

Overview

ARIS EDGE is a development board oriented to designing Internet-of-Things applications, leveraging on Synergy platform and multi-protocol radio module.

ARIS EDGE board, in its -S3 variant, includes:

- MCU: Renesas Synergy S3 (pin-to-pin compatible with S1 device)
- Connectivity: multi-protocol 2.4 GHz radio module (Silicon Labs MGM111)
- Sensors: temperature, humidity, pressure, light, 9DOF inertial with sensor fusion capabilities
- Connectors: USB device, Arduino-compatible expansion connector
- Secure flash memory

Revision History

R0.1

- Project created

R1.0

- Project release for prototyping purpose

R1.1

- Production release
- Test components removed

R1.2

- Room for MGM12P added
- +5V routed to expansion connectors
- Secure NVM added
- On-board J-Link support extended to MGM programming

Manufacturing / Mechanical



Arrow Renesas Synergy Segger

+ FM1 + FM2

+ FM3 + FM4

+ FM5 + FM6

Notes

Title: **ARIS EDGE IoT Board - Arrow Electronics**

Section: Overview

Size: A4	Project code: R16P10PCB	Revision: 1.2
Date: 21/02/2018	Time: 16:58:19	Sheet 1 of 10
File: 01_Overview.SchDoc		



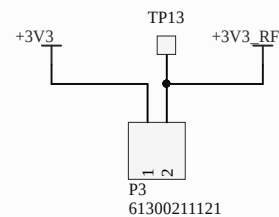
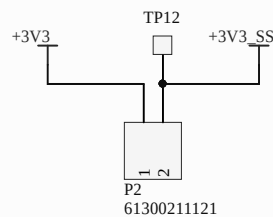
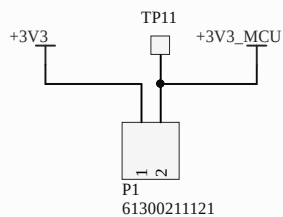
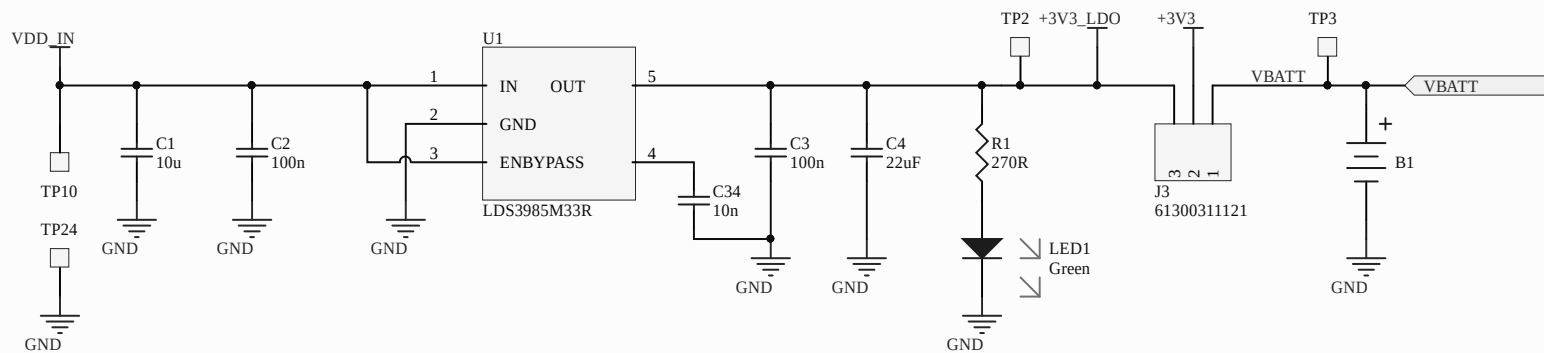
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Title: **ARIS EDGE IoT Board - Arrow Electronics**

Section: Power Supply

Size: A4

Project code: R16P10PCB

Revision: 1.2

Date: 21/02/2018 Time: 16:58:19

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File: 02_Power_Supply.SchDoc

