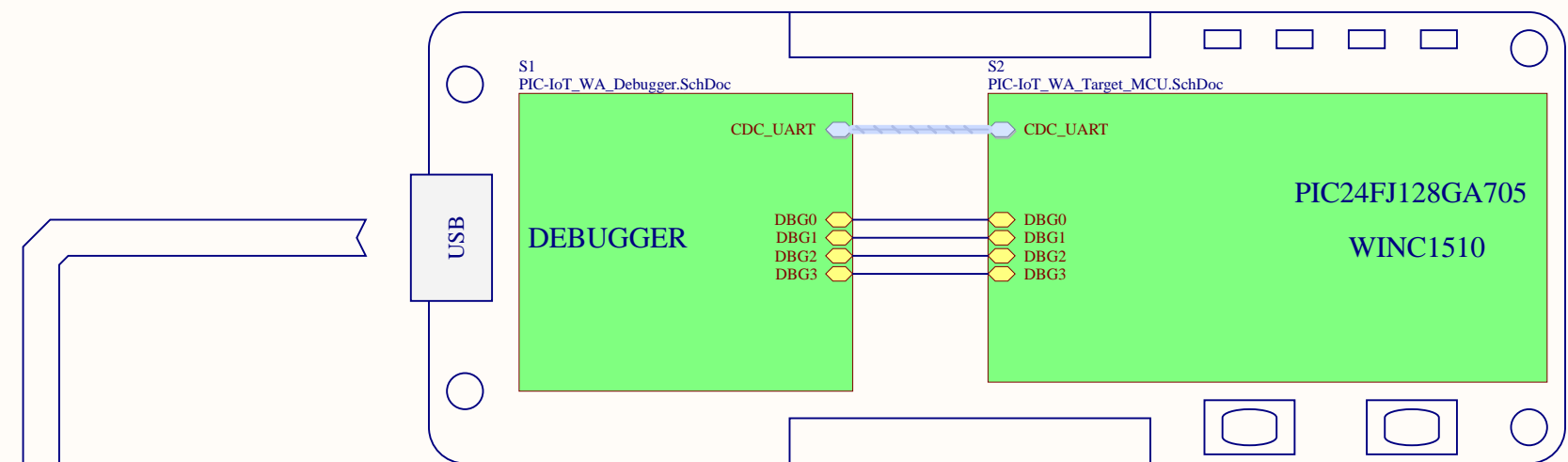
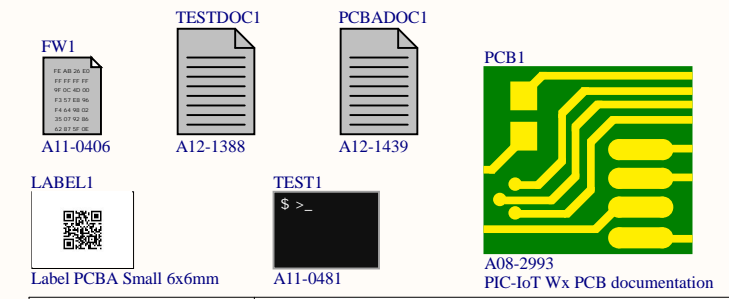
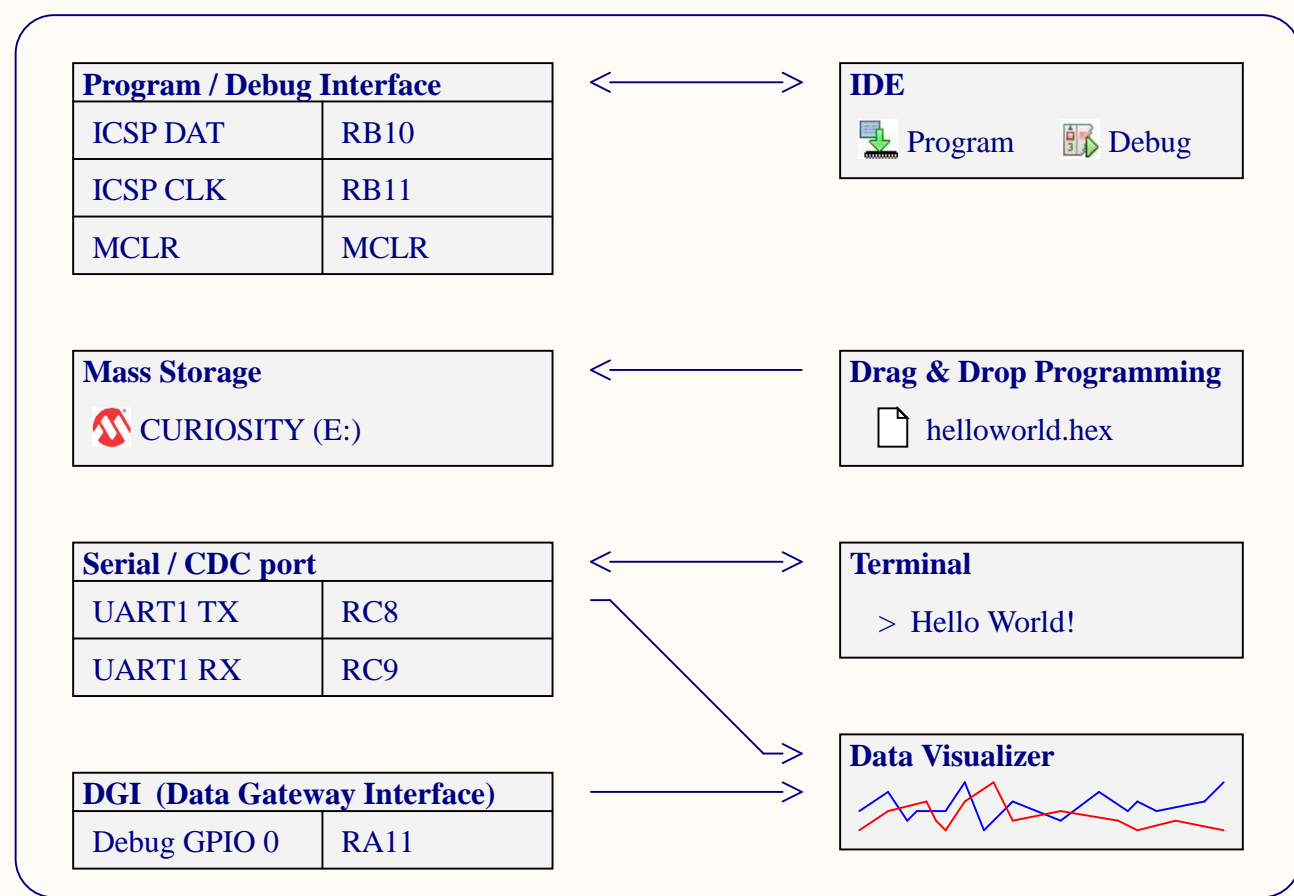


