

Overview

ARIS is a development board oriented to Internet-of-Things application design, based on Renesas Synergy platform.

ARIS includes

- Renesas Synergy Cortex CPU
- On-board RAM and Flash memories
- Ethernet connectivity
- Wi-Fi module
- Bluetooth Low-Energy (4.1) module
- NFC transponder
- Inertial and environmental sensors

Revision History

- R0.1
 - ARIS schematic created
- R0.9
 - ARIS schematic - draft status
- R0.9.1
 - Fiducials added
 - BLE optional SPI connection added
- R1.0
 - First prototypes
- R1.1
 - Production revision
- R1.2
 - Sensors supply minor revision

Manufacturing / Mechanical

- | | |
|----------|----------|
| +
FM1 | +
FM2 |
| +
FM3 | +
FM4 |
| +
FM5 | +
FM6 |

Notes



Title: **ARIS Board**

Section: Overview

Size: A4

Project code: PCBR15P02

Revision: R1.2.0

Date: 18/11/2016

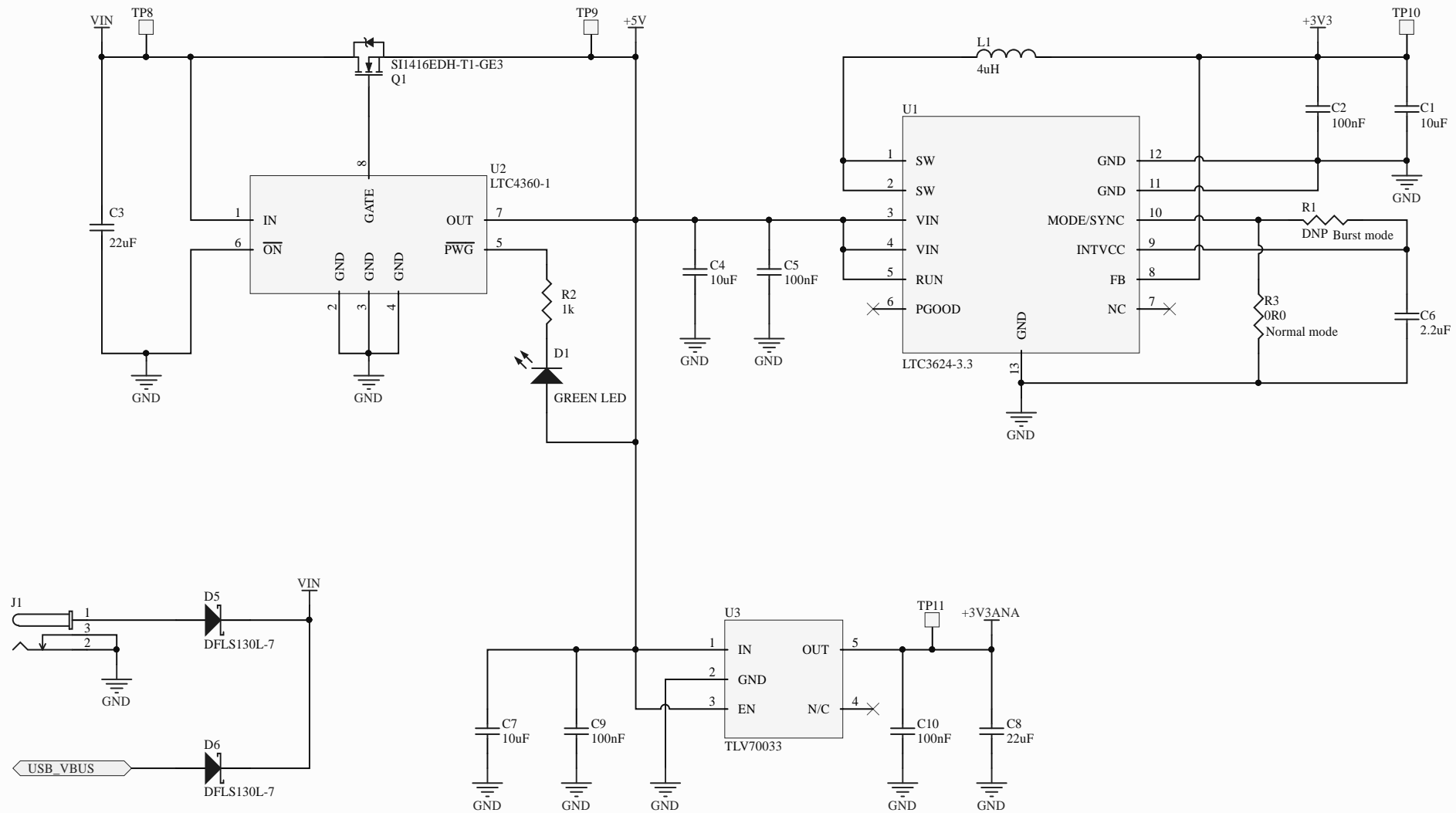
Time: 16:35:36

Sheet 1 of 14

File: Overview.SchDoc



RELOC s.r.l.
Via Borsari 23/A
43126 Parma
Italy
PIVA IT01212900110



Title: **ARIS Board**

Section: **Power Supply**