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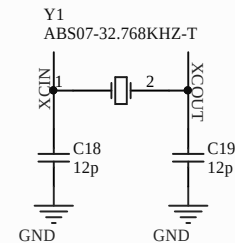
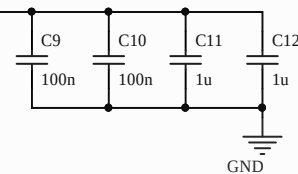
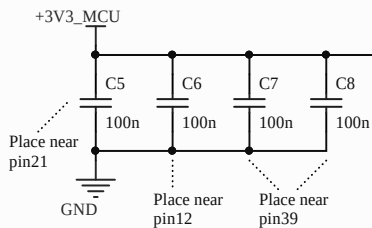
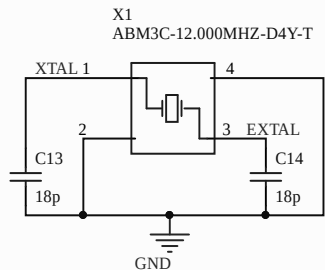
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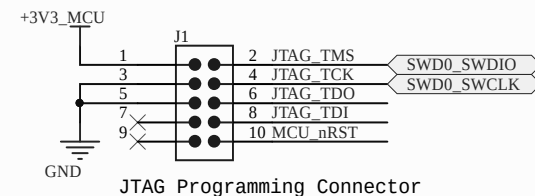
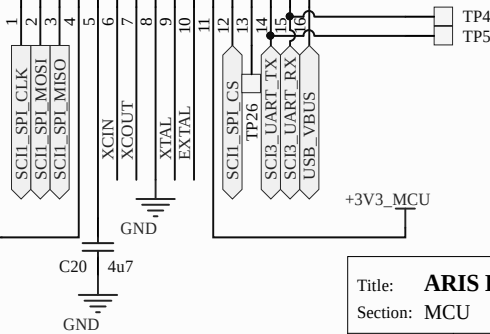
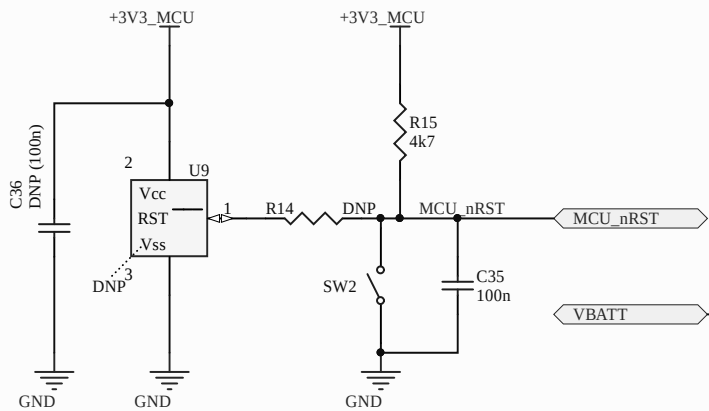
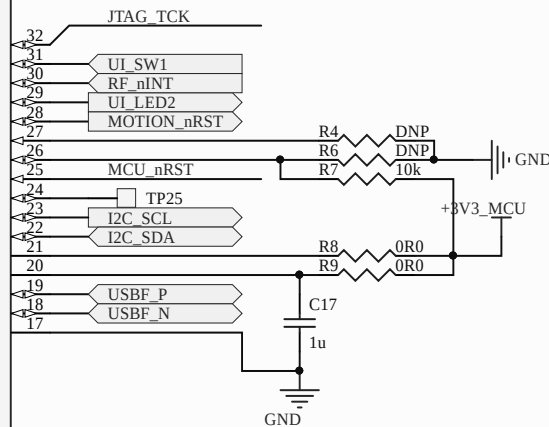
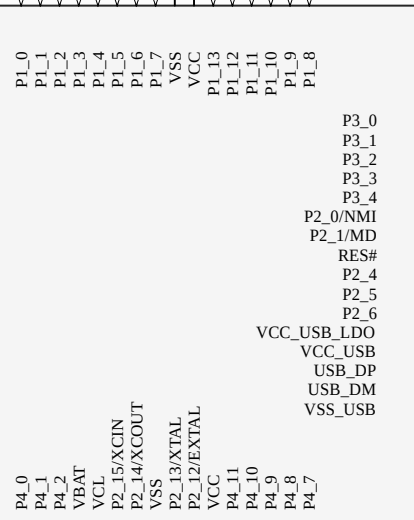
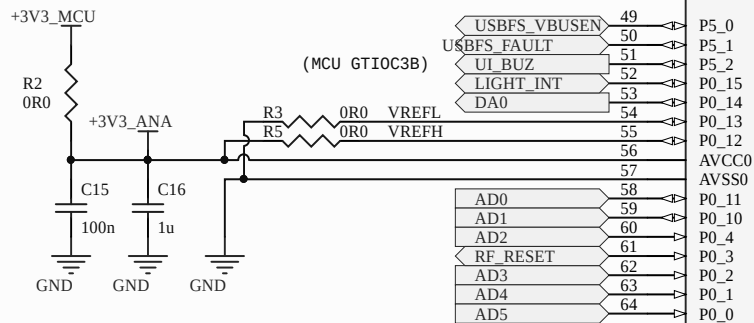
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SC0_UART_TX TX0
SC0_UART_RX RX0

