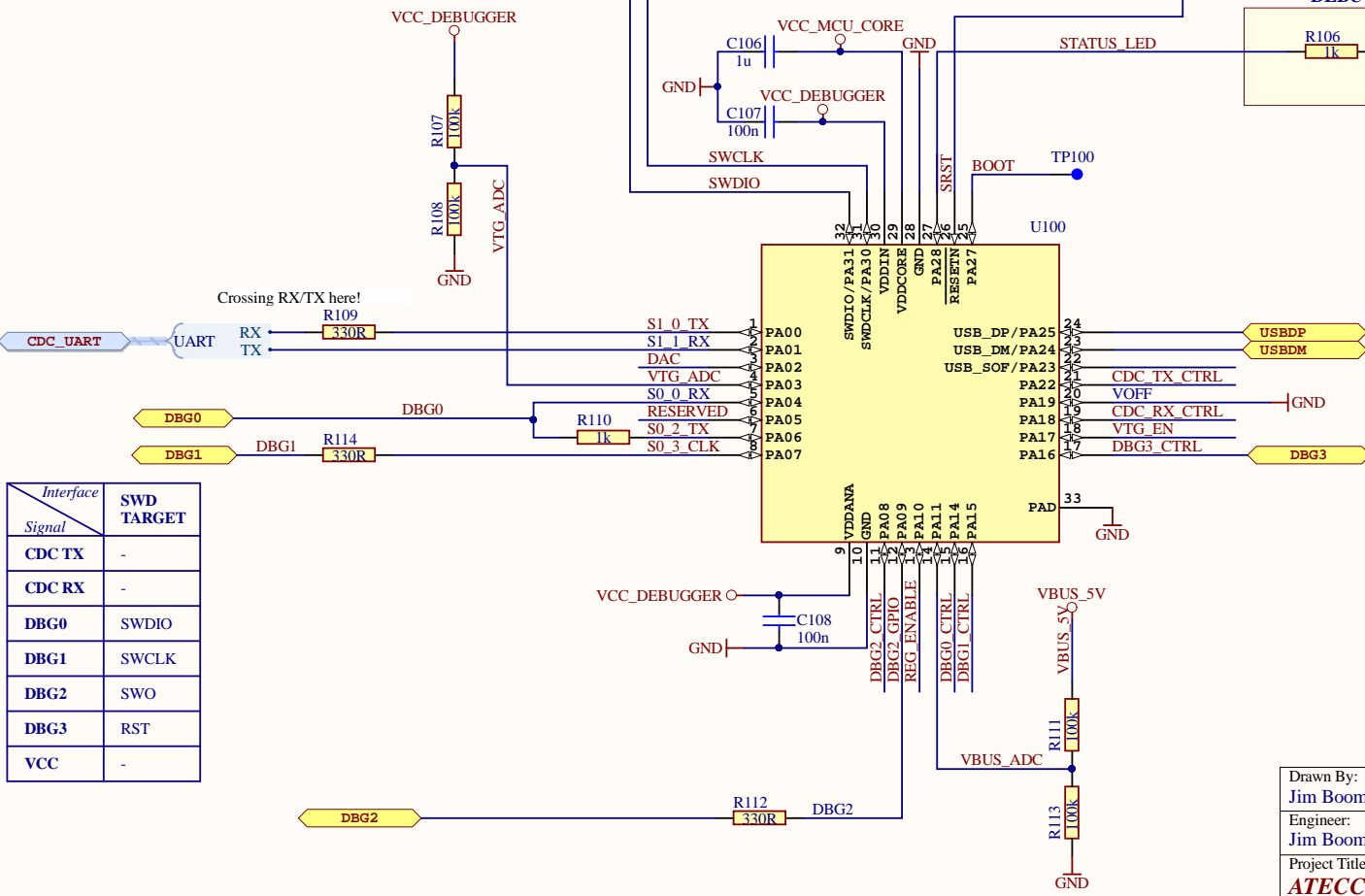
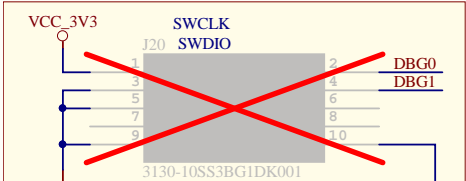


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|----------------------------------------------|----------------------------------|---------------------|----------------------------------------------|
| Project Title ATECC608A USB Dongle | | | Designed with Altium Altium.com |
| Sheet Title SAMD21 Connections | | | |
| Size A4 | PCB Assembly Number: A09-3311 | PCBA Revision: 4 | Date: 7/22/2019 |
| | PCB Number: A08-3036 | PCB Revision: 4 | |
| File: SAMD21_Connections.SchDoc | | | Page: 3 of 6 |

DEBUGGER TESTPOINT



SWD Interface - Direct Programming of SAMD21 Host



| Interface Signal | SWD TARGET |
|------------------|------------|
| CDC TX | - |
| CDC RX | - |
| DBG0 | SWDIO |
| DBG1 | SWCLK |
| DBG2 | SWO |
| DBG3 | RST |
| VCC | - |