Size: **A4** Project code: **PCBR15P02**

Revision: **R1.2.0**

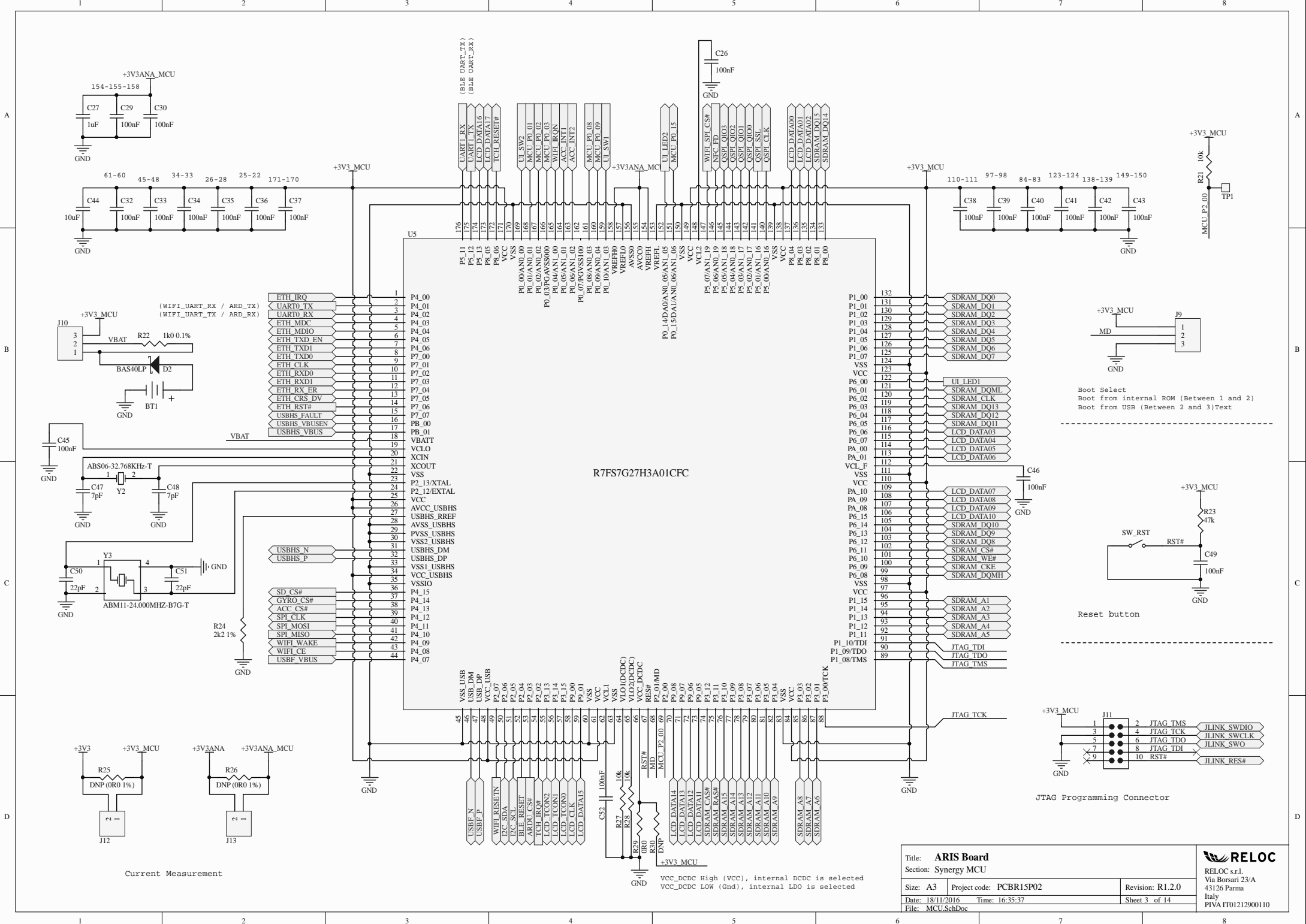
Date: **18/11/2016** Time: **16:35:36**

Sheet **2** of **14**

File: **PowerSupply.SchDoc**

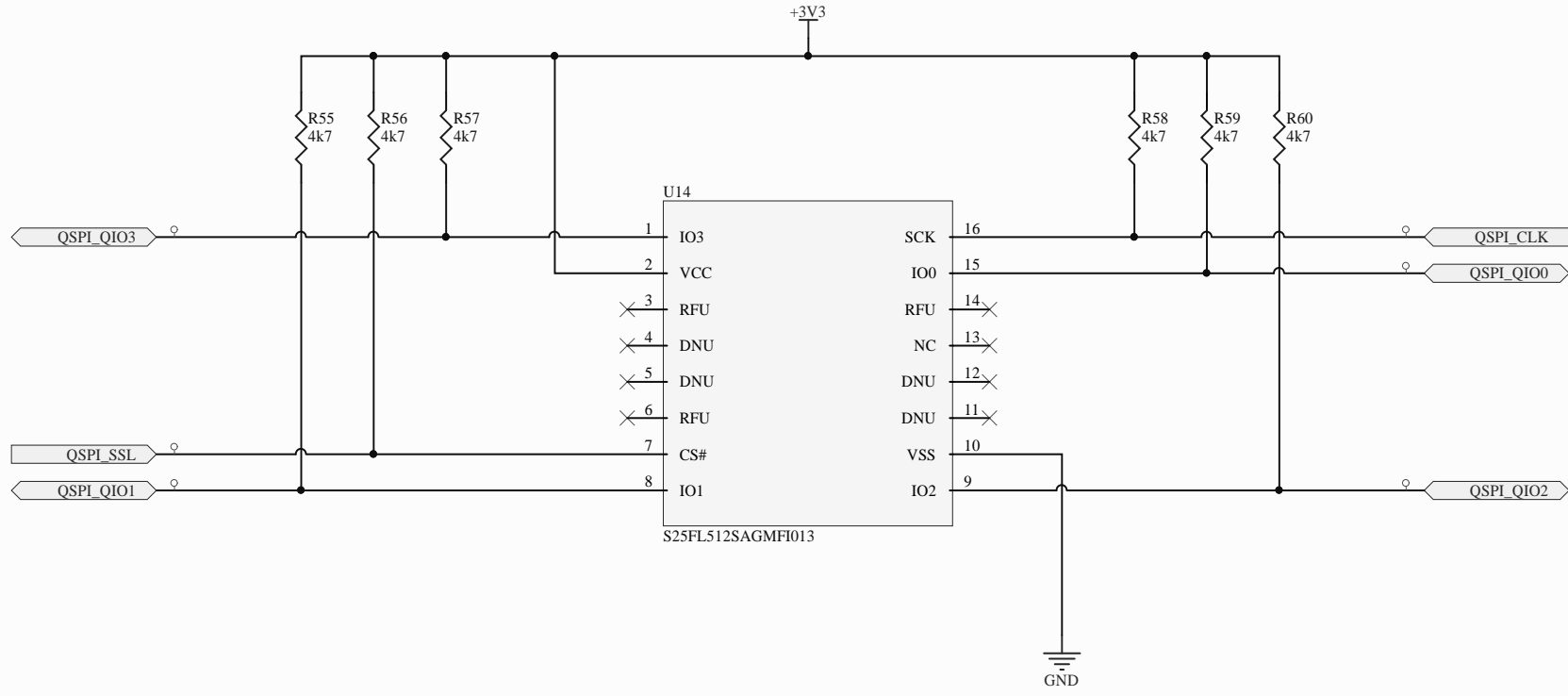


RELOC s.r.l.
Via Borsari 23/A
43126 Parma
Italy
PIVA IT01212900110



Title: ARIS Board		Revision: R1.2.0	
Section: Synergy MCU		Time: 16:35:37	
Size: A3	Project code: PCBRI5P02	Sheet 3 of 14	
Date: 18/11/2016	File: MCU.SchDoc	RELOC RELOC s.r.l. Via Borsari 23/A 43126 Parma Italy PIVA.IT01212900110	

