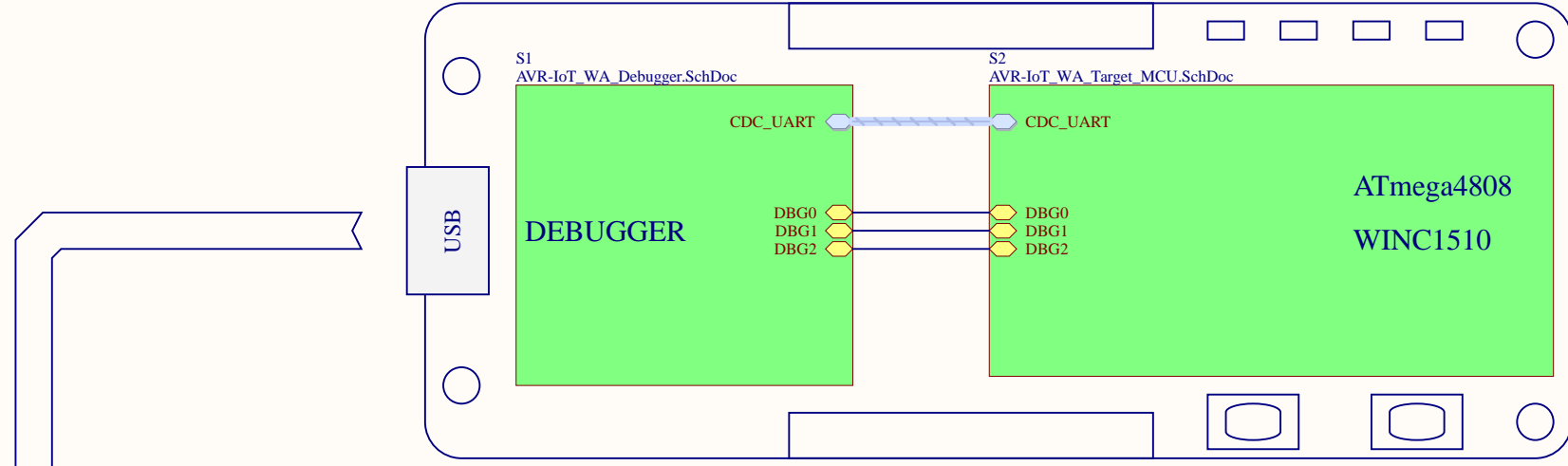
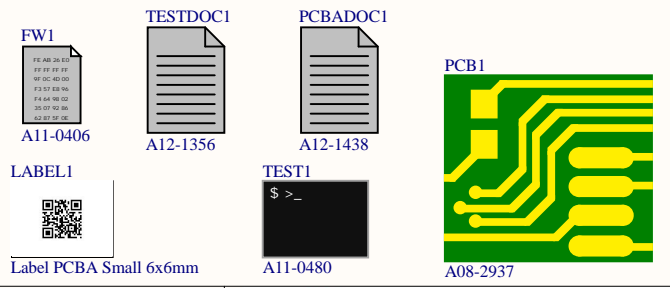
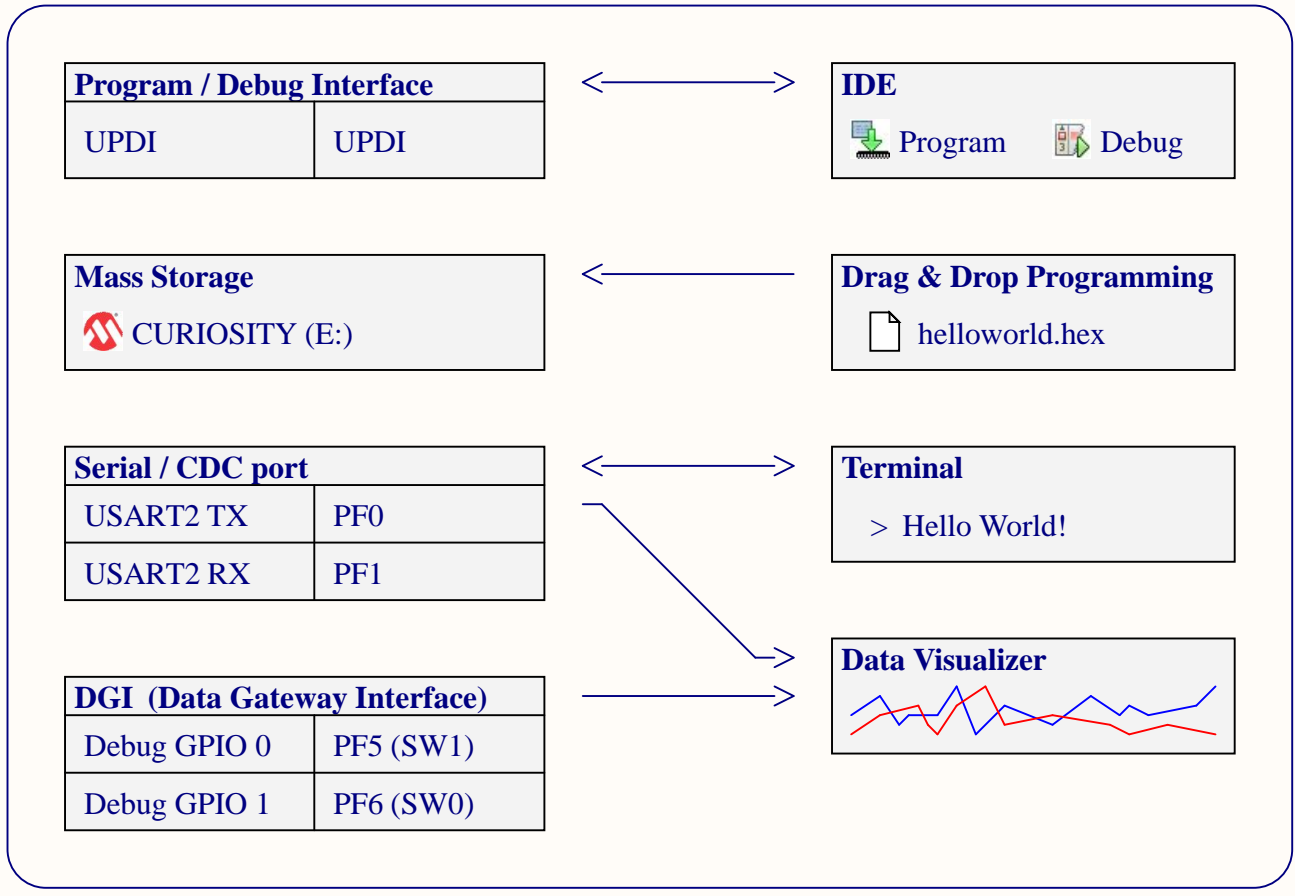