# PIC-IoT WA

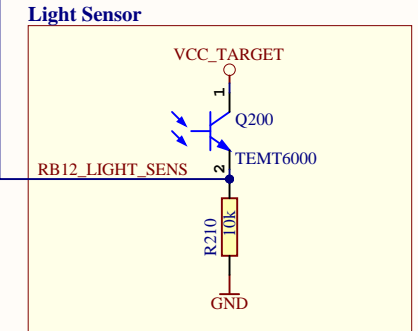
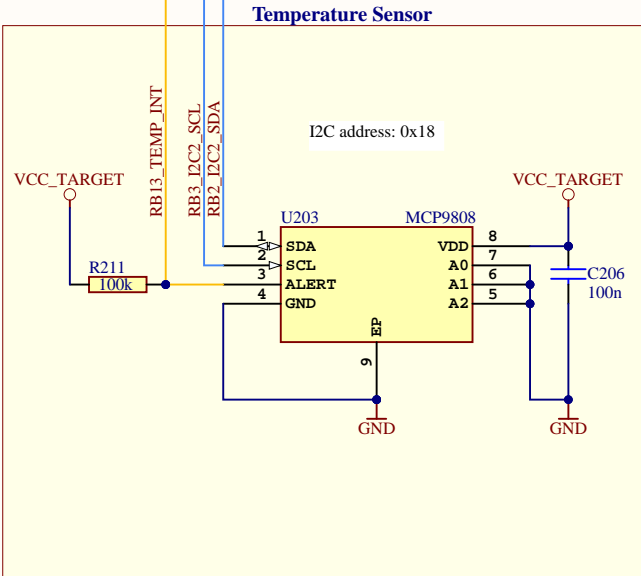
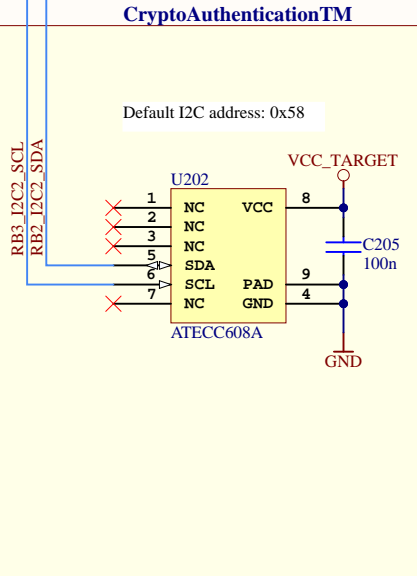