On-Board Memory - 512 Mbit Flash

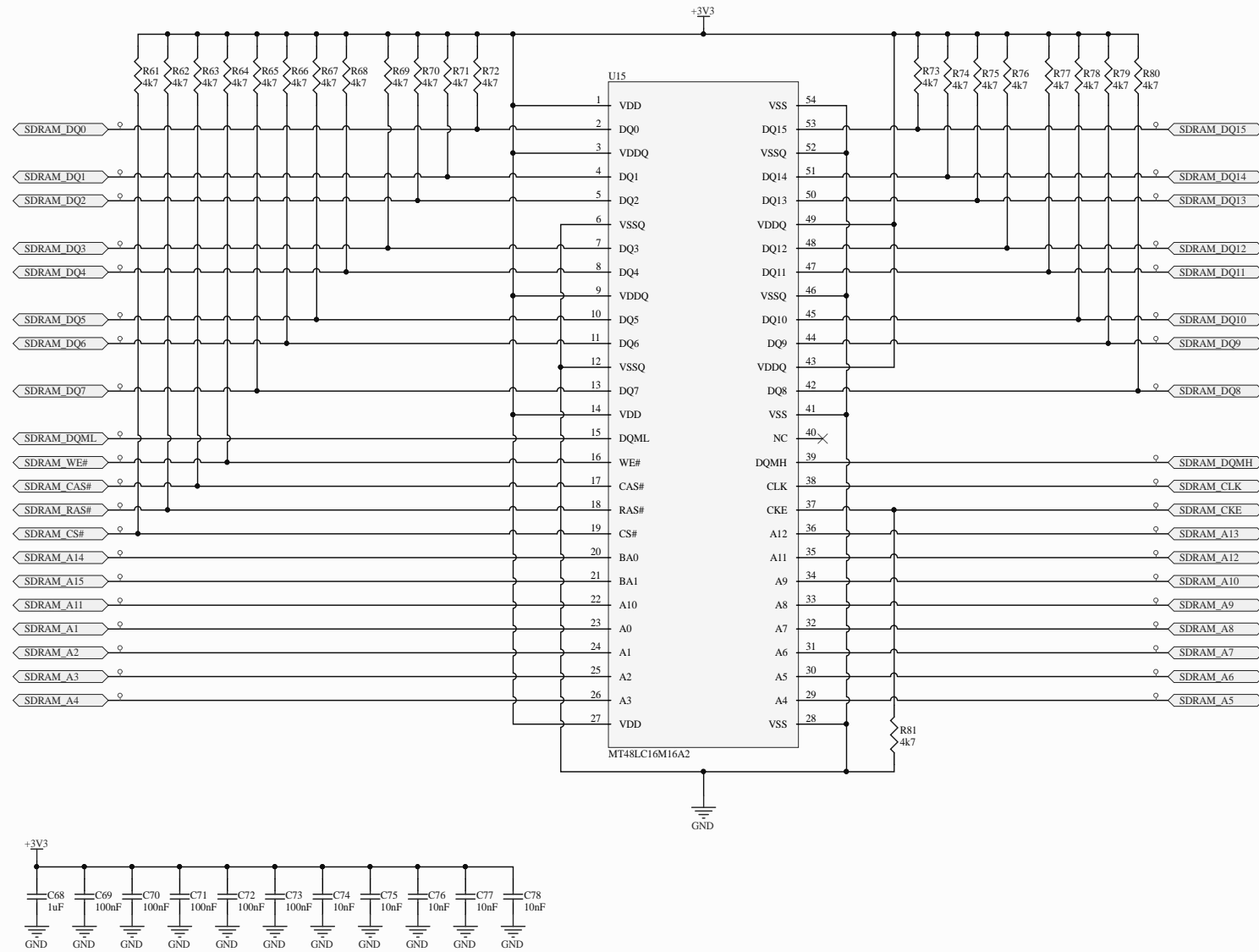



Title: **ARIS Board**
 Section: Flash Memory

Size: A4	Project code: PCBR15P02	Revision: R1.2.0
Date: 18/11/2016	Time: 16:35:37	Sheet 4 of 14
File: Flash.SchDoc		

RELOC
 RELOC s.r.l.
 Via Borsari 23/A
 43126 Parma
 Italy
 PIVA IT01212900110