# AVR-IoT WA



WIFI (B)	PD3	Active Low
CONN (G)	PD2	Active Low
DATA (Y)	PD1	Active Low
ERR (R)	PD0	Active Low
SW0	PF6	Active Low
SW1	PF5	Active Low



S3 AVR-IoT\_WA\_Revision\_History.SchDoc

Drawn By: TF

Engineer: TF

Project Title: **AVR-IoT WA**

Sheet Title: **Top Level**

Size: A3

PCB Assembly Number: A09-3349

PCB Number: A08-2937

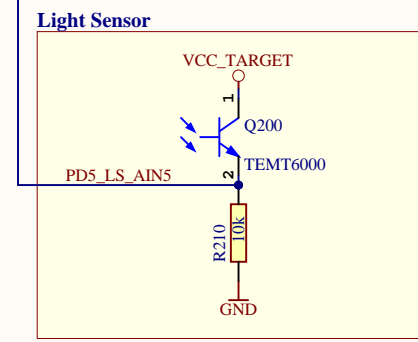
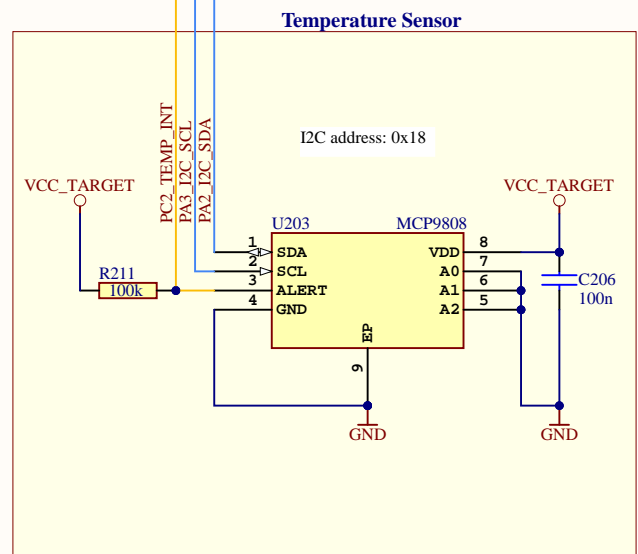
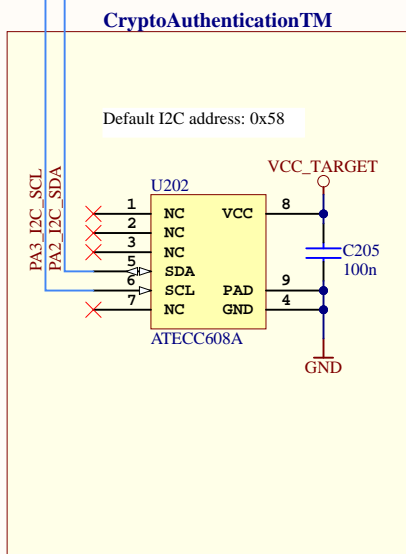
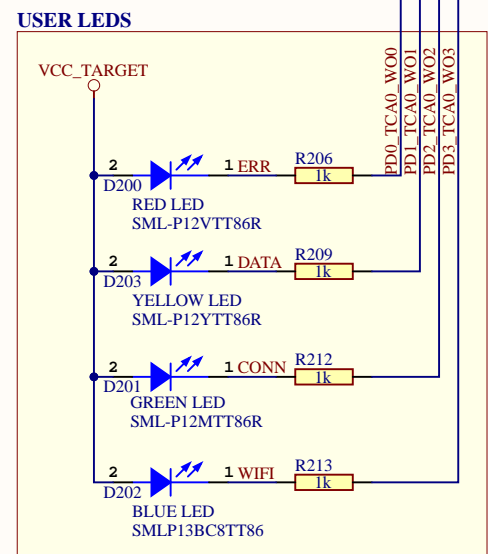
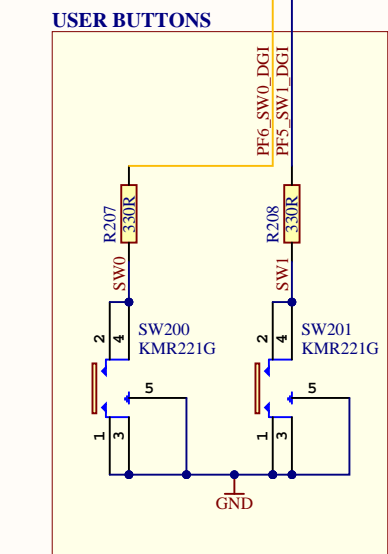
PCBA Revision: 1