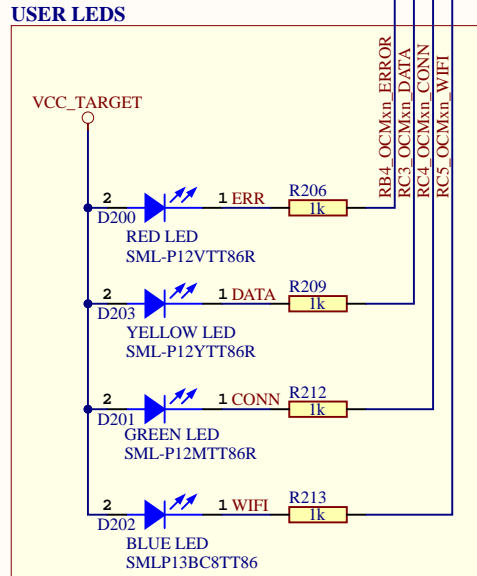
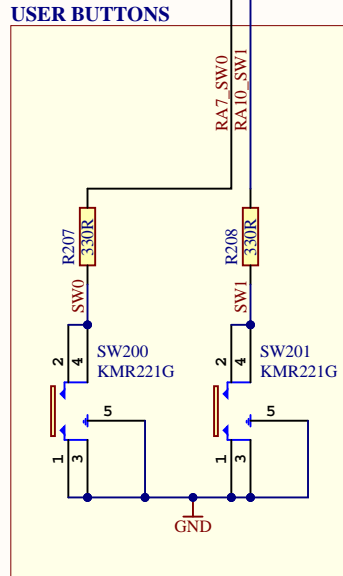
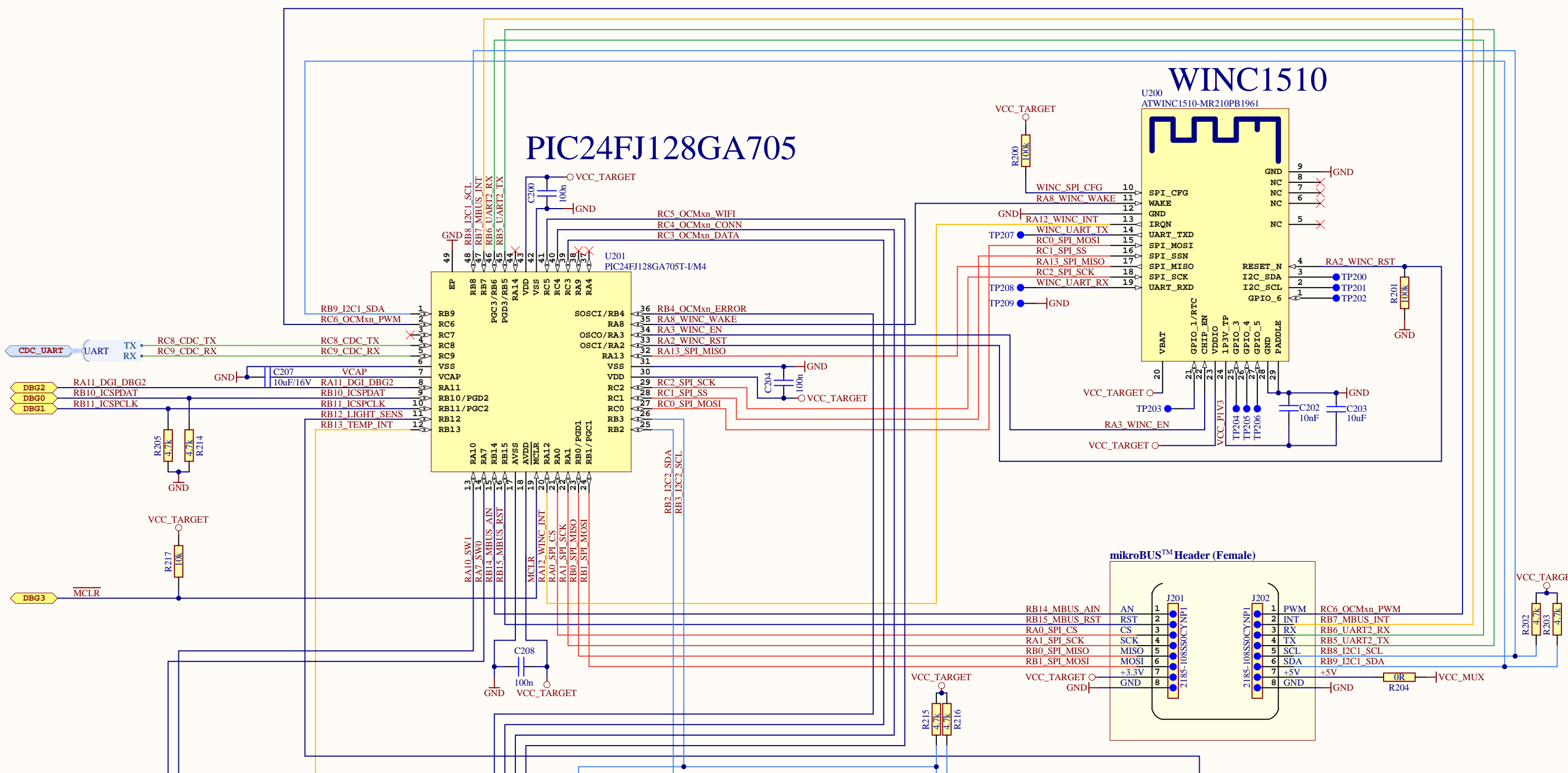