On-Board Memory - 256 Mbit RAM



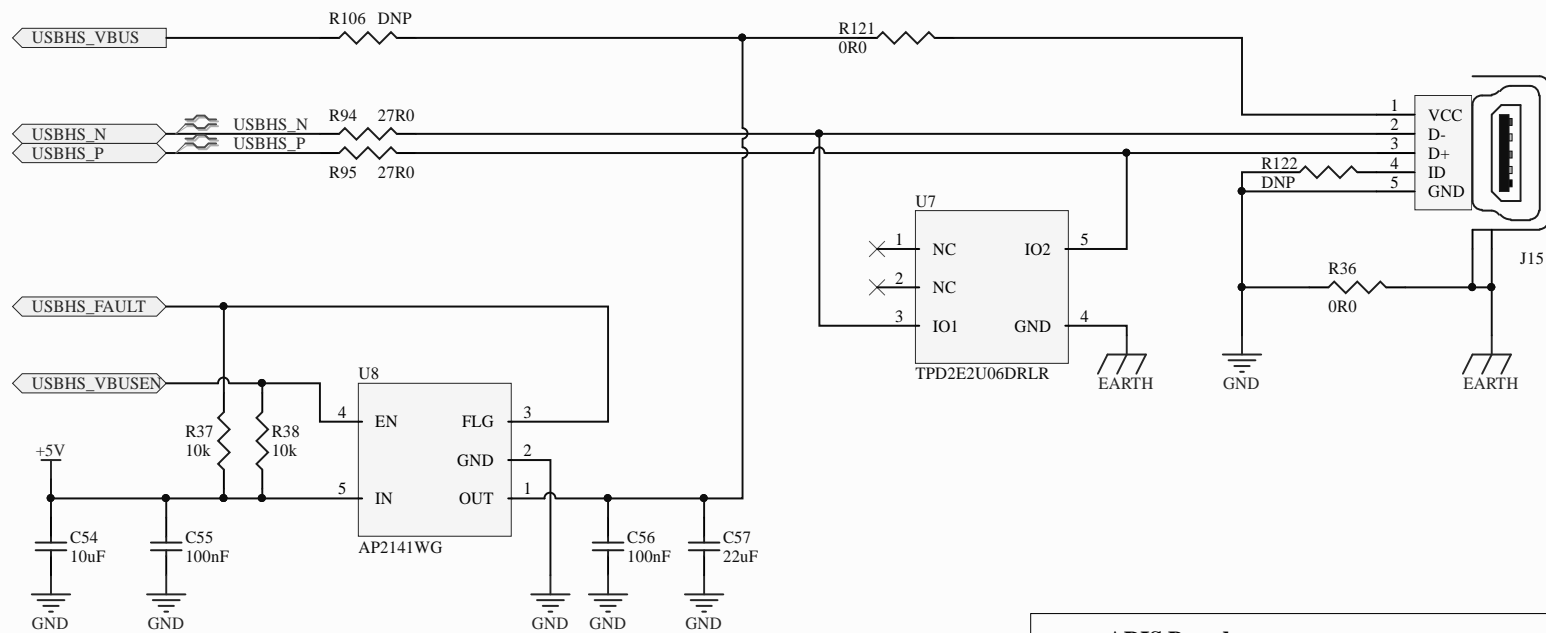
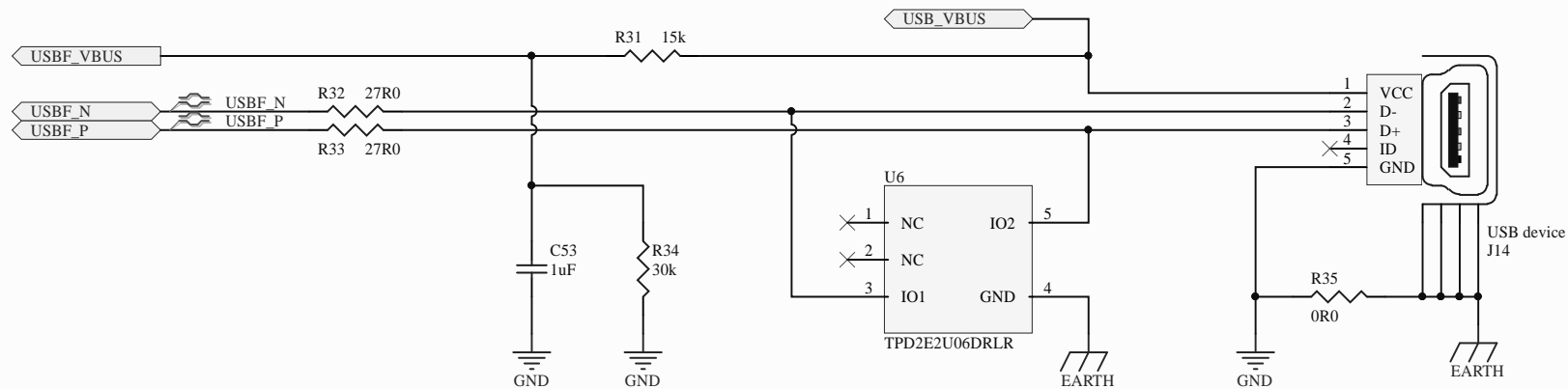
Title: ARIS Board			 RELOC s.r.l. Via Borsari 23/A 43126 Parma Italy PIVA.IT01212900110
Section: RAM			
Size: A3	Project code: PCBR15P02	Revision: R1.2.0	
Date: 18/11/2016	Time: 16:35:37	Sheet 5 of 14	
File: RAM.SchDoc			