U2
R7FS3A37A3A01CFM
Variant: R7FS124773A01CFM



Title: **ARIS EDGE IoT Board - Arrow Electronics**

Section: MCU

Size: A4 Project code: R16P10PCB

Date: 21/02/2018 Time: 16:58:19

File: 03_MCU.SchDoc

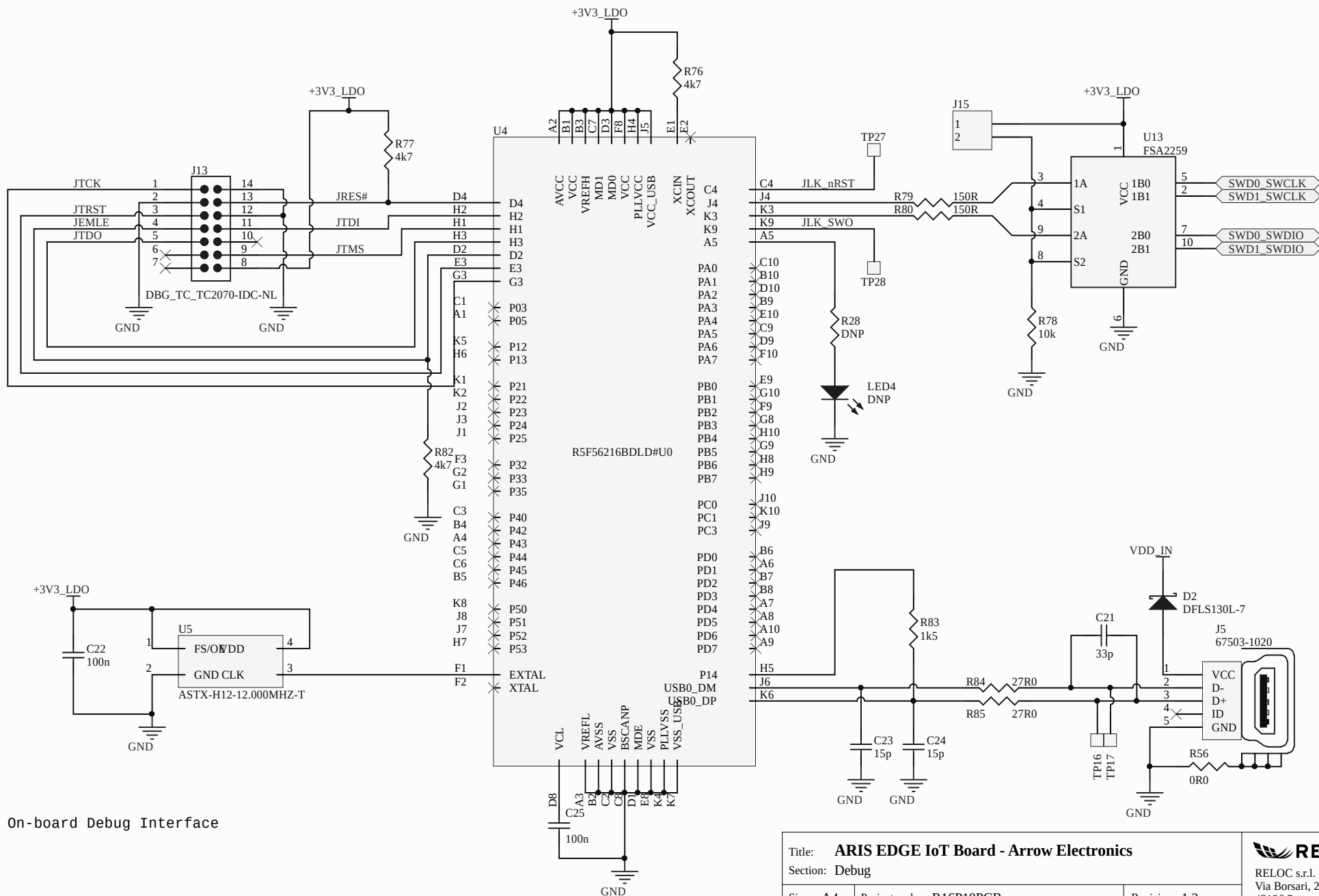
Revision: 1.2

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On-board Debug Interface

Title: **ARIS EDGE IoT Board - Arrow Electronics**