LEDs & Switches		
WIFI (B)	RC5	Active Low
CONN (G)	RC4	Active Low
DATA (Y)	RC3	Active Low
ERR (R)	RB4	Active Low
SW0	RA7	Active Low
SW1	RA10	Active Low



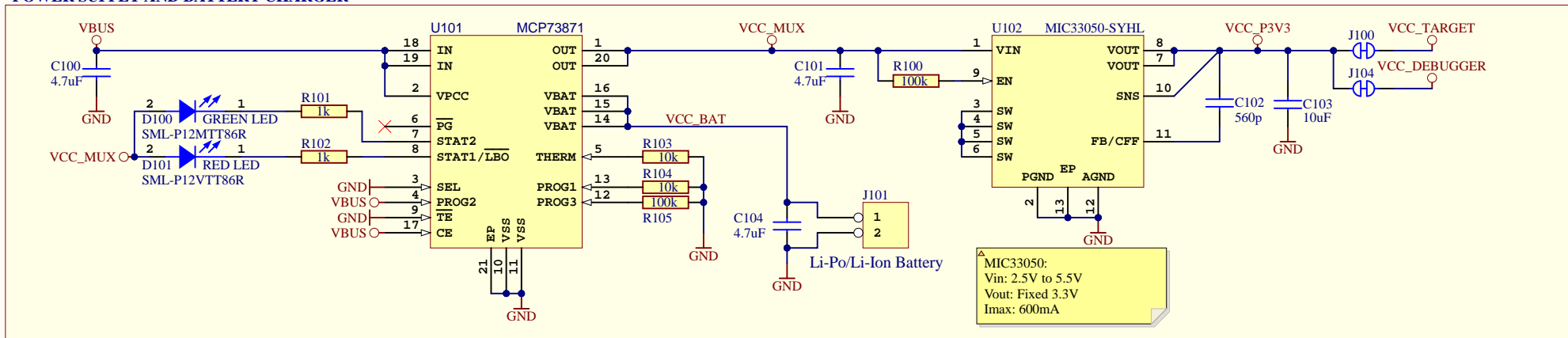
S3  
PIC-IoT\_WA\_Revision\_History.SchDoc

Drawn By: TF	
Engineer: TF	
Project Title <b>PIC-IoT WA</b>	
Sheet Title <b>Top Level</b>	
Size A3	PCB Assembly Number: A09-3352 PCB Number: A08-2993
PCBA Revision: 1	PCB Revision: 1
File: PIC-IoT_WA_TopLevel.SchDoc	
Designed with  Altium.com	
Date: 2/17/2020	
Page: 1 of 4	

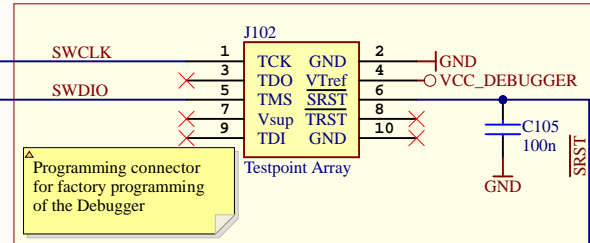


Drawn By: TF			
Engineer: TF			
Project Title <b>PIC-IoT WA</b>		Designed with 	
Sheet Title <b>Target MCU</b>		Altium.com	
Size A3	PCB Assembly Number: A09-3352	PCBA Revision: 1	Date: 2/17/2020
	PCB Number: A08-2993	PCB Revision: 1	Page: 2 of 4
File: PIC-IoT_WA_Target_MCU.SchDoc			