1

2

3

4



Title: **ARIS Board**

Section: **USB**

Size: **A4** | Project code: **PCBR15P02**

Revision: **R1.2.0**

Date: **18/11/2016** | Time: **16:35:37**

Sheet **6** of **14**

File: **USB.SchDoc**



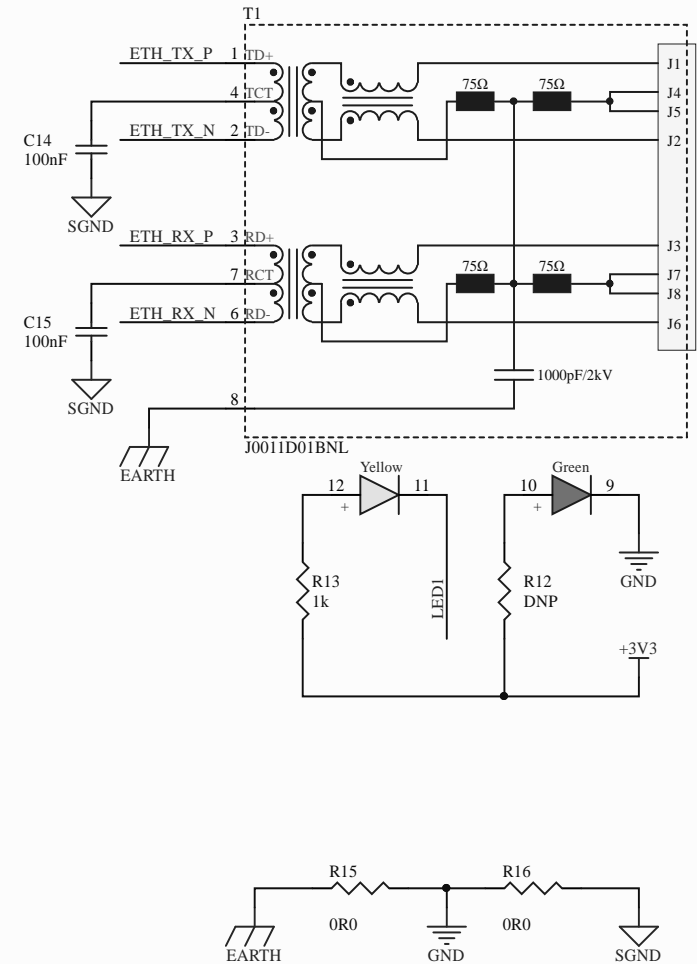
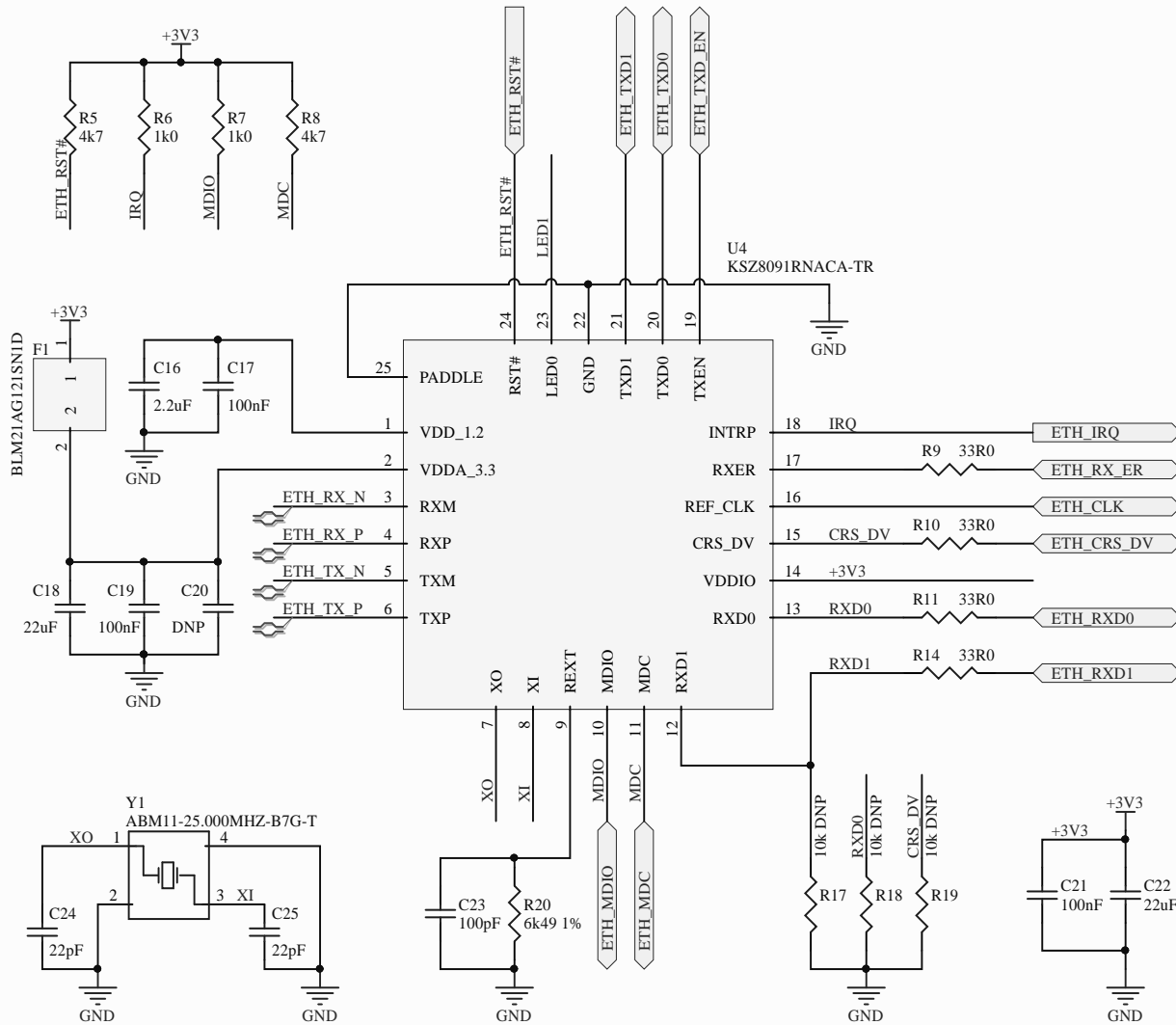
RELOC s.r.l.
Via Borsari 23/A
43126 Parma
Italy
PIVA IT01212900110

1

2

3

4



Ethernet

1. The differential pair (TXP/N or RXP/N) should be routed using 5-mil trace width and 5-mil trace spacing in same length to create a 100ohm controlled trace.
2. Keep both traces of each differential pair as identical to each other as possible.
3. Route each differential pair on the same PCB layer. Avoid vias and pads in the path.
4. Route both TXP/N and RXP/N pairs away from all other signals, with at least four times of 5-mil trace space from other traces.