Drawn By:
Jim Boomer
Engineer:
Jim Boomer



Project Title
ATECC608A USB Dongle

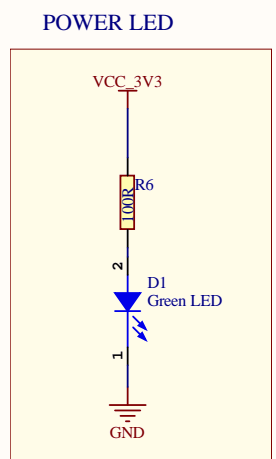
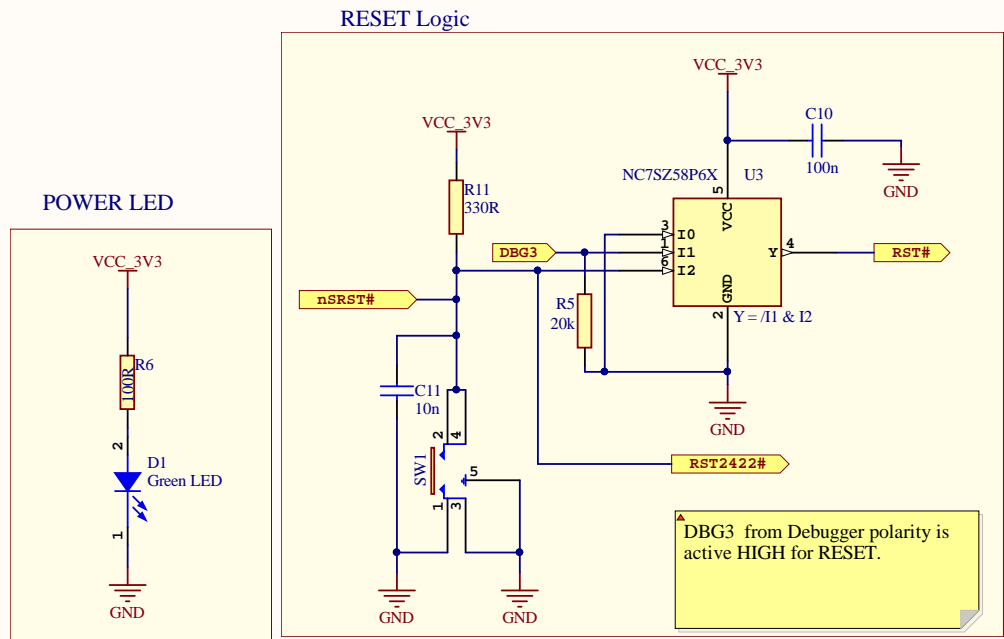
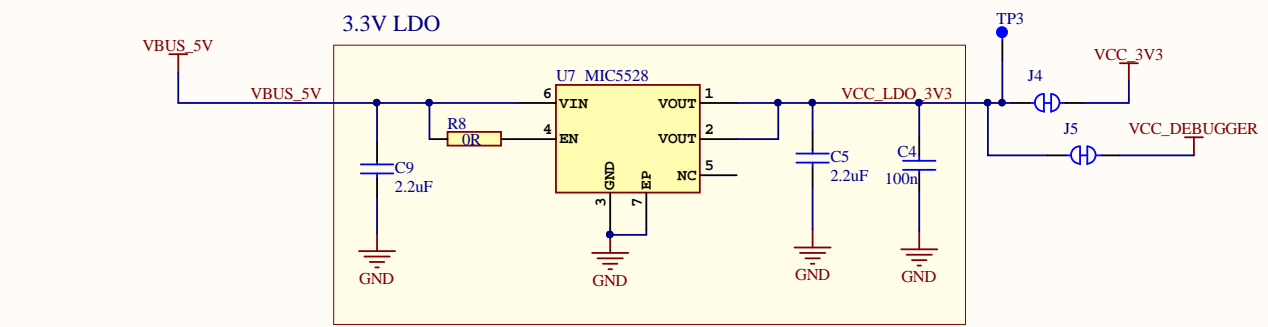


Sheet Title
608A USB Dongle Debugger

Size A4 PCB Assembly Number: A09-3311 PCB Revision: 4
PCB Number: A08-3036 PCB Revision: 4

Date: 7/22/2019
Page: 4 of 6

File: 608ADongle_Debugger.SchDoc



Drawn By:
Suraj Sridhar
Engineer:
Suraj Sridhar



Project Title
ATECC608A USB Dongle



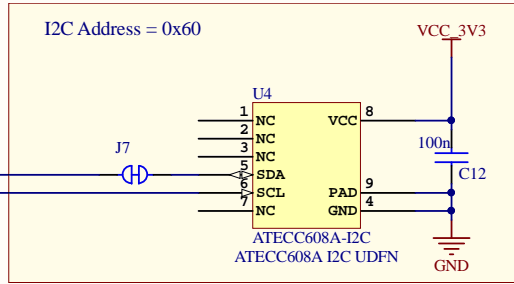
Sheet Title
Reset and LDO

| | | |
|---------|-------------------------------|------------------|
| Size A4 | PCB Assembly Number: A09-3311 | PCBA Revision: 4 |
| | PCB Number: A08-3036 | PCB Revision: 4 |