PCB Revision: 5

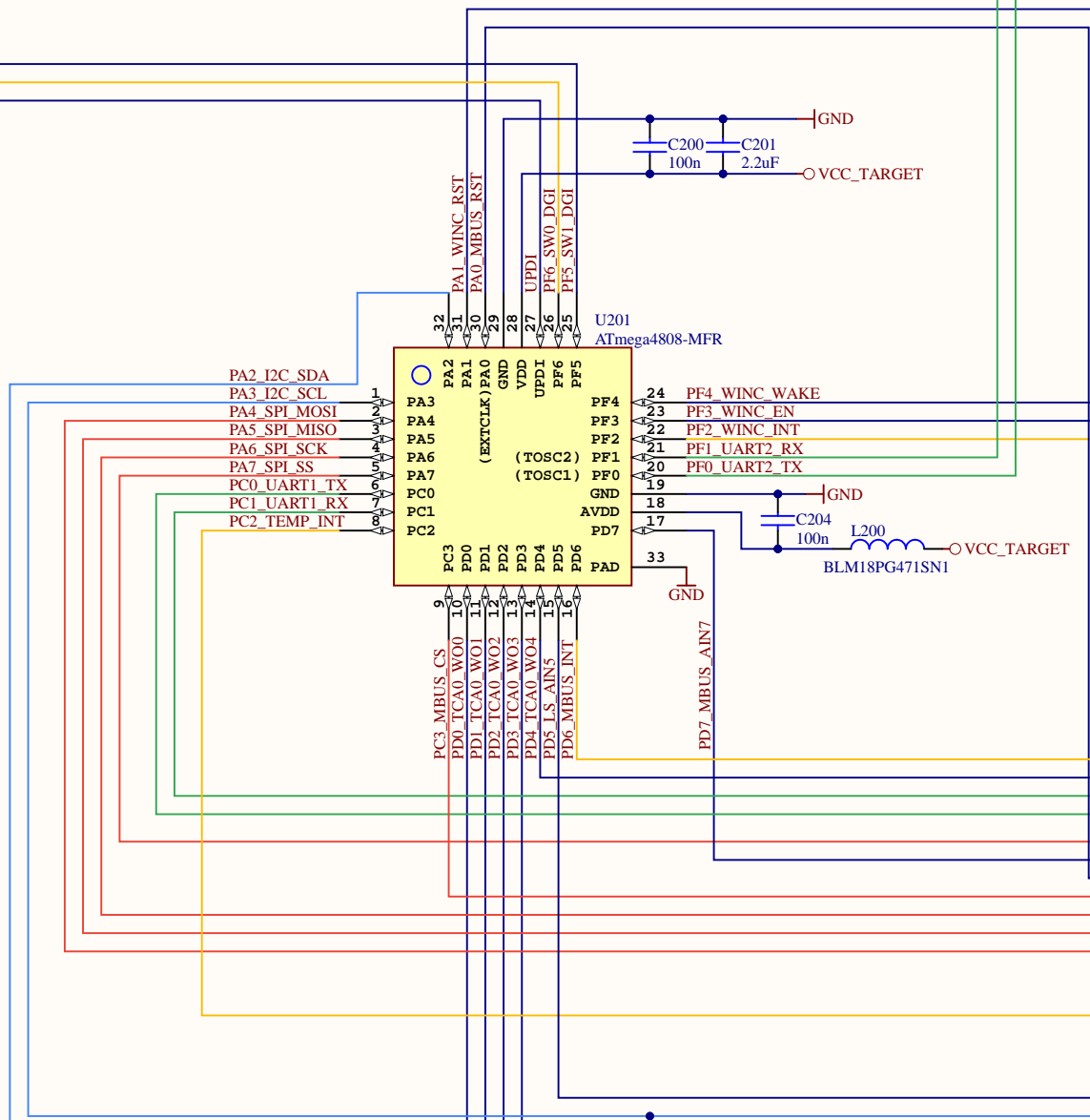
Date: 2/17/2020

Page: 1 of 4

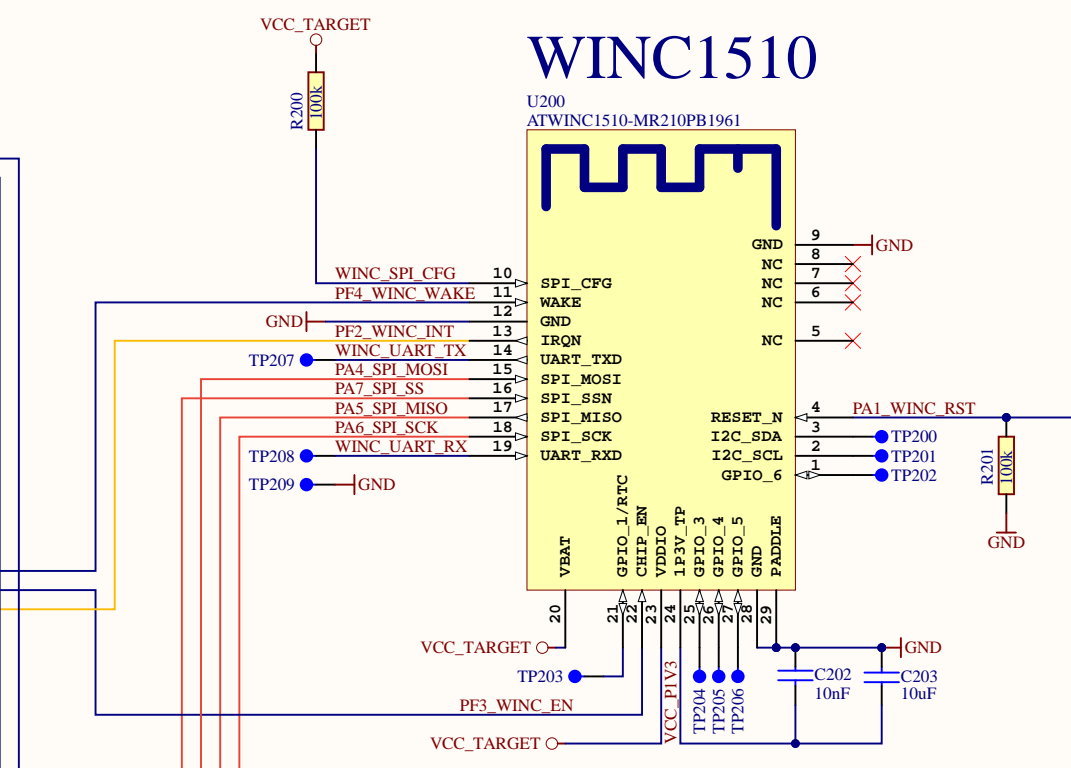
Designed with **Altium** Altium.com



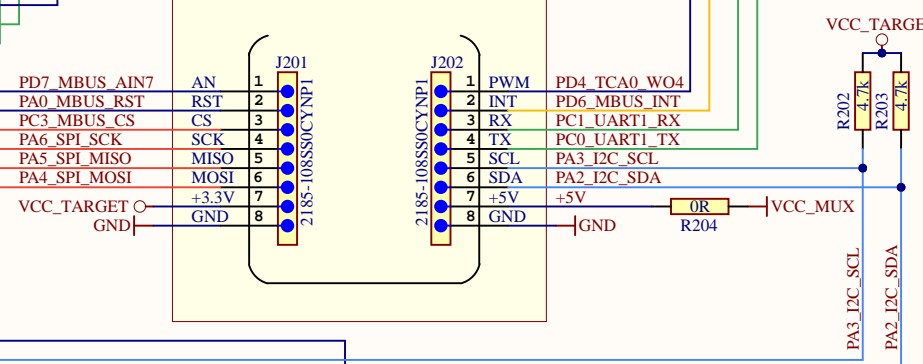
# ATmega4808



# WINC1510



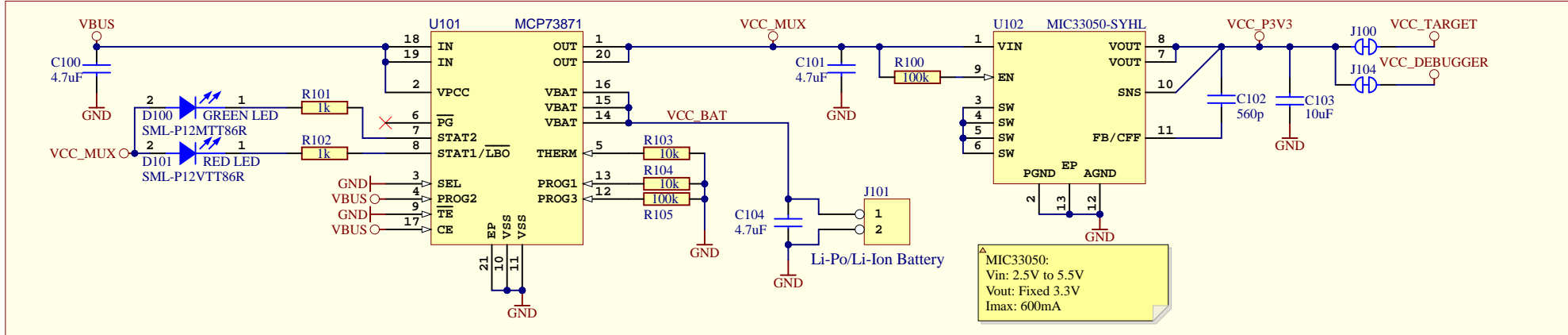
## mikroBUS™ Header (Female)



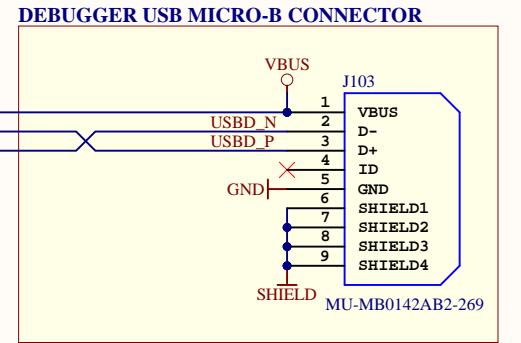
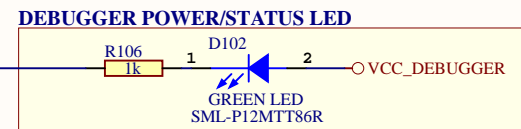
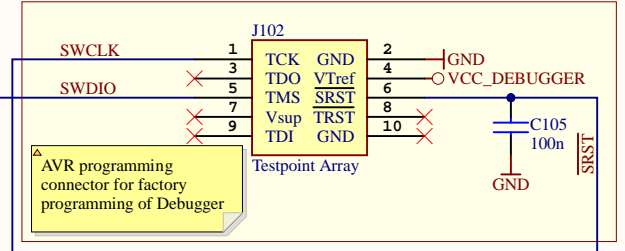
Drawn By: TF  
 Engineer: TF  
 Project Title: AVR-IoT WA  
 Sheet Title: Target MCU  
 Size: A3  
 PCB Assembly Number: A09-3349  
 PCB Number: A08-2937  
 PCBA Revision: 1  
 PCB Revision: 5  
 Date: 2/17/2020  
 Page: 2 of 4