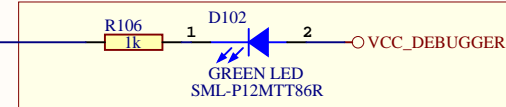
**POWER SUPPLY AND BATTERY CHARGER**



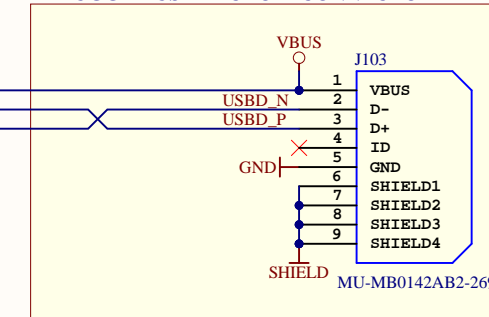
**DEBUGGER TESTPOINT**



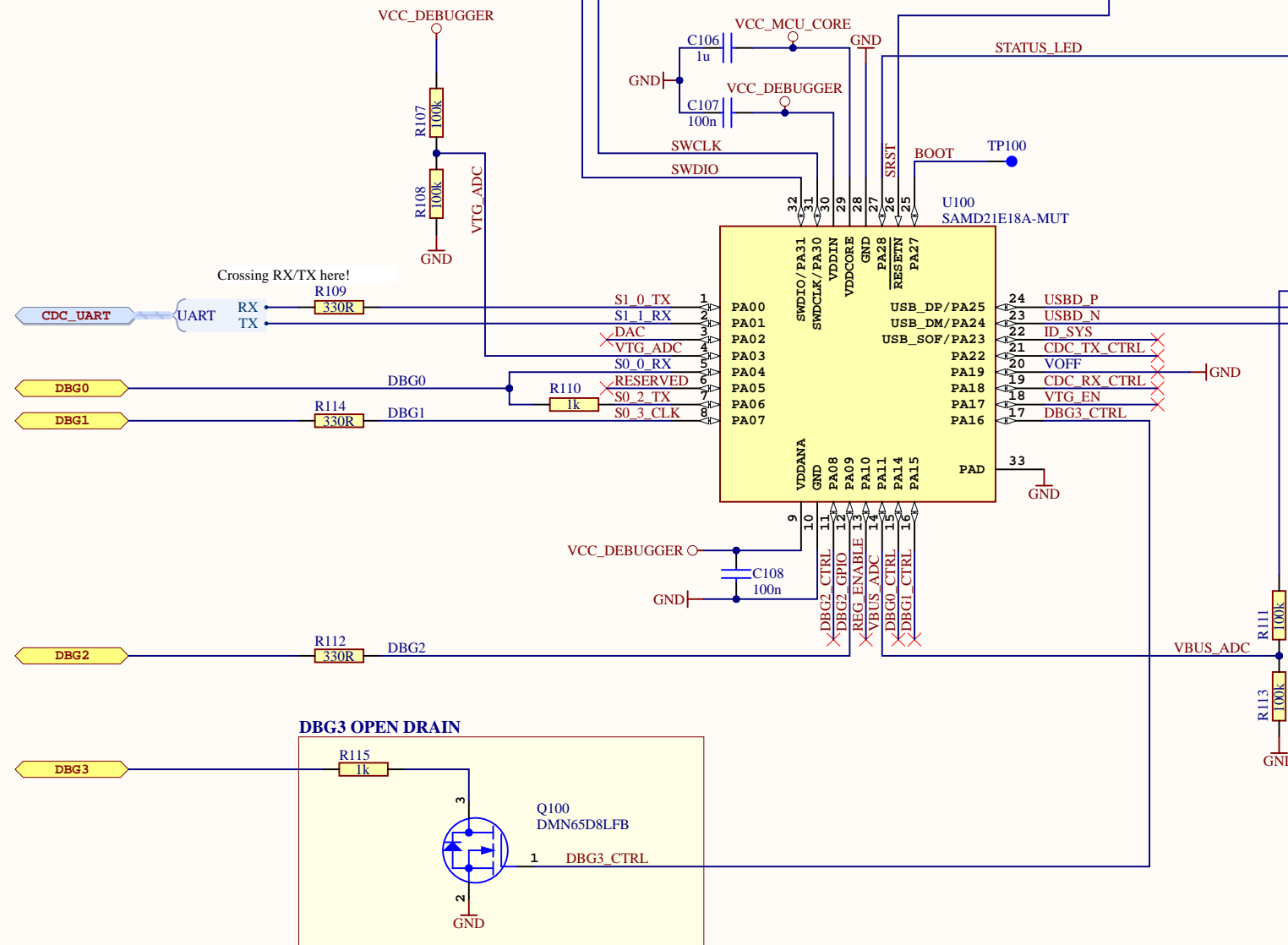
**DEBUGGER POWER/STATUS LED**



**DEBUGGER USB MICRO-B CONNECTOR**



Interface	ICSP TARGET
CDC TX	UART RX
CDC RX	UART TX
DBG0	DAT
DBG1	CLK
DBG2	GPIO
DBG3	MCLR
VCC	-




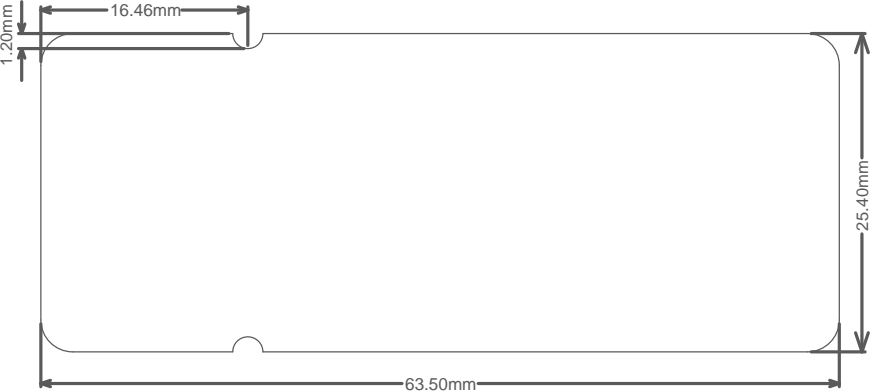
Drawn By: TF		
Engineer: TF		
Project Title <b>PIC-IoT WA</b>		
Sheet Title <b>Debugger</b>		
Size A3	PCB Assembly Number: A09-3352	PCBA Revision: 1
File: PIC-IoT_WA_Debugger.SchDoc	PCB Number: A08-2993	PCB Revision: 1
	Date: 2/17/2020	Page: 3 of 4