Date: 7/22/2019
Page: 5 of 6

File: Reset_and_LDO.SchDoc

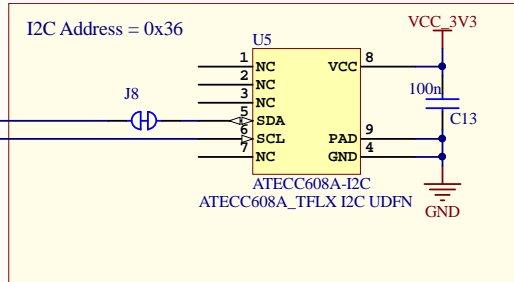
ATECC608A - TrustCUSTOM



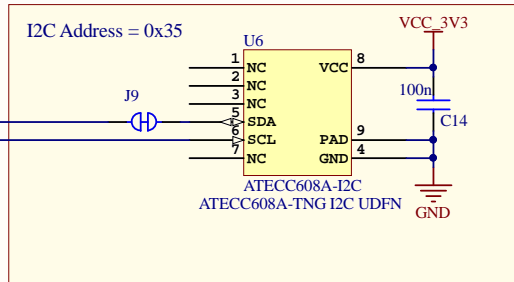
CRYPTO_SDA

PA09_SCL

ATECC608A - TrustFLEX



ATECC608A - Trust&GO



Note: All I2C Addresses are 7-bit Values

Drawn By:
Jim Boomer

Engineer:
Jim Boomer



Project Title
ATECC608A USB Dongle

Sheet Title
ATECC608A Variants

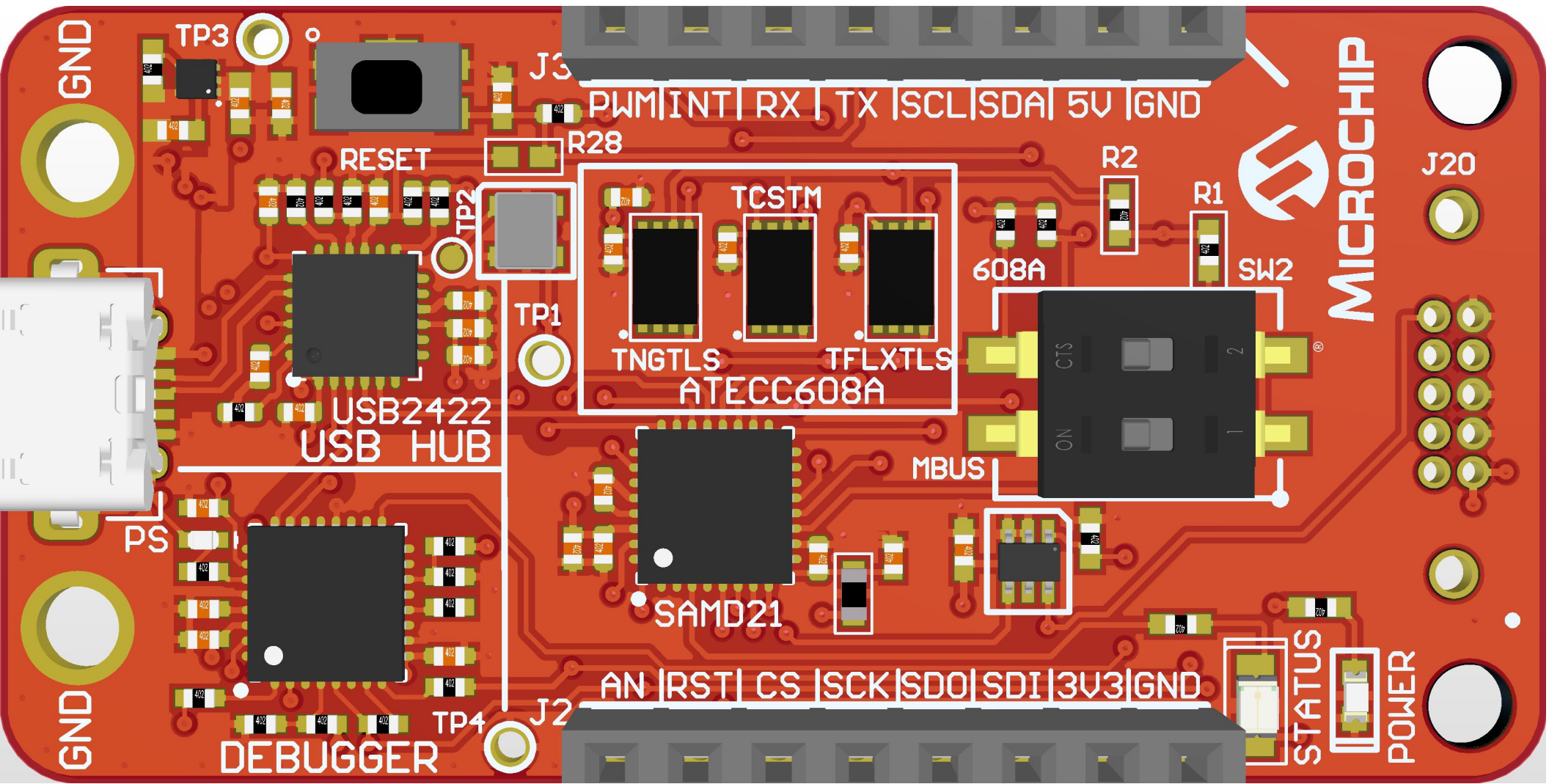


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|---------|-------------------------------|------------------|
| Size A4 | PCB Assembly Number: A09-3311 | PCBA Revision: 4 |
| | PCB Number: A08-3036 | PCB Revision: 4 |