Section: Debug

Size: **A4** Project code: **R16P10PCB**

Revision: **1.2**

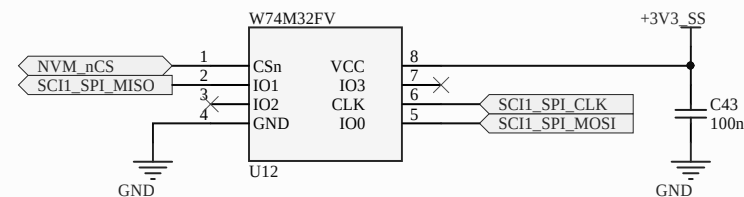
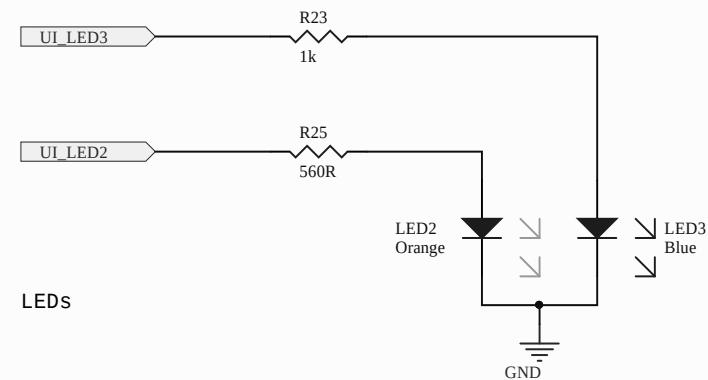
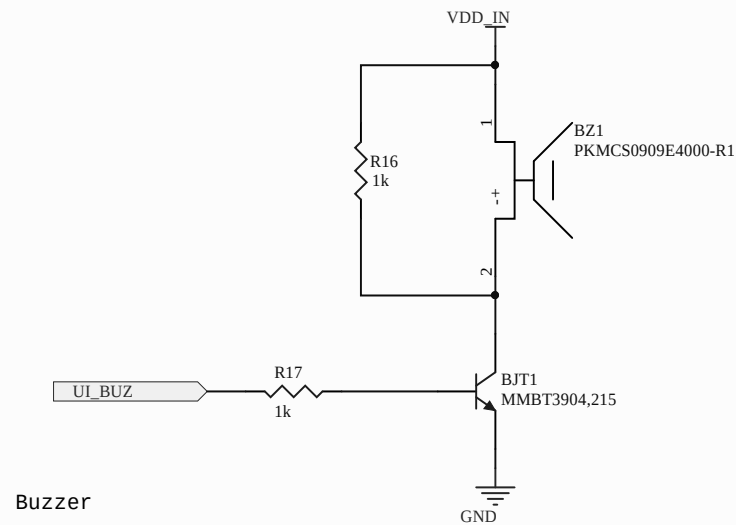
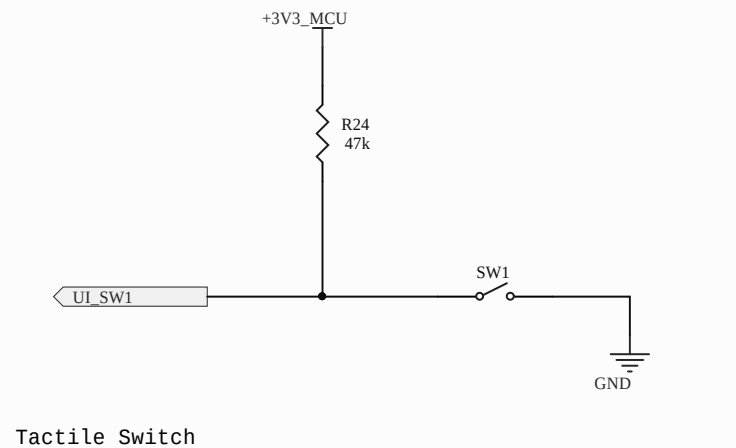
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Title: **ARIS EDGE IoT Board - Arrow Electronics**