Designed with Altium Altium.com

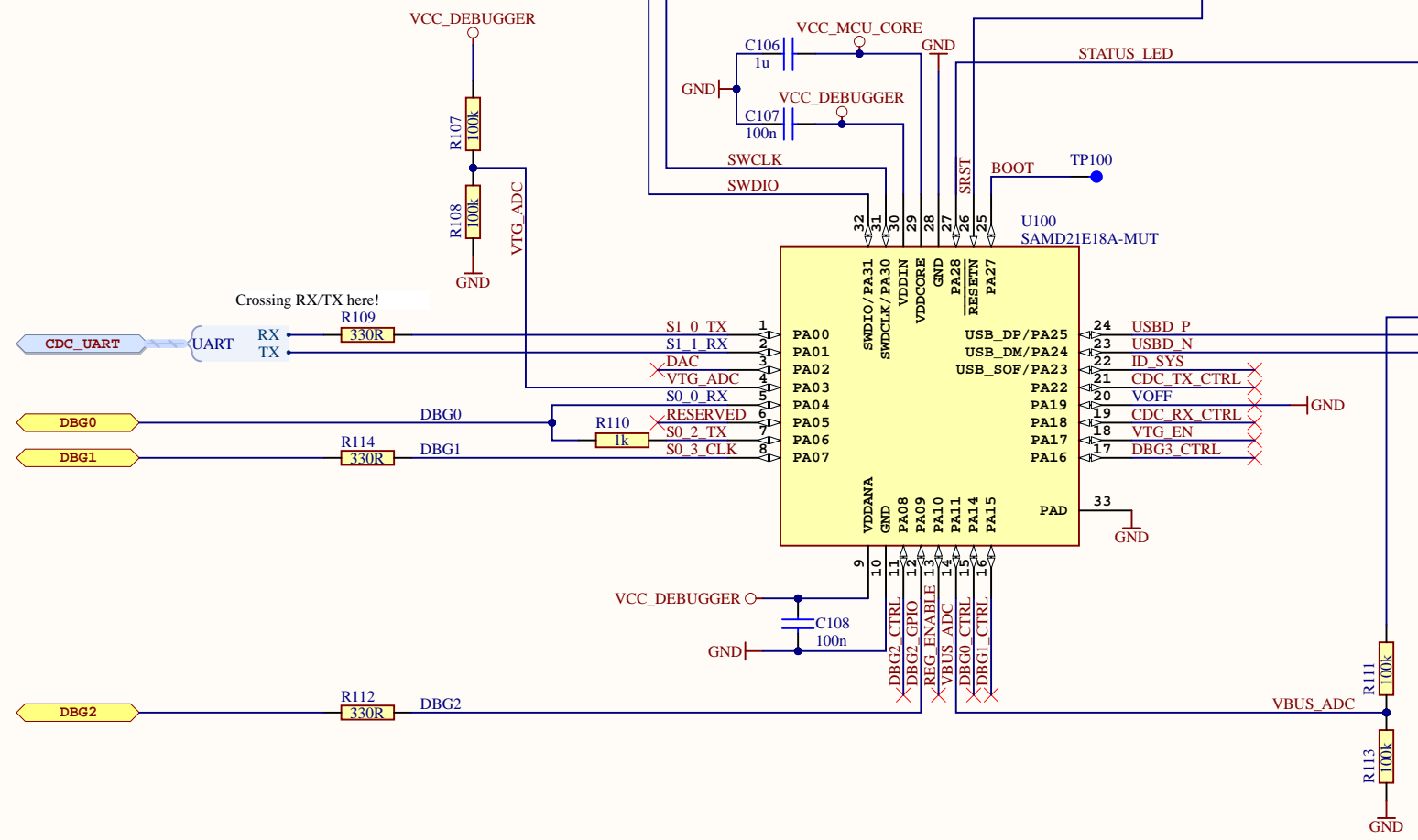
**POWER SUPPLY AND BATTERY CHARGER**



**DEBUGGER TESTPOINT**



Interface	UPDI	TARGET
CDC TX	UART	RX
CDC RX	UART	TX
DBG0	UPDI	
DBG1	GPIO	
DBG2	GPIO	
DBG3	-	
VCC	-	



Drawn By: TF		
Engineer: TF		
Project Title <b>AVR-IoT WA</b>	 Altium.com	
Sheet Title <b>Debugger</b>		
Size A3	PCB Assembly Number: A09-3349	PCBA Revision: 1
	PCB Number: A08-2937	PCB Revision: 5
File: AVR-IoT_WA_Debugger.SchDoc	Date: 2/17/2020	Page: 3 of 4

# Revision History


## PCB Assembly Rev 1:

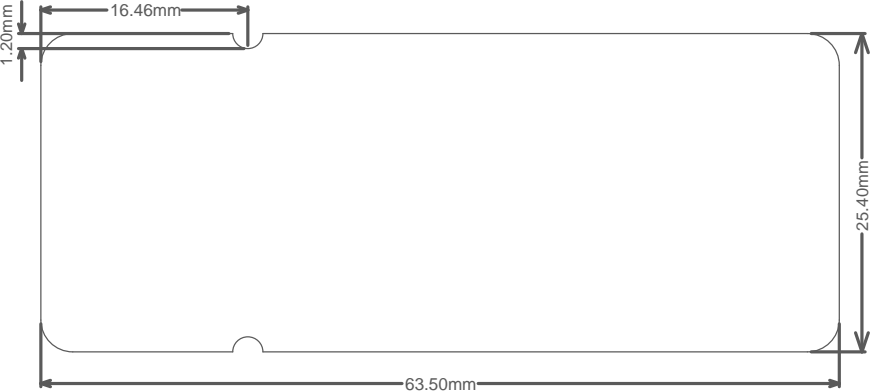
Design Changes:

Initial Design

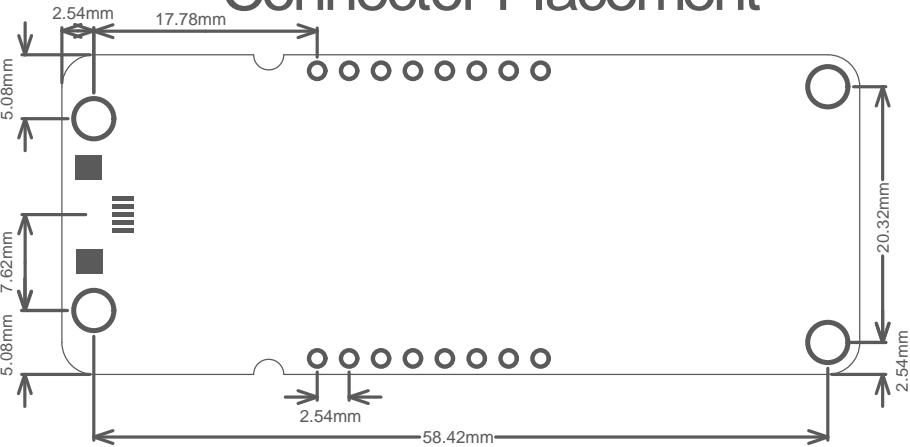
PCB:

PCB revision 5

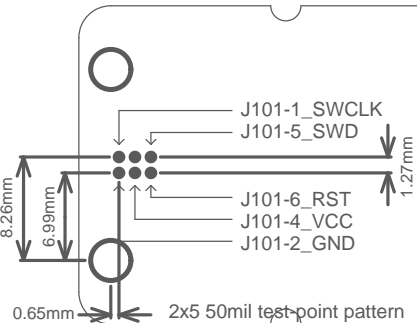
Drawn By: TF			
Engineer: TF			
Project Title <b>AVR-IoT WA</b>	Sheet Title <b>Revision History</b>		<i>Designed with</i> <b>Altium</b> <a href="http://Altium.com">Altium.com</a>
Size A3	PCB Assembly Number: A09-3349	PCBA Revision: 1	
	PCB Number: A08-2937	PCB Revision: 5	Date: 2/17/2020
File: AVR-IoT_WA_Revision_History.SchDoc			Page: 4 of 4

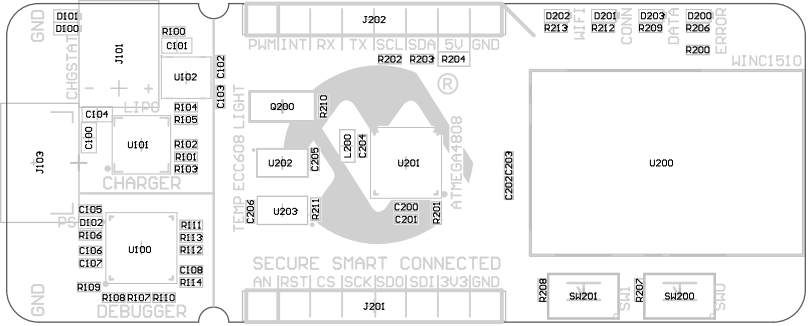


# Connector Placement



# Test Point Placement







GND

BOOT  
TP100

GND

LIPO  
BATT



UCC  
TARGET NEDBG

001r 401r



PCBA  
LABEL

J102

PD4 / PWM  
PD6 / INT  
PC1 / RX  
PC0 / TX  
PA3 / SCL  
PA2 / SDA  
+5V  
GND

AN / PD7  
RST / PA0  
CS / PC3  
SCK / PA6  
MISO / PA5  
MOSI / PA4  
+3.3V  
GND



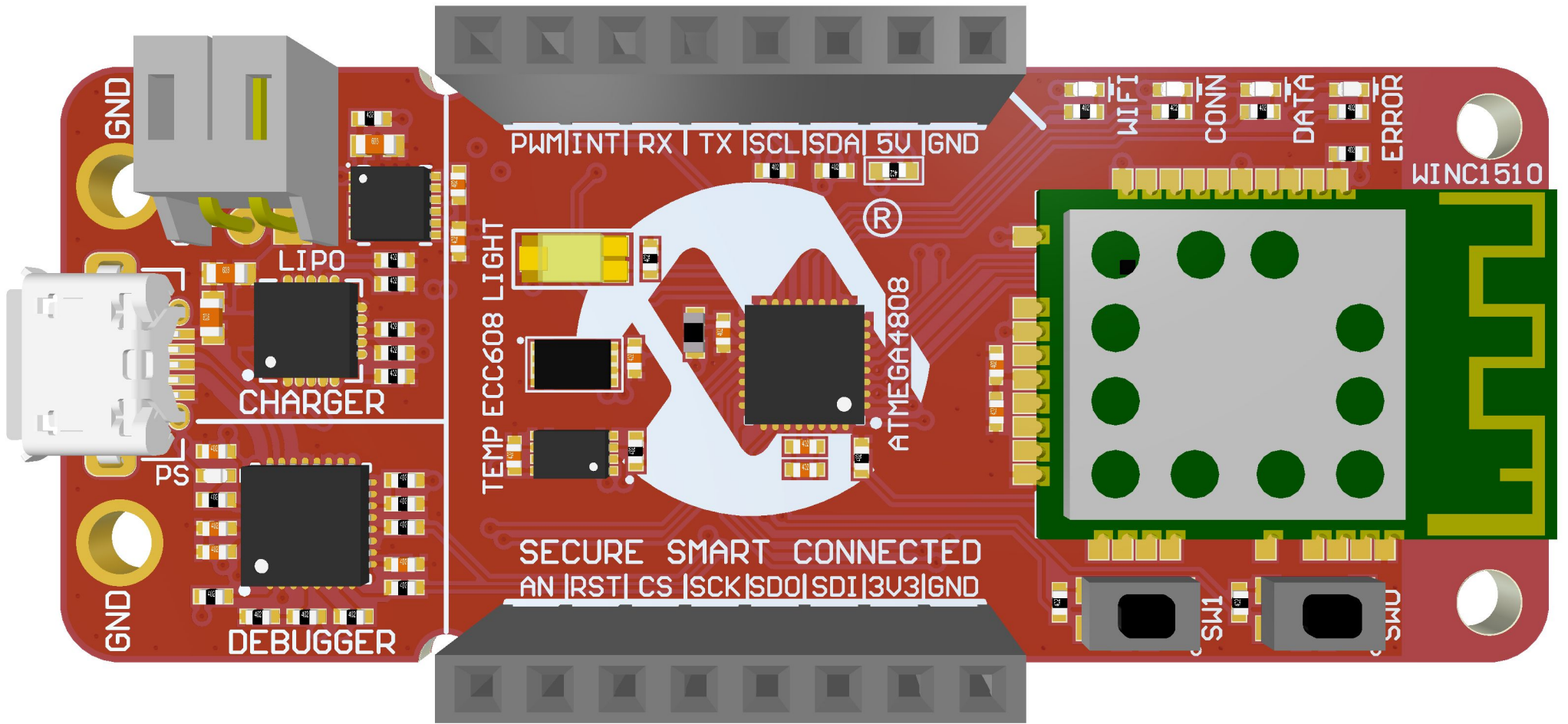
Microchip © 2019

A08-2937 Rev5

TP209 TP207 TP208  
RX  
TX  
GND

TP200 TP201 TP202 TP206 TP205 TP204 TP203  
GP1  
GP3  
GP4  
GP5  
GP6  
SDA





GND

LIPO

CHARGER

PS