Date: 7/22/2019

File: ATECC608A_Devices.SchDoc

Page: 6 of 6



GND

TP3

RESET

J3

PWM|INT|RX|TX|SCL|SDA|5V|GND

R28

R2

R1

J20

MICROCHIP



USB2422
USB HUB

TP2

TP1

TCSTM
TNGTLS
ATECC608A
TFLXTLS

608A

SW2

CTS
ON
2
1

MBUS

SAMD21

GND

PS

DEBUGGER

TP4

J2

AN|RST|CS|SCK|SDO|SDI|3V3|GND

STATUS

POWER

GND

BOOT

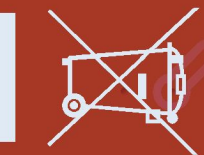
GND

DEBUG

J4

J5

UCC_3V3



CRYPTOAUTH
TRUST PLATFORM

PA10/PWM

AN/PA04

PA05/INT

RST#/RESETN#

PA07/RX

CS/PA17

PA06/TX

SCK/PA19

PA09/SCL

MISO/PA16

PA08/SDA

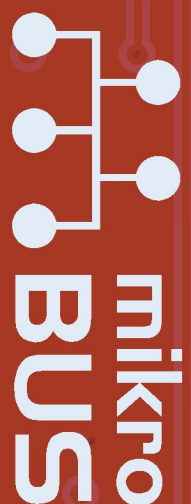
MOSI/PA18

+5V