# Revision History

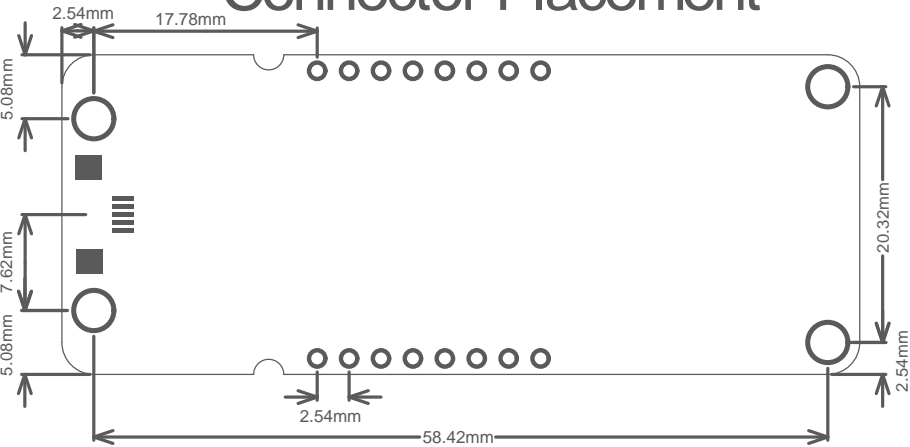
## PCB Assembly Rev 1:

Design Changes:
Initial Design
PCB:
PCB revision 1

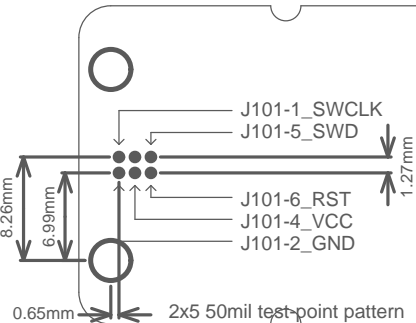
Drawn By: TF			
Engineer: TF			
Project Title <b>PIC-IoT WA</b>	<i>Designed with</i> <b>Altium</b> <a href="http://Altium.com">Altium.com</a>		
Sheet Title <b>Revision History</b>			
Size A3	PCB Assembly Number: A09-3352	PCBA Revision: 1	Date: 2/17/2020
	PCB Number: A08-2993	PCB Revision: 1	Page: 4 of 4
File: PIC-IoT_WA_Revision_History.SchDoc			

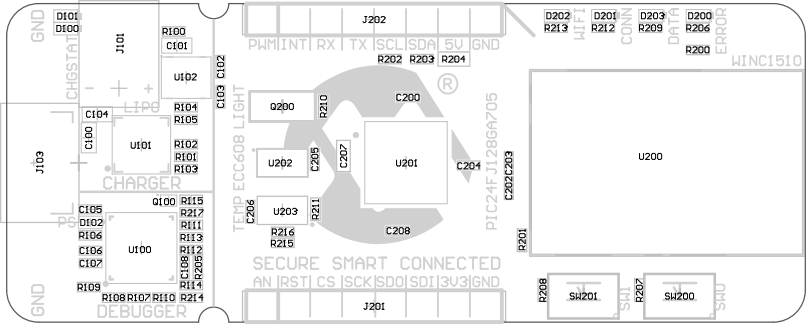


# Connector Placement



# Test Point Placement





GND

D101  
D100

J101

R100  
C101

U102

R104  
R105

LIP0

U101

R102  
R101  
R103

CHARGER

J103

C104

C105

U100

Q100

R115  
R217  
R111  
R113  
R112  
C108  
R205  
R114

D102

R106

C106

C107

R109

R108 R107 R110 R214

DEBUGGER

GND

PWM INT RX TX SCL SDA 5V GND

J202

R202 R203 R204

D202  
R213

WIFI

D201  
R212

CONN

D203  
R209

DATA

D200  
R206

R200  
ERROR

WINC1510

TEMP ECC608 LIGHT

C206

U203

R216  
R215

U202

R211

C205

C207

C208

U201

C200

Q200

R210

C204

PIC24FJ128GA705

C202 C203

R201

U200

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

J201

R208

SW201

SW1

R207

SW200

SW0



GND

BOOT  
TP100

GND

LIPO  
BATT



J102

UCC  
TARGET DEBUG

001r 401r



RC6 / PWM	AN / RB14
RB7 / INT	RST / RB15
RB6 / RX	CS / RA0
RB5 / TX	SCK / RA1
RB8 / SCL	MISO / RB0
RB9 / SDA	MOSI / RB1
+5V	+3.3V
GND	GND