GND

DEBUGGER

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

TEMP ECC608 LIGHT

ATMEGA4808

SECURE SMART CONNECTED  
AN | RST | CS | SCK | SDO | SDI | 3V3 | GND

WIFI

CONN

DATA

ERROR

WINC1510

SW1

SW2

GND

BOOT

GND

L1P0  
BATT



UCC

TARGET neDBG



PCBA  
LABEL



PD4 / PWM

AN / PD7

PD6 / INT

RST / PA0

PC1 / RX

CS / PC3

PC0 / TX

SCK / PA6

PA3 / SCL

MISO / PA5

PA2 / SDA

MOSI / PA4

+5V

+3.3V

GND

GND

mikro

BUS

Microchip © 2019

A08-2937 Rev5



RX

GP6

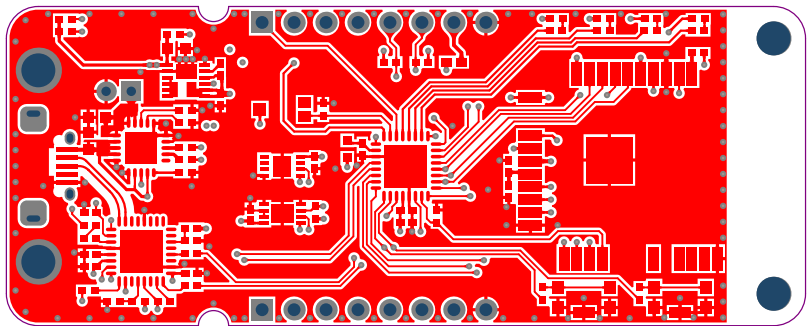
TX

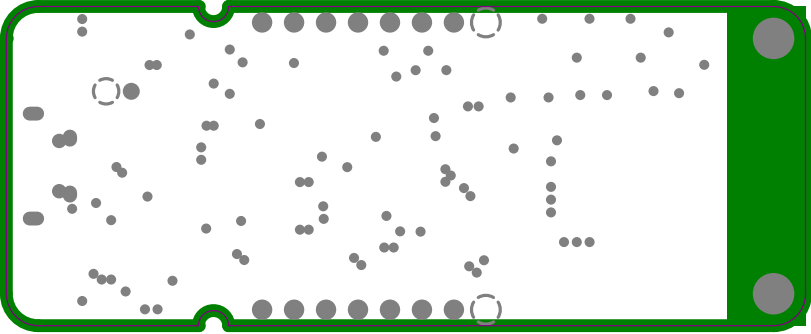
SCL

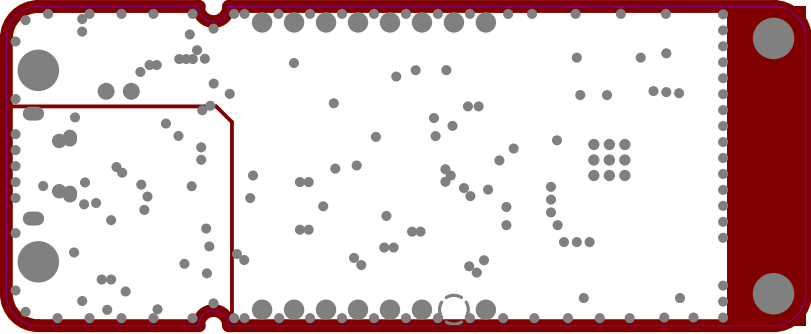
GND

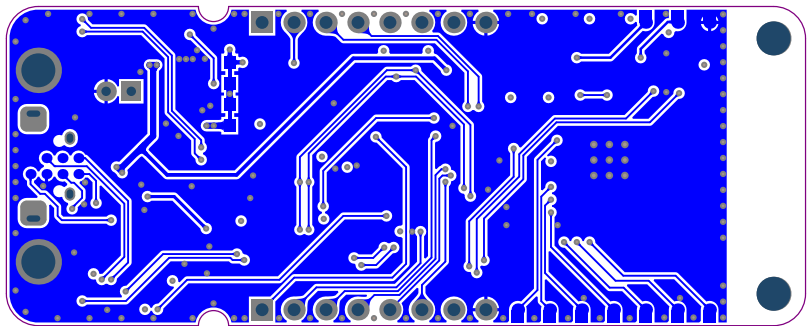
SDA











# Component list

Bill of Materials Fitted for Variant [Default Assembly] of Project [AVR-IoT\_WA.PrjPcb] (No PCB Document Selected)

Source Data From: AVR-IoT\_WA.PrjPcb  
 Project: AVR-IoT\_WA.PrjPcb  
 Variant: Default Assembly



**MICROCHIP**

Report Date: 2/17/2020 3:00 PM

Print Date:

Fitted	Designator	Quantity	Value	Manufacturer	MPN	Description
Fitted	C100, C101, C104	3	4.7uF	WALSIN Technology Corporation	0603X475K100CT	Ceramic capacitor, SMD 0603, X5R, 10V, 10% (de31036)
Fitted	C102	1	560p			Ceramic capacitor, SMD 0402, X7R, 50V, +/-10%
Fitted	C103, C203	2	10uF	Murata	GRM155R60J106ME15	Ceramic capacitor, SMD 0402, X5R, 6.3V, 20%
Fitted	C105, C107, C108, C200, C204, C205, C206	7	100n	Kemet	C0402C104K4RACTU	Ceramic capacitor, SMD 0402, X7R, 16V, +/-10%
Fitted	C106	1	1u	Kemet	C0402C105K9PAC	Ceramic capacitor, SMD 0402, X5R, 6.3V, +/-10% (de26942)
Fitted	C201	1	2.2uF	tdk	C1005X5R1A225K	CAP CER 2.2UF 10V 10% X5R 0402
Fitted	C202	1	10nF	Murata	GRM155R71E103KA01D	Ceramic capacitor, SMD 0402, X7R, 25V, 10%
Fitted	D100, D102, D201	3	GREEN LED	ROHM	SML-P12MTT86R	LED, SMD 0402, Green, Wave length=569nm, 2.1mcd @ (1mA, 1.9Vf)rohm
Fitted	D101, D200	2	RED LED	ROHM	SML-P12VTT86R	LED, SMD 0402, Red, Wave length=630nm, 2.1mcd @ (1mA, 1.7Vf)rohm
Fitted	D202	1	BLUE LED	ROHM	SMLP13BC8TT86	LED, SMD 0402, Blue, Wave length=470nm, 25mcd @ (5mA, 2.9Vf)rohm
Fitted	D203	1	YELLOW LED	ROHM	SML-P12YTT86R	LED, SMD 0402, Yellow, Wave length=586nm, 7.6mcd @ (1mA, 1.9Vf)
Fitted	FW1	1	debugger firm are			nEDBG firm are
Fitted	J101	1	S2B-PH-K-S	J.S.T. Mfg. Co. Ltd.	S2B-PH-K-S	Pin Header 1x2, 2mm THM, right entry, 100V AC/DC, 2A AC/DC (AWG #24) (Element14:9491902)
Fitted	J103	1	MU-MB0142AB2-269	Allen Creations Corp.	MJ-MB0142AB2-269	USB micro AB, Surface mount signals and DIP shield
Fitted	J201, J202	2	2185-108SS0CYNP1	WCON	2185-108SS0CYNP1	1x8 receptacle pin header, 2.54mm pitch THM, PIP
Fitted	L200	1	BLM18PG471SN1	Murata	BLM18PG471SN1	SMD RF inductor 0603. Z=470Ohm (@100MHz), Max R(dc)=0.20Ohm, Max current=1A
Fitted	LABEL1	1	Label PCBA Small 6x6mm	ACT Logimark AS	505462	PCBA identification label PP Top White Gloss
Fitted	PCB1	1	AVR-IoT Wx PCB documentation			AVR-IoT Wx PCB documentation
Fitted	PCBA DOC1	1	A09-3349 AVR-IoT WA PCBA documentation			AVR-IoT WA PCBA documentation
Fitted	Q200	1	TEMT6000	vishay	TEMT6000X01	light sensor
Fitted	R100, R105, R107, R108, R111, R113, R200, R201, R211	9	100k	ASJ Holdings	CR10-1003-FK	Thick film resistor, SMD 0402, 1/16W, 1%
Fitted	R101, R102, R106, R110, R206, R209, R212, R213	8	1k	ASJ Holdings	CR10-1001-FK	Thick film resistor, SMD 0402, 1/16W, 1%
Fitted	R103, R104, R210	3	10k	Yageo	RC0402FR-0710KL	Thick film resistor, SMD 0402, 1/16W, 1%
Fitted	R109, R112, R114, R207, R208	5	330R	Yageo	RC0402FR-07330RL	Thick film resistor, SMD 0402, 1/16W, 1%
Fitted	R202, R203	2	4.7k	Yageo	RC0402FR-074K7L	Thick film resistor, SMD 0402, 1/16W, 1%
Fitted	R204	1	OR	(n/a)	RMCF0402ZT0R00	RES 0.0 OHM 1/16W 0402 SMD
Fitted	SW200, SW201	2	KMR221G	ITT Corporation	KMR221G	Microminiature Tact Sw itch for SMT
Fitted	TEST1	1	AVR-IoT WA test			Fixture test for AVR-IoT WA test
Fitted	TESTDOC1	1	AVR-IoT Wx Test Instructions			AVR-IoT Wx Test Instructions
Fitted	U100	1	SAMD21E18A-MUT	Microchip	ATSAMD21E18A-MUT	32-bit RISC MCU 32pin
Fitted	U101	1	MCP73871	Microchip	MCP73871T-2CCI/ML	Load Sharing and Li-Ion/Li-Polymer Battery Charge Management Controller
Fitted	U102	1	MIC33050-SYHL	Microchip	MIC33050-SYHL-TR	3.3V Fixed, 4MHz, 600mA, Buck regulator with internal inductor with HyperLight Load
Fitted	U200	1	ATWINC1510-MR210PB1961	Microchip	ATWINC1510-MR210PB1961	IEEE 802.11 b/g/n module, 8Mbit Flash Memory, with FEM, PCB Antenna, with Shield, with MAC, Firmw are version 19.6.1
Fitted	U201	1	ATmega4808-MFR	Microchip	ATmega4808-MFR	Atmel 8-bit RISC MCU, 48K Flash, 32pin QFN
Fitted	U202	1	ATECC608A I2C (Google Cloud)	Microchip	ATECC608A-MAH1H-S	ATECC608A with an I2C Interface and a 8 Pin UDFN
Fitted	U203	1	MCP9808	Microchip	MCP9808T-E/MC	±±0.5±±°C Maximum Accuracy Digital Temperature Sensor, I2C/SMBus

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Approved

Notes