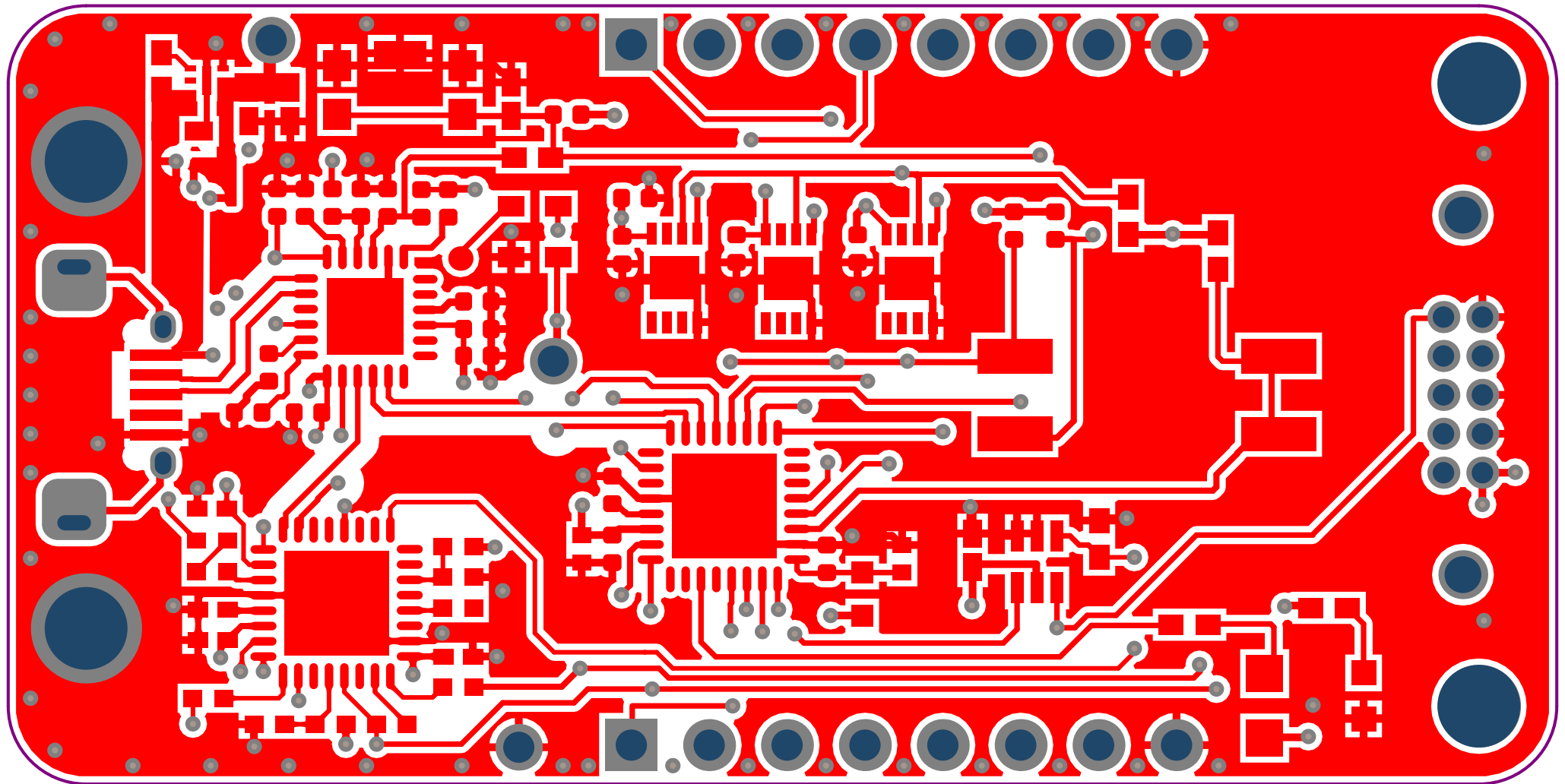
+3.3V

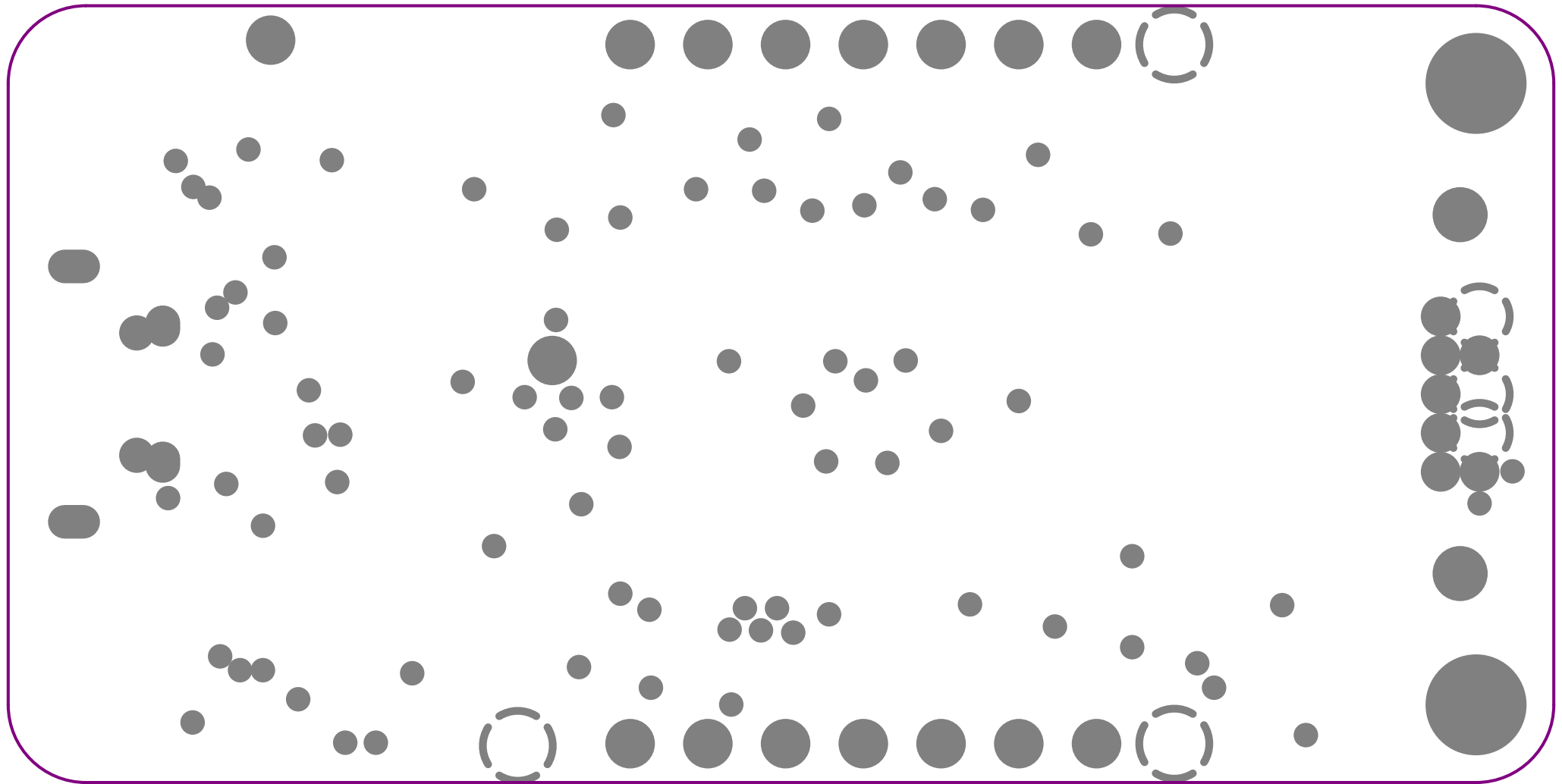
GND

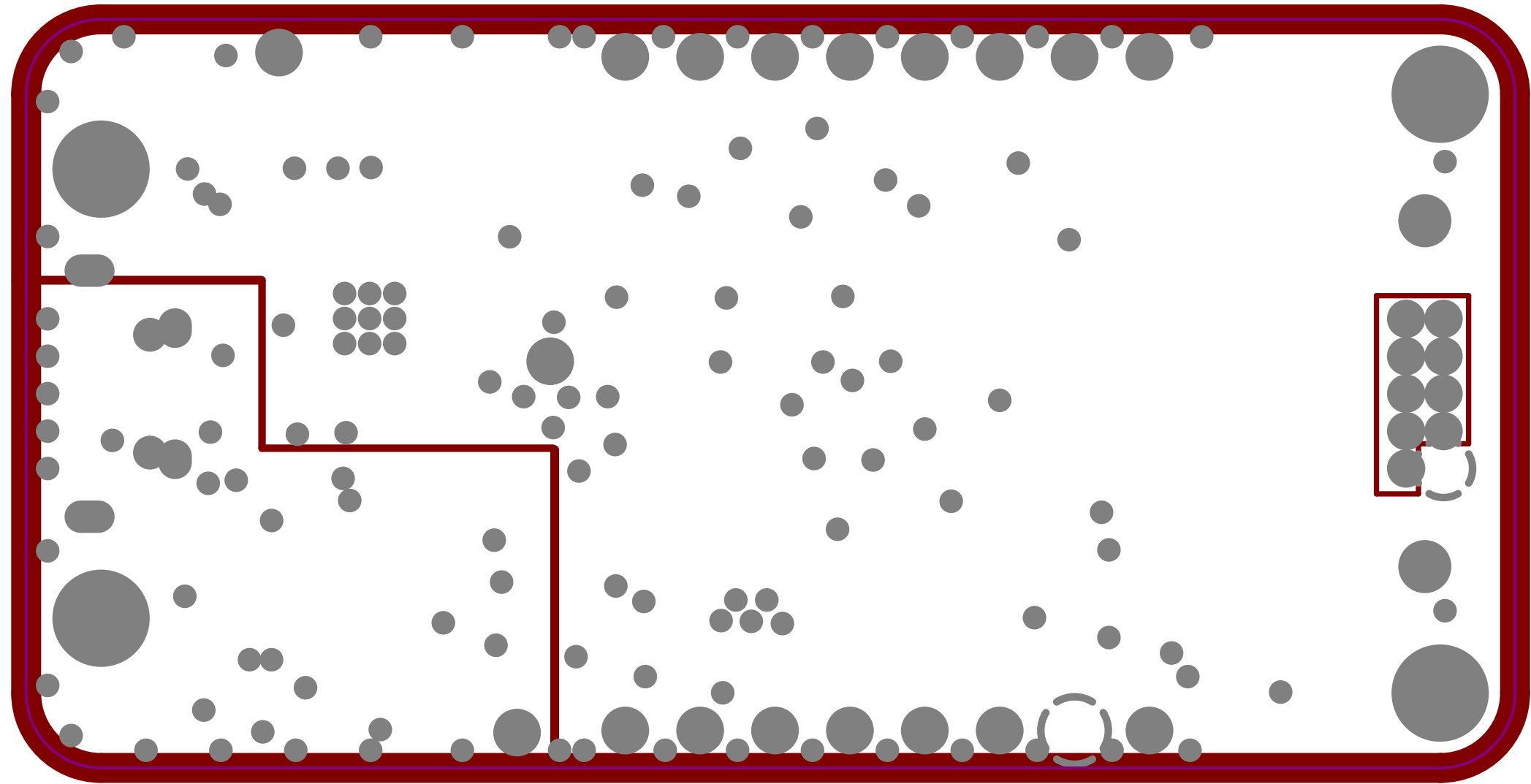
GND

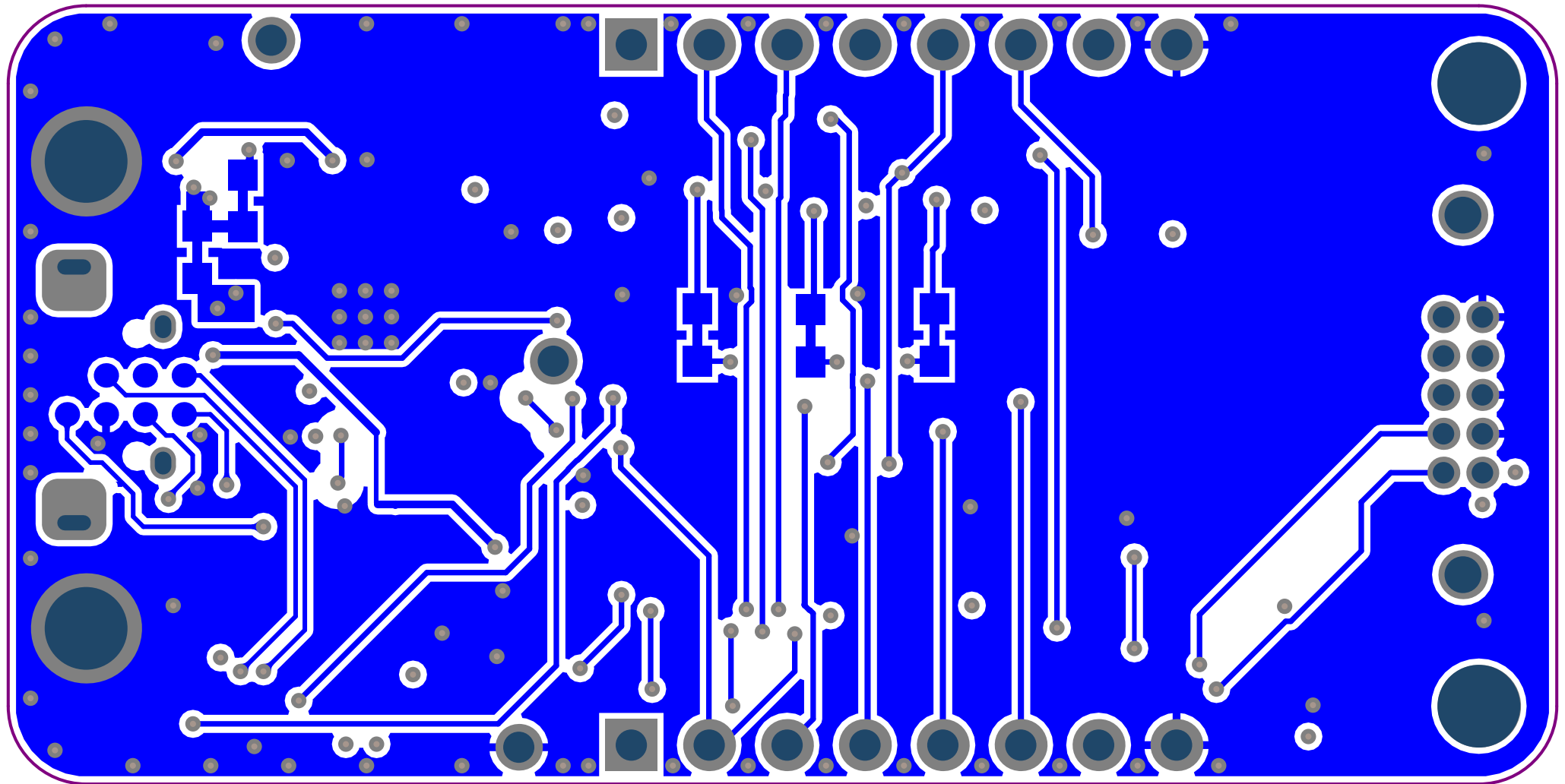


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A08-3036 REV4









GND

GND



R8 U7 C4 C5 C9



RESET

C22 R24 R30 R29 C26 R27 R25



C19 C20 C23

U8 R26 C24 USB2422 USB HUB

C105 D102 R106 C106 U100 C107

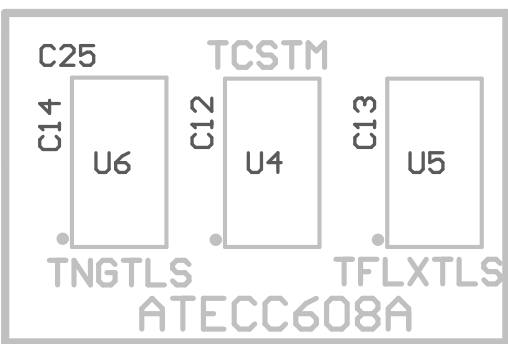
R109 R108 R107 R110 TP4

DEBUGGER

C11



U1



C6 C8 C7 U2 SAMD21



C2

AN RST CS SCK SDO SDI 3V3 GND



J3



PWM INT RX TX SCL SDA 5V GND

R11 R28

C25 TCSTM U6 U4 U5 C14 C12 C13 TNGTLS TFLXTLS

R4 R3 608A



SW2

MBUS



R5

R12



STATUS



POWER

MICROCHIP



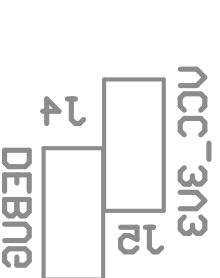
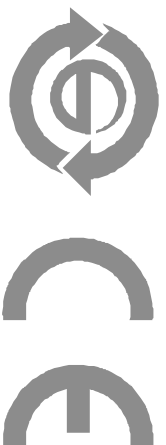
J20

J20

A08-3036 REV4
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PA0812DA MOS1PA18
PA0912CF 28 MIS01PA18
PA091TX 2CK1PA18
PA021RX 2CS1PA12
PA021INT 2 RST#1RESETIN#
PA101PWM AN1PA04



105

TP105
BOOT

TRUST PLATFORM
CRYPTOAUTH

GND

GND

Component list

Bill of Materials Fitted for Variant [STDBuild] of Project [608A dongle.PrjPcb] (No PCB Document Selected)

Source Data From: 608A dongle.PrjPcb
 Project: 608A dongle.PrjPcb
 Variant: STDBuild