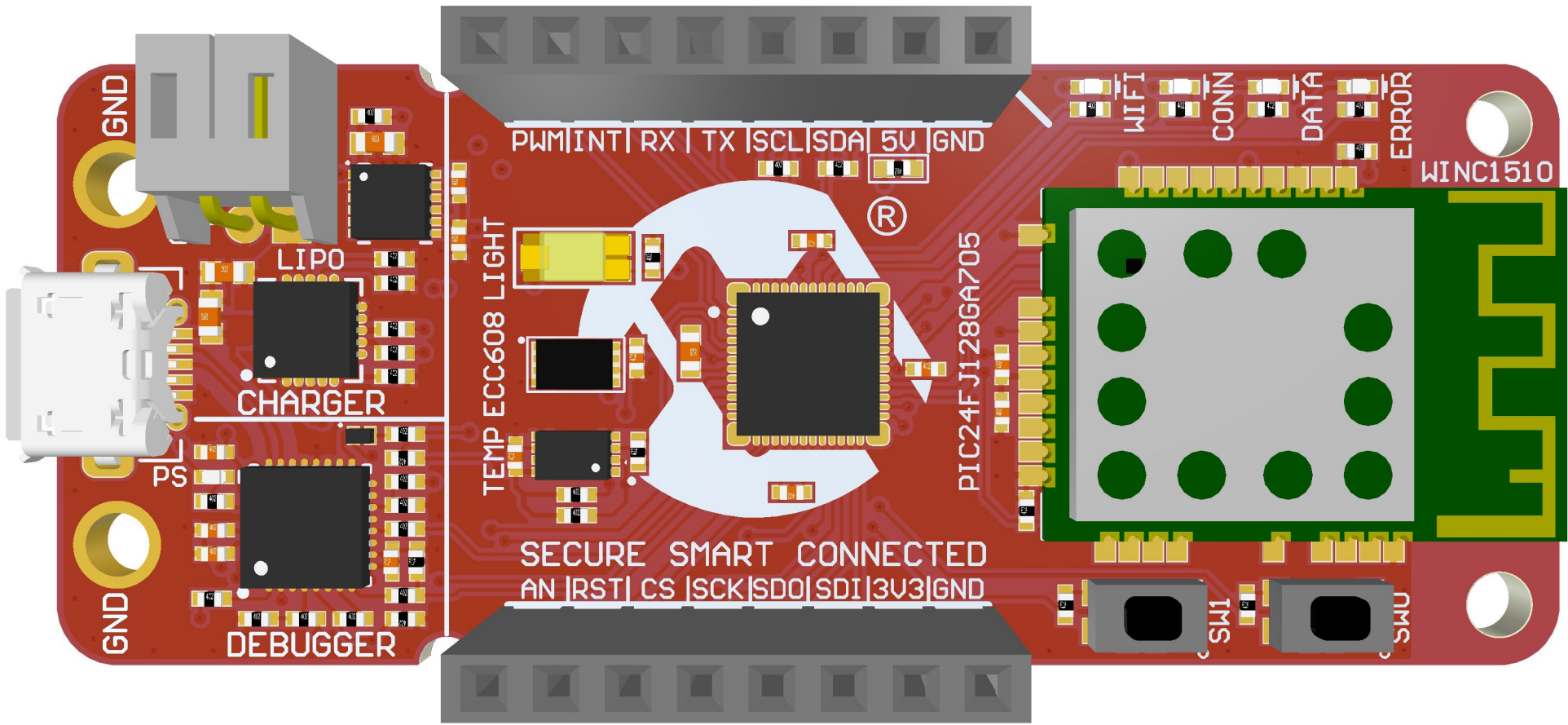


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A08-2993 Rev1

TP209 TP207 TP208  
RX TX GND

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





GND

BOOT

GND

L1P0  
BATT

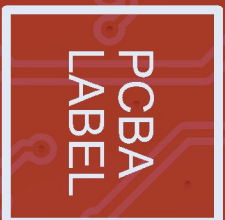


UCC

TARGET DEBUG



PCBA  
LABEL



RC6 / PWM

AN / RB14

RB7 / INT

RST / RB15

RB6 / RX

CS / RA0

RB5 / TX

SCK / RA1

RB8 / SCL

MISO / RB0

RB9 / SDA

MOSI / RB1

+5V

+3.3V

GND



GND

Microchip © 2018

A08-2993 Rev1



RX

GP1

TX

GP2

GND

GP3



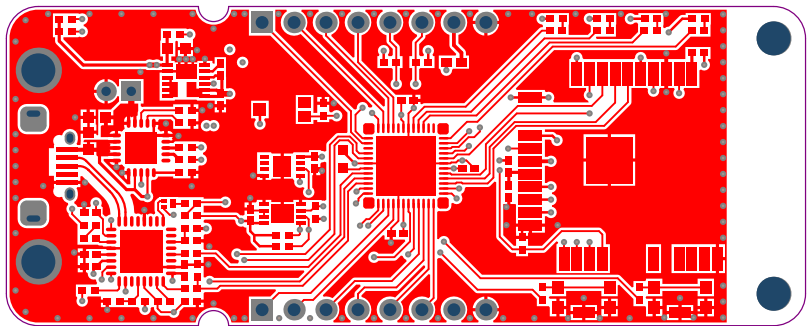
GP4

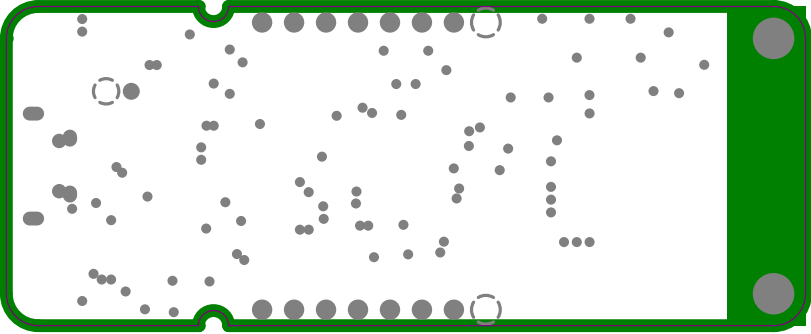
GP5

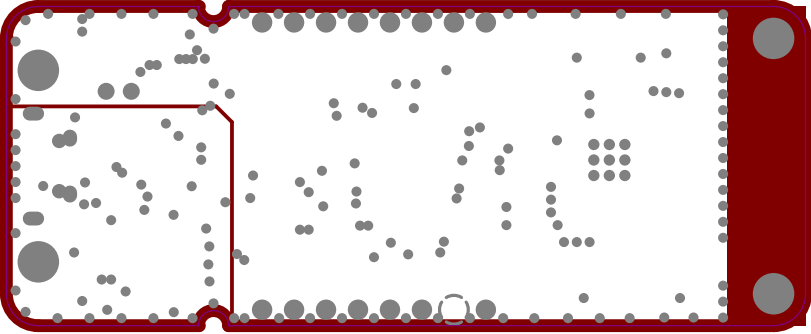
GP6

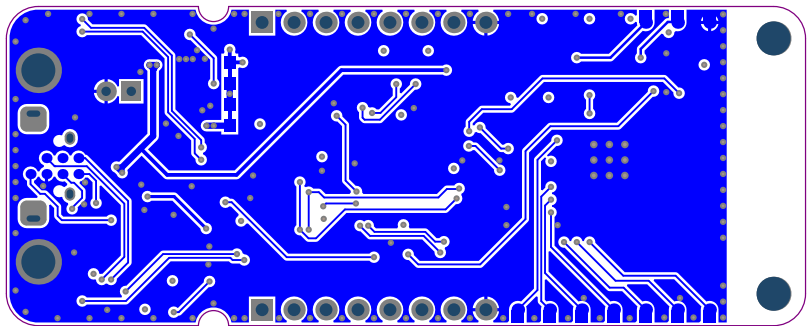
SCL

SDA









# Component list

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

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



**MICROCHIP**

Report Date: 2/17/2020 4:22 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, C208	8	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	C202	1	10nF	Murata	GRM155R71E103KA01D	Ceramic capacitor, SMD 0402, X7R, 25V, 10%
Fitted	C207	1	10uF/16V	Taiyo Yuden	EMK107BBJ106MA-T	Ceramic capacitor, SMD 0603, X5R, 16V, 10UF ± 20% (High Density)
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	nEDBG firmw are			nEDBG firmw 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.	MU-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	LABEL1	1	Label PCBA Small 6x6mm	ACT Logimark AS	505462	PCBA identification label PP Top White Gloss