Section: User Interface

Size: A4

Project code: R16P10PCB

Revision: 1.2

Date: 21/02/2018 Time: 16:58:20

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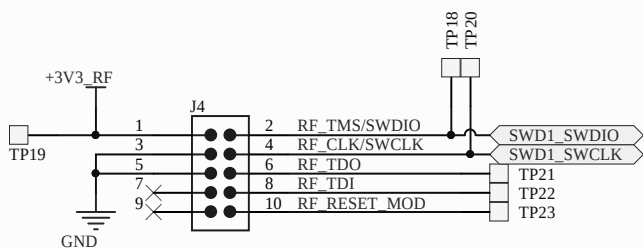
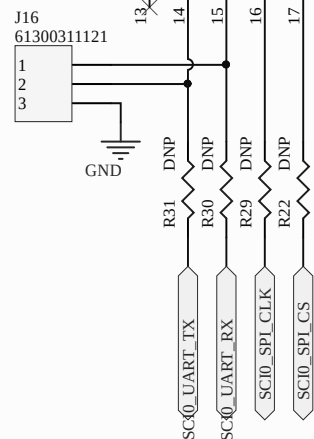
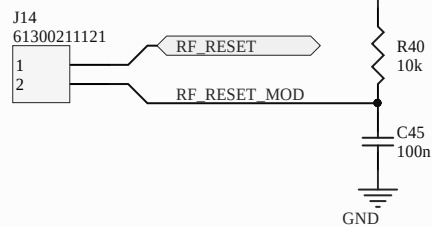
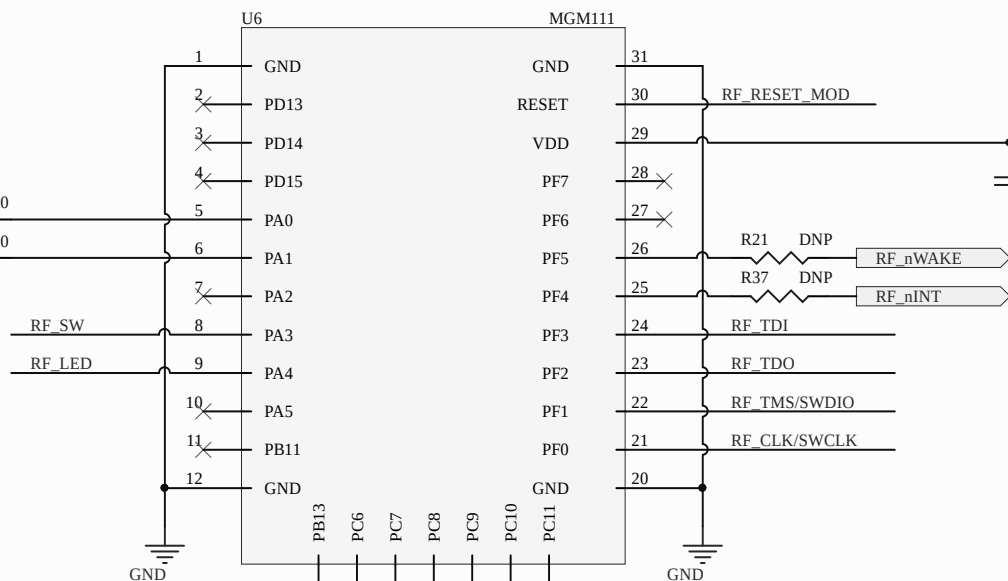
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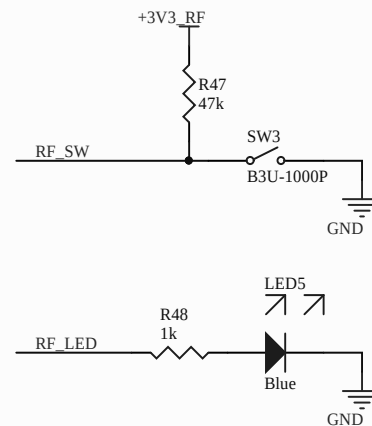
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Multi-Protocol Wireless Interface

(MCU UART1_RX) SCI3_UART_RX
(MCU UART1_TX) SCI3_UART_TX



JTAG Programming Connector



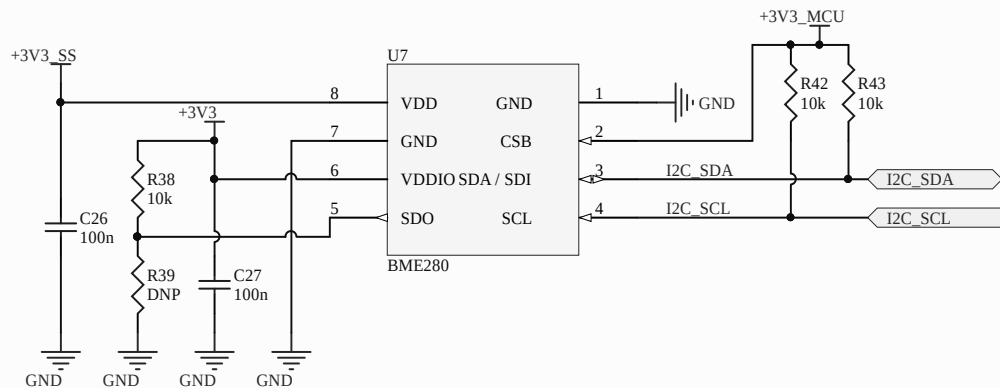
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Section: Multi-Protocol Wireless Module