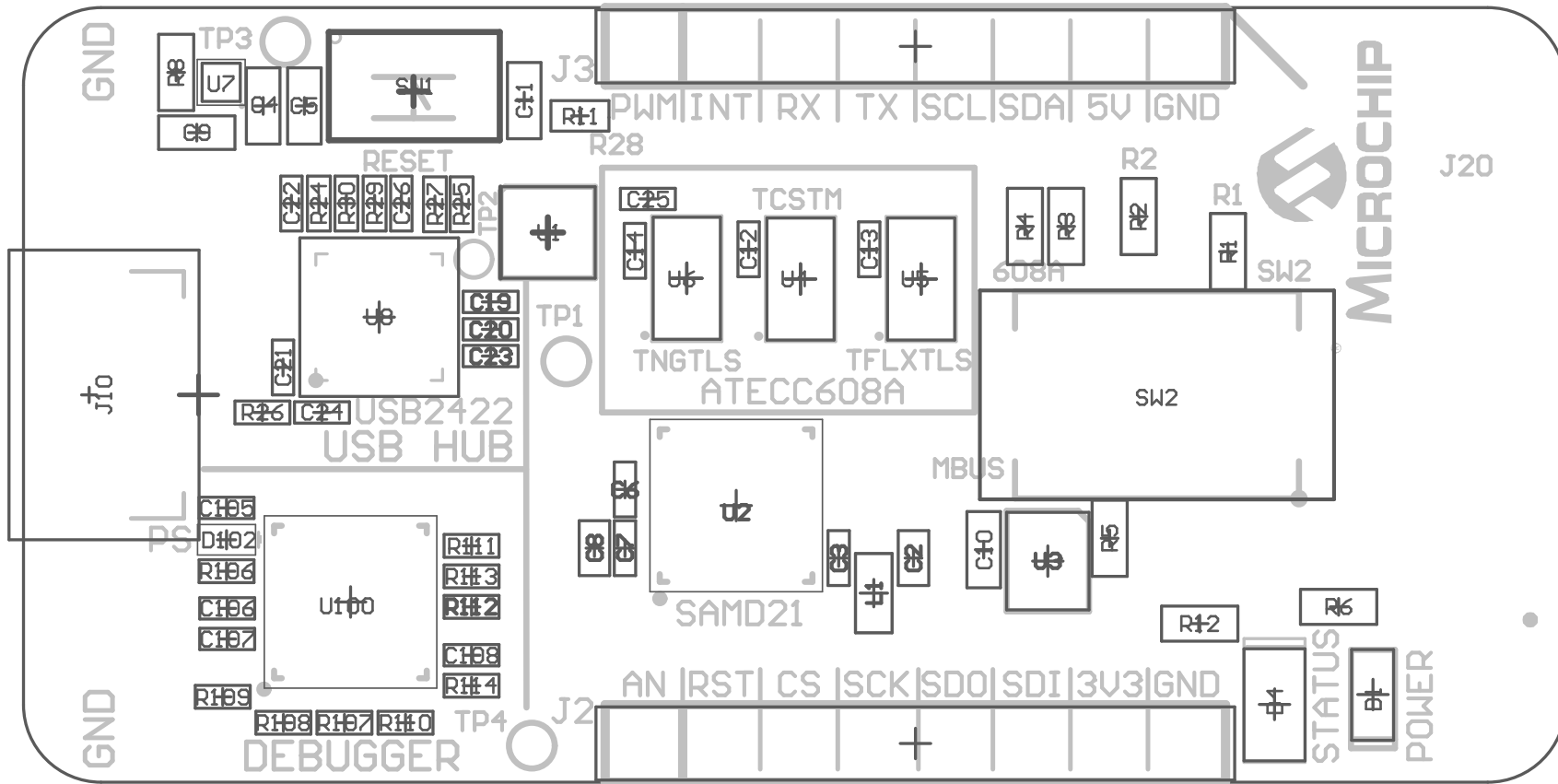
Report Date: 7/22/2019 4:04 PM
 Print Date: 7/22/2019 3:33:12 PM