Fitted	PCB1	1	PIC-IoT Wx PCB documentation			PIC-IoT Wx PCB documentation
Fitted	PCBADC1	1	A09-3352 PIC-IoT WA PCBA documentation			PIC-IoT WA PCBA documentation
Fitted	Q100	1	DMN65D8LFB	Diodes Incorporated	DMN65D8LFB-7	N-channel MOSFET, DFN1006-3 (SOT883), 60V, 330mA, 4Ohm
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, R115, R206, R209, R212, R213	9	1k	ASJ Holdings	CR10-1001-FK	Thick film resistor, SMD 0402, 1/16W, 1%
Fitted	R103, R104, R210, R217	4	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, R205, R214, R215, R216	6	4.7k	Yageo	RC0402FR-074K7L	Thick film resistor, SMD 0402, 1/16W, 1%
Fitted	R204	1	0R	(n/a)	RMCF0402ZT0R00	RES 0.0 OHM 1/16W 0402 SMD
Fitted	SW200, SW201	2	KMR221G	ITT Corporation	KMR221G	Microminiature Tact Switch for SMT
Fitted	TEST1	1	PIC-IoT WA test			Fixture test for PIC-IoT WA
Fitted	TESTDOC1	1	PIC-IoT Wx Test Instructions			PIC-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	PIC24FJ128GA705T-IM4	Microchip	PIC24FJ128GA705T-IM4	PIC24FJ128GA705T-IM4 microcontroller, 48-pin UQFN 6mm x 6mm x 0.6mm
Fitted	U202	1	AITECC608A I2C (Google Cloud)	Microchip	AITECC608A-MAH1H-S	AITECC608A with an I2C Interface and a 8 Pin UDFN
Fitted	U203	1	MCP9808	Microchip	MCP9808T-EMC	±0.5A°C Maximum Accuracy Digital Temperature Sensor, I2C/SMBus

79

Approved

Notes