Title: **ARIS Board**

Section: Ethernet

Size: A4 Project code: PCBR15P02

Revision: R1.2.0

Date: 18/11/2016 Time: 16:35:37

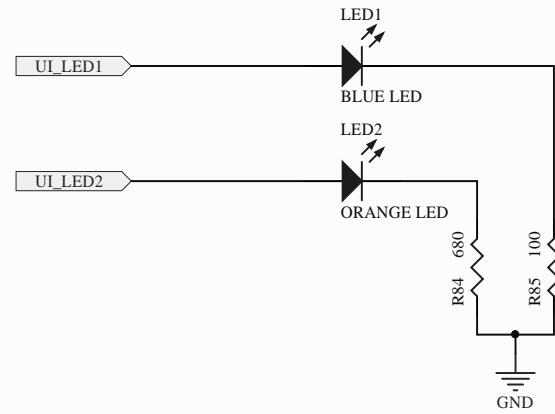
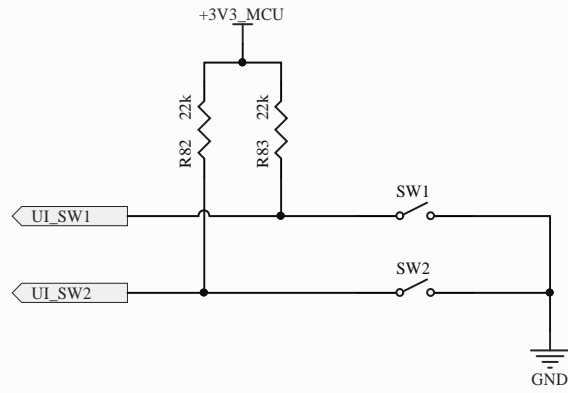
Sheet 7 of 14

File: Ethernet.SchDoc

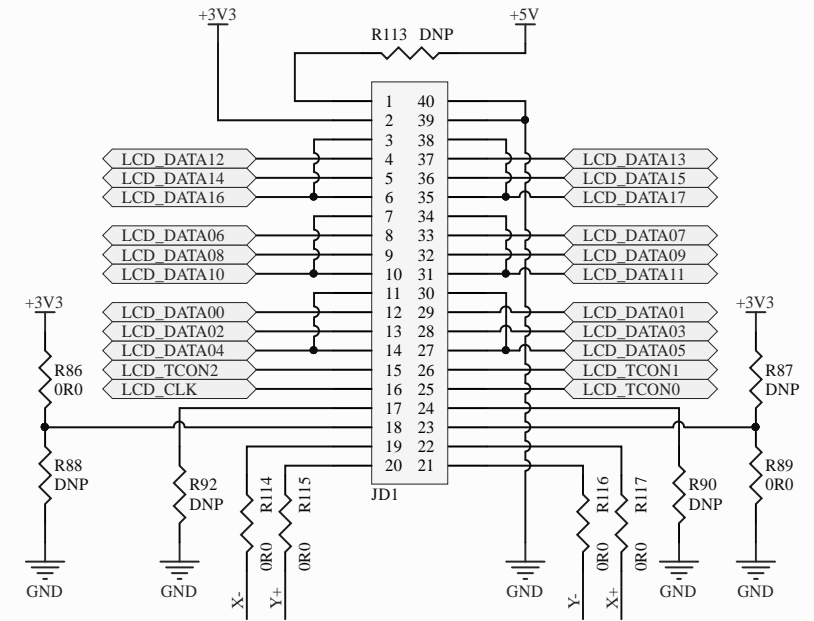
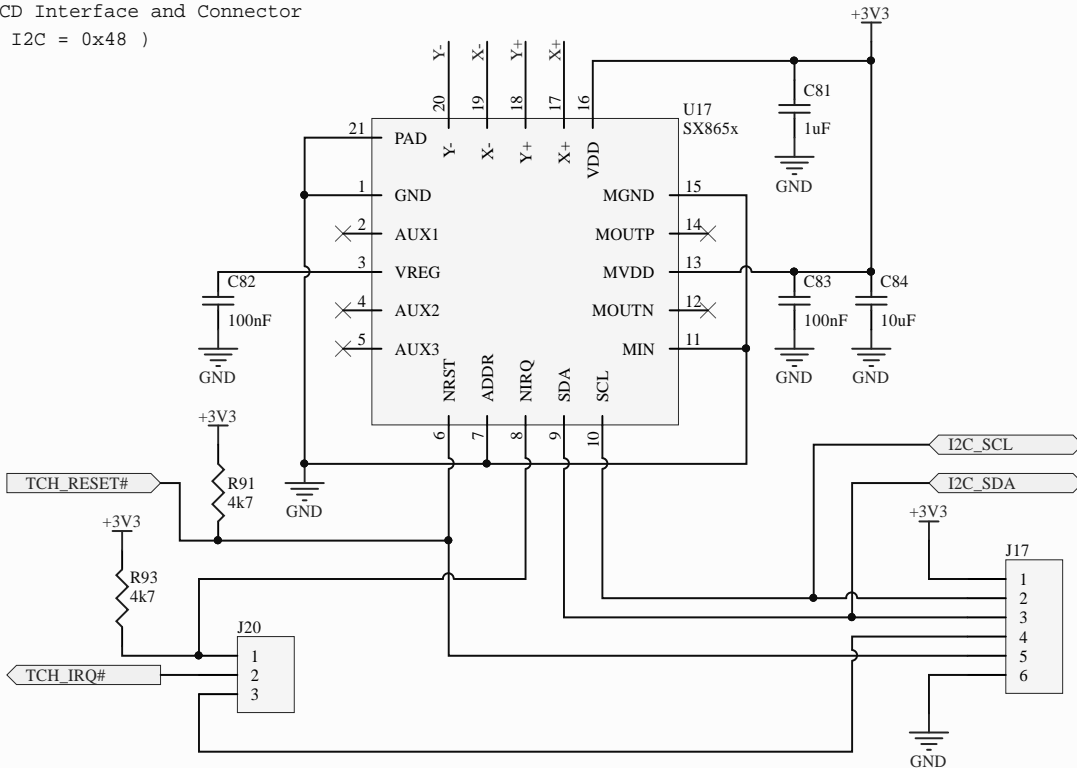