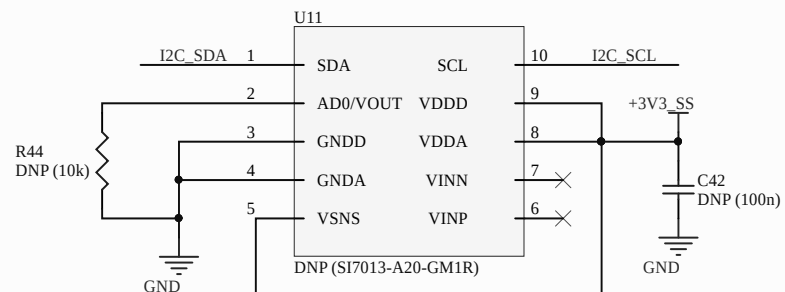
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Date: 21/02/2018	Time: 16:58:20	Sheet 7 of 10
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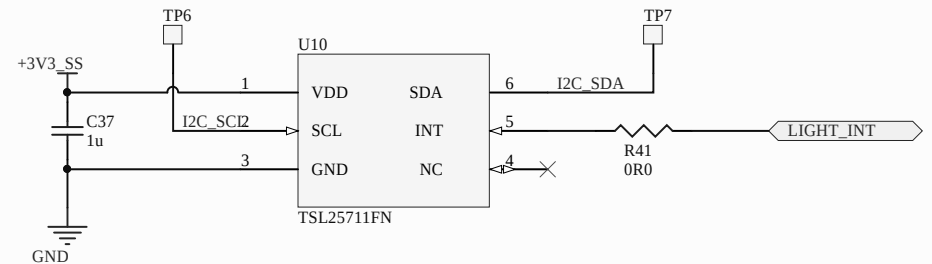
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P/T/H Sensor
(I2C ADDR = 0x77)



T/H Sensor
DO NOT PLACE



Light Sensor
(TSL25711FN: I2C ADDR = 0x39)
(TSL25715FN: I2C ADDR = 0x29)

Title: **ARIS EDGE IoT Board - Arrow Electronics**

Section: Ambient Sensors

Size: A4 Project code: R16P10PCB

Revision: 1.2

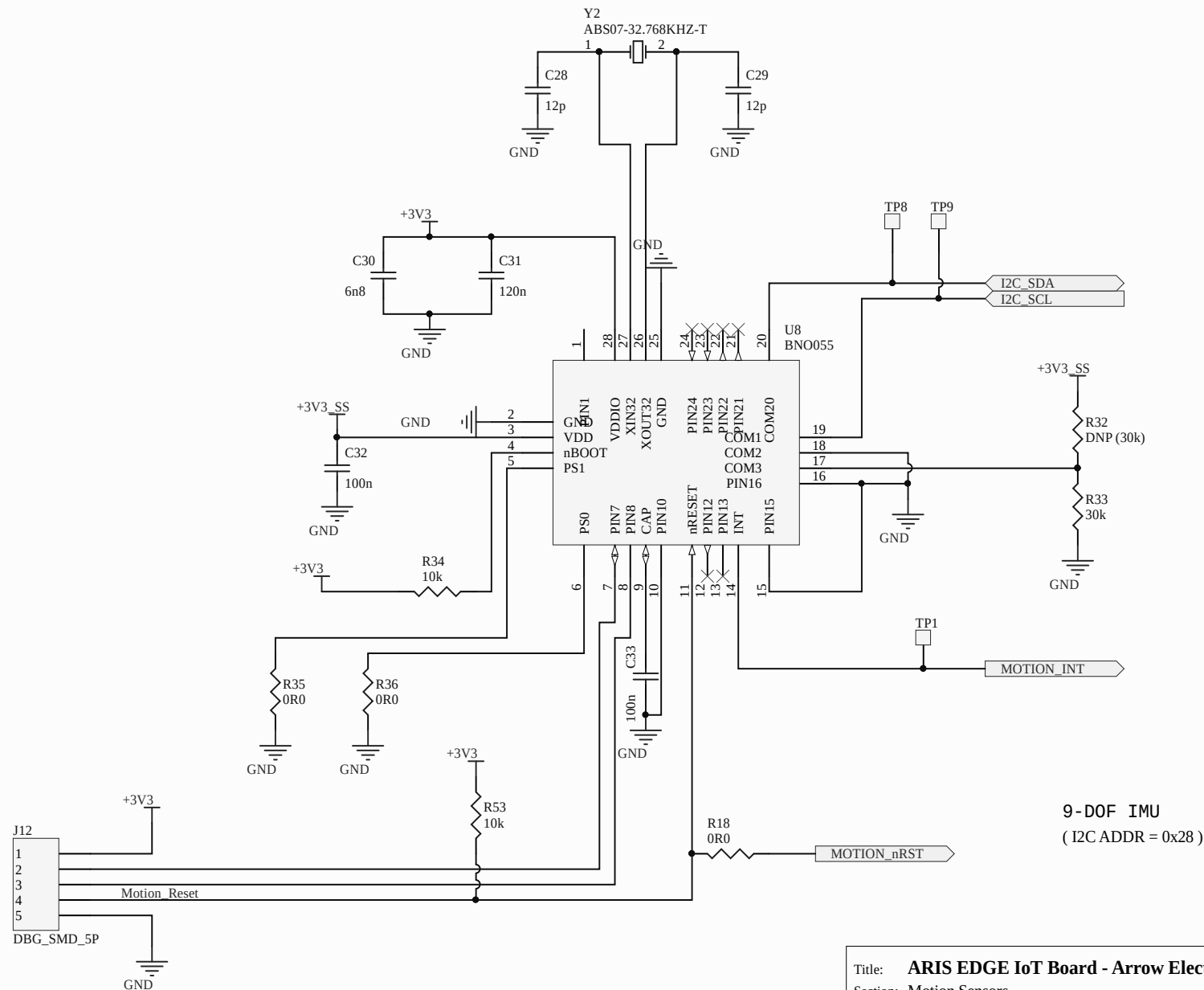
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Title: **ARIS EDGE IoT Board - Arrow Electronics**