| Fitted | Designator | Quantity | Value | Manufacturer | MPN | Description |
|------------|----------------------------------|----------|-------------------------|------------------------------------|----------------------|-----------------------------------------------------------------------------|
| Fitted | C2, C8 | 2 | 10uF | Murata | GRM155R60J106ME15 | Ceramic capacitor, SMD 0402, X5R, 6.3V, 20% |
| Fitted | C3, C7 | 2 | 100n | Kemet | C0402C104K4RACTU | Ceramic capacitor, SMD 0402, X7R, 16V, +/-10% |
| Fitted | C4, C10 | 2 | 100n | Kemet | C0402C104K4RACTU | Ceramic capacitor, SMD 0402, X7R, 16V, +/-10% |
| Fitted | C5, C9 | 2 | 2.2uF | Kemet | C0402C225M9PAC | Ceramic capacitor, SMD 0402, X5R, 6.3V, +/-20% |
| Fitted | C6, C19, C20, C106 | 4 | 1u | Kemet | C0402C105K9PAC | Ceramic capacitor, SMD 0402, X5R, 6.3V, +/-10% (de26942) |
| Fitted | C11 | 1 | 10n | YAGEO CORP | CC0402KRX7R8BB103 | Ceramic capacitor, SMD 0402, X7R, 25V, +/-10% |
| Fitted | C12, C13, C14, C21, C22, C23, | 11 | 100n | Kemet | C0402C104K4RACTU | Ceramic capacitor, SMD 0402, X7R, 16V, +/-10% |
| Fitted | C26 | 1 | 10n | YAGEO CORP | CC0402KRX7R8BB103 | Ceramic capacitor, SMD 0402, X7R, 25V, +/-10% |
| Fitted | D1 | 1 | Green LED | ROHM | SML-310MI T86N | LED, Green, 570nm, SMD 0603 |
| Fitted | D4 | 1 | | Everlight | 17-21UYC/S530-A3/T88 | LED, Yellow, Wave length=591nm, SMD 0805, |
| Fitted | D102 | 1 | GREEN LED | ROHM | SML-P12MI T86R | LED, SMD 0402, Green, Wave length=569nm, 2.1mcd @ (1mA, 1.9V)rohm |
| Fitted | J2, J3 | 2 | 2185-108SS0CYNP1 | WCON HARDWARE ELECTRONICS CO., LTD | 2185-108SS0CYNP1 | 1x8 receptacle pin header, 2.54mm pitch THM, PIP |
| Fitted | J10 | 1 | MU-MB0142AB2-269 | Allen Creations Corp. | MU-MB0142AB2-269 | USB micro AB, Surface mount signals and DIP shield |
| Fitted | L1 | 1 | | Murata | BLM18PG471SN1 | SMD RF inductor 0603, Z=470Ohm (@100MHz), Max R(dc)=0.20Ohm, Max current=1A |
| Fitted | LBL1 | 1 | Label PCBA | ACT Logimark AS | 505462 | PCBA identification label PP Top White Gloss |
| Fitted | PCB | 1 | ATECC608AUSB PCB | | | ATECC608AUSB PCB |
| Fitted | PCBADOC | 1 | ATECC608AUSB PCBA Files | | | ATECC608AUSB PCBA Documentation |
| Fitted | R1, R2 | 2 | 4.7k | Panasonic | ERJ2RKF4701X | Thick film resistor, SMD 0402, 1/16W, 1% |
| Fitted | R3, R4 | 2 | 100k | ASJ Holdings | CR10-1003-FK | Thick film resistor, SMD 0402, 1/16W, 1% |
| Fitted | R5 | 1 | 20k | | | Thick film resistor, SMD 0402, 1/16W, 1% |
| Fitted | R6 | 1 | 100R | ASJ | CR10-1000-FK | Thick film resistor, SMD 0402, 1/16W, 1% |
| Fitted | R8 | 1 | 0R | (n/a) | RMCF04022T0R00 | RES 0.0 OHM 1/16W 0402 SMD |
| Fitted | R11 | 1 | 330R | YAGEO CORP | RC0402FR-07330RL | Thick film resistor, SMD 0402, 1/16W, 1% |
| Fitted | R12 | 1 | 330R | ASJ | CR10-3300-FK | Thick film resistor, SMD 0402, 1/16W, 1% |
| Fitted | R24, R25 | 2 | 47k | KOA | RK73H1ET1P4702F | Thick film resistor, SMD 0402, 1/16W, 1% |
| Fitted | R26 | 1 | 12k | | | Thick film resistor, SMD 0402, 1/16W, 1% |
| Fitted | R27, R109, R112, R114 | 4 | 330R | YAGEO CORP | RC0402FR-07330RL | Thick film resistor, SMD 0402, 1/16W, 1% |
| Fitted | R29, R30, R107, R108, R111, R113 | 6 | 100k | ASJ | CR10-1003-FK | Thick film resistor, SMD 0402, 1/16W, 1% |
| Fitted | R106, R110 | 2 | 1k | ASJ | CR10-1001-FK | Thick film resistor, SMD 0402, 1/16W, 1% |
| Fitted | SW1 | 1 | | ITT cannon | KMR221G | Microminiature Tact Switch for SMT |
| Fitted | SW2 | 1 | 219-2MSTR | CTS | 219-2MSTR | 2 Pos DIP Switch 100 Mil Pitch Raised Actuator |
| Fitted | TEST | 1 | ATECC608AUSB Test | | | Fixture test for ATECC608AUSB |
| Fitted | TESTDOC | 1 | ATECC608AUSB Test | | | ATECC608AUSB Test Instructions |
| Fitted | U1 | 1 | DSC1001DI2 24 MHz | | | Standard Clock 2520 pkg MEMS OSCILLATOR, LOW POWER, 25PPM 024.0000MHz |
| Fitted | U2 | 1 | SAMD21E18A-MJT | Microchip | ATSAMD21E18A-MJT | Atmel 32-bit RISC MCU 32pin |
| Fitted | U3 | 1 | NC7S258P6X | Fairchild | NC7S258P6X_NL | Configurable 2-input logic gate |
| Fitted | U4 | 1 | ATECC608A I2C UDFN | MICROCHIP | ATECC608A-MAHDA-S | ATECC608A with an I2C Interface and a 8 Pin UDFN Package with Paddle |
| Fitted | U5 | 1 | ATECC608A_1FLX I2C UDFN | Microchip Technology Inc | ATECC608A-1FLX1LSU | ATECC608A TrustiFLEX with an I2C Interface and a 8 Pin UDFN Package |
| Fitted | U6 | 1 | ATECC608A-TNG I2C UDFN | Microchip Technology Inc | ATECC608A-TNGTLSU-G | ATECC608A Trust&GO with an I2C Interface and a 8 Pin UDFN Package |
| Fitted | U7 | 1 | | Microchip | MIC5528-3.3YMT-T5 | LDO 3.3V 0.5A 6TDFN |
| Fitted | U8 | 1 | USB2422T/MJ | Microchip Technology Inc | USB2422T/MJ | USB Hub Controller USB 2.0 USB Interface 24-QFN (4x4) |
| Fitted | U100 | 1 | | Microchip | ATSAMD21E18A-MJT | Atmel 32-bit RISC MCU 32pin |
| Not Fitted | J20 | 0 | 3130-10SS3BG1DK001 | Cabcon A/S | 3130-10SS3BG1DK001 | Shrouded header 2x5, Straight, 1.27mm Pitch, Through-hole with locking clip |
| Not Fitted | R28 | 0 | 0R | (n/a) | RMCF04022T0R00 | RES 0.0 OHM 1/16W 0402 SMD |

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Approved

Notes

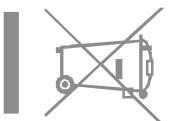
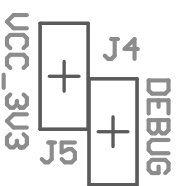


GND

BOOT

TP10

J102



CRYPTOAUTH
TRUST PLATFORM

GND

PA10/PWM

AN/PA04

PA05/INT



RST#/RESETN#

PA07/RX



CS/PA17

PA06/TX

SCK/PA19

PA09/SCL



MISO/PA16

PA08/SDA

MOSI/PA18

+5V



mikro

+3.3V

GND



BUS

GND

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A08-3036 REV4