Section: Motion Sensors

Size: A4

Project code: R16P10PCB

Revision: 1.2

Date: 21/02/2018

Time: 16:58:20

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File: 09_Sensors_Motion.SchDoc

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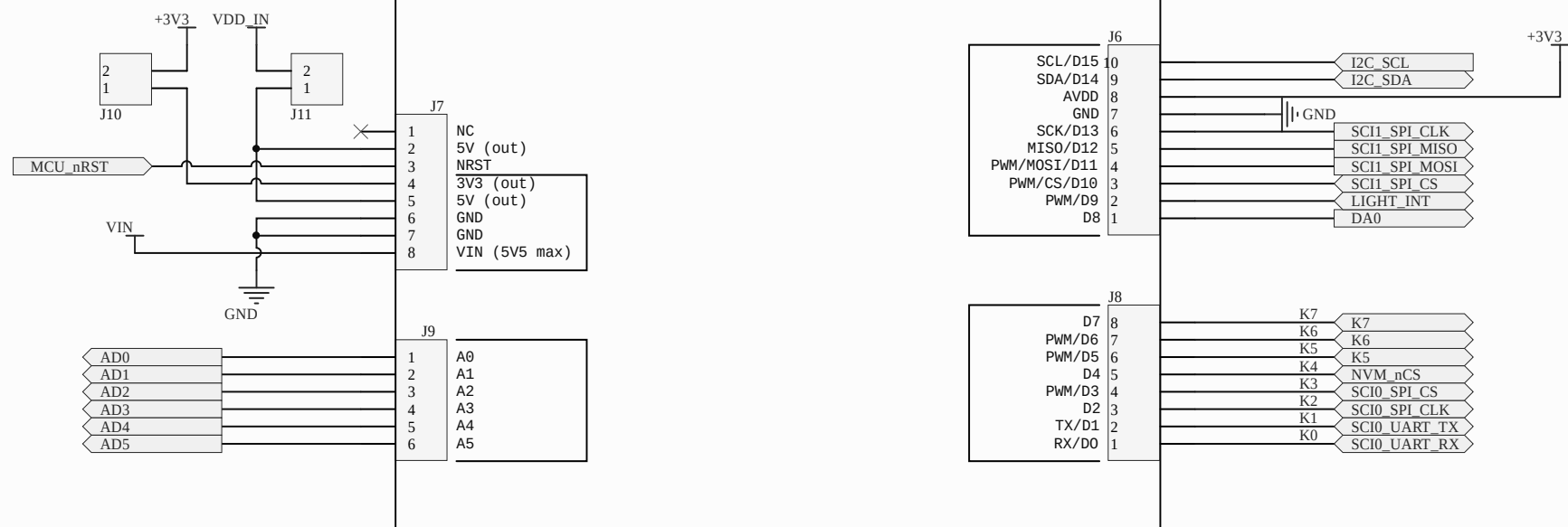
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Arduino UNO Shield Connector

Title: **ARIS EDGE IoT Board - Arrow Electronics**

Section: Connectors

Size: A4

Project code: R16P10PCB

Revision: 1.2

Date: 21/02/2018 Time: 16:58:20

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File: 10_Connectors.SchDoc

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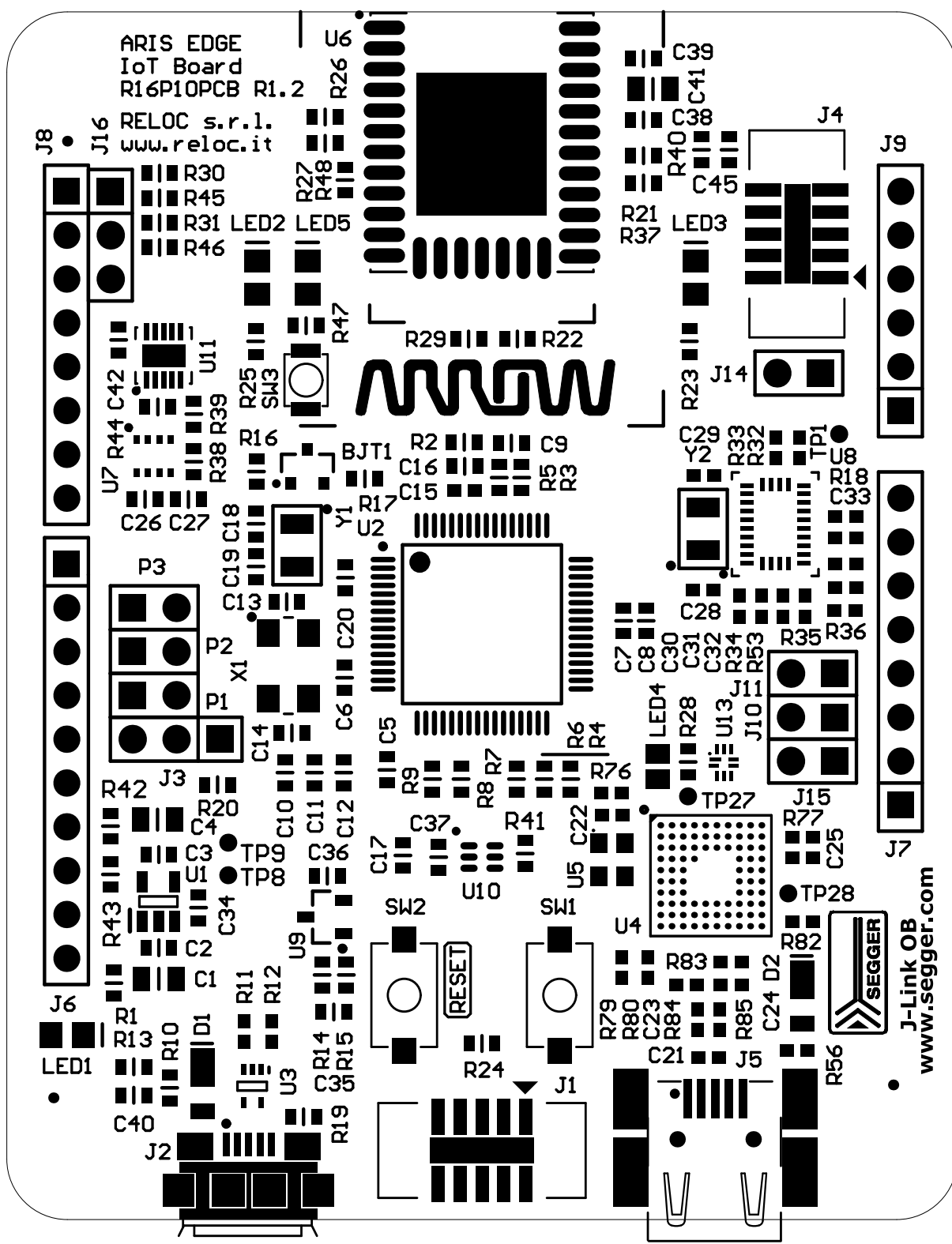
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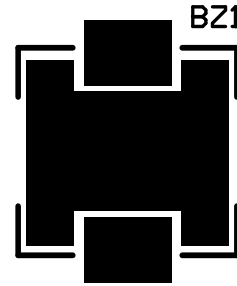
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DESIGN BY
RELOC
RENESAS
synergy™



I00
I01
I02

PC7

PC6

GND

I03

I04

I05

I08

I09

I010

I011

I012

TP13

TP11

I013
GND
AVDD
SDA
SCL

C43

U12

SDA
SCL
TP2

TP15
TP14

AD5
AD4
AD3
AD2
AD1
AD0

TP23
TP22
TP21
TP20
TP18
TP19

VIN
GND
GND
+5V
+3V3
NRST
REF

J12

R78

B1

J13

TP24
TP10
TP3
TP16
TP17

ARIS
EDGE

ARIS EDGE
IoT board
R16P10PCB R1.2

TP25
TP26
TP5
TP4