RELOC s.r.l.
Via Borsari 23/A
43126 Parma
Italy
PIVA IT01219900110

LEDs and Switches



LCD Interface and Connector
(I2C = 0x48)



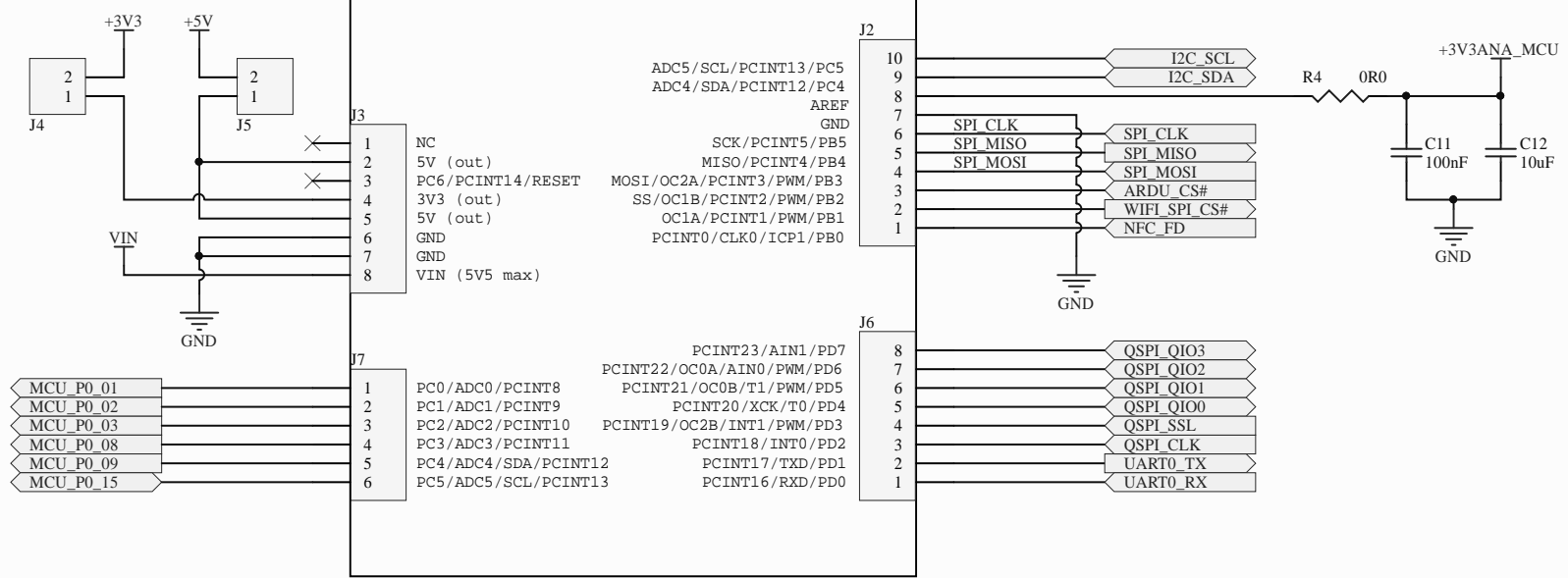
Title: **ARIS Board**
Section: User Interface

Size: A4 | Project code: PCBR15P02
Date: 18/11/2016 | Time: 16:35:37
File: UserInterface.SchDoc

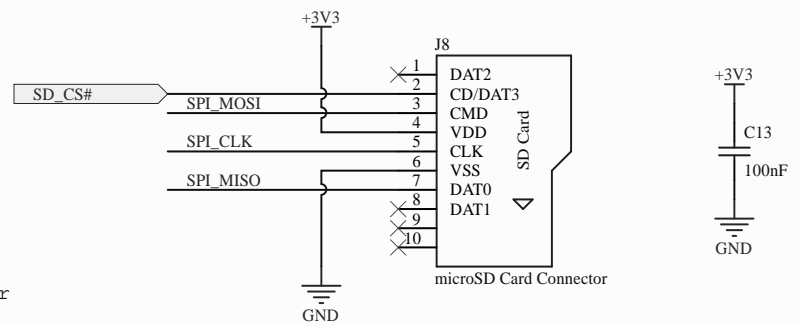
Revision: R1.2.0
Sheet 8 of 14

RELOC
RELOC s.r.l.
Via Borsari 23/A
43126 Parma
Italy
PIVA IT01212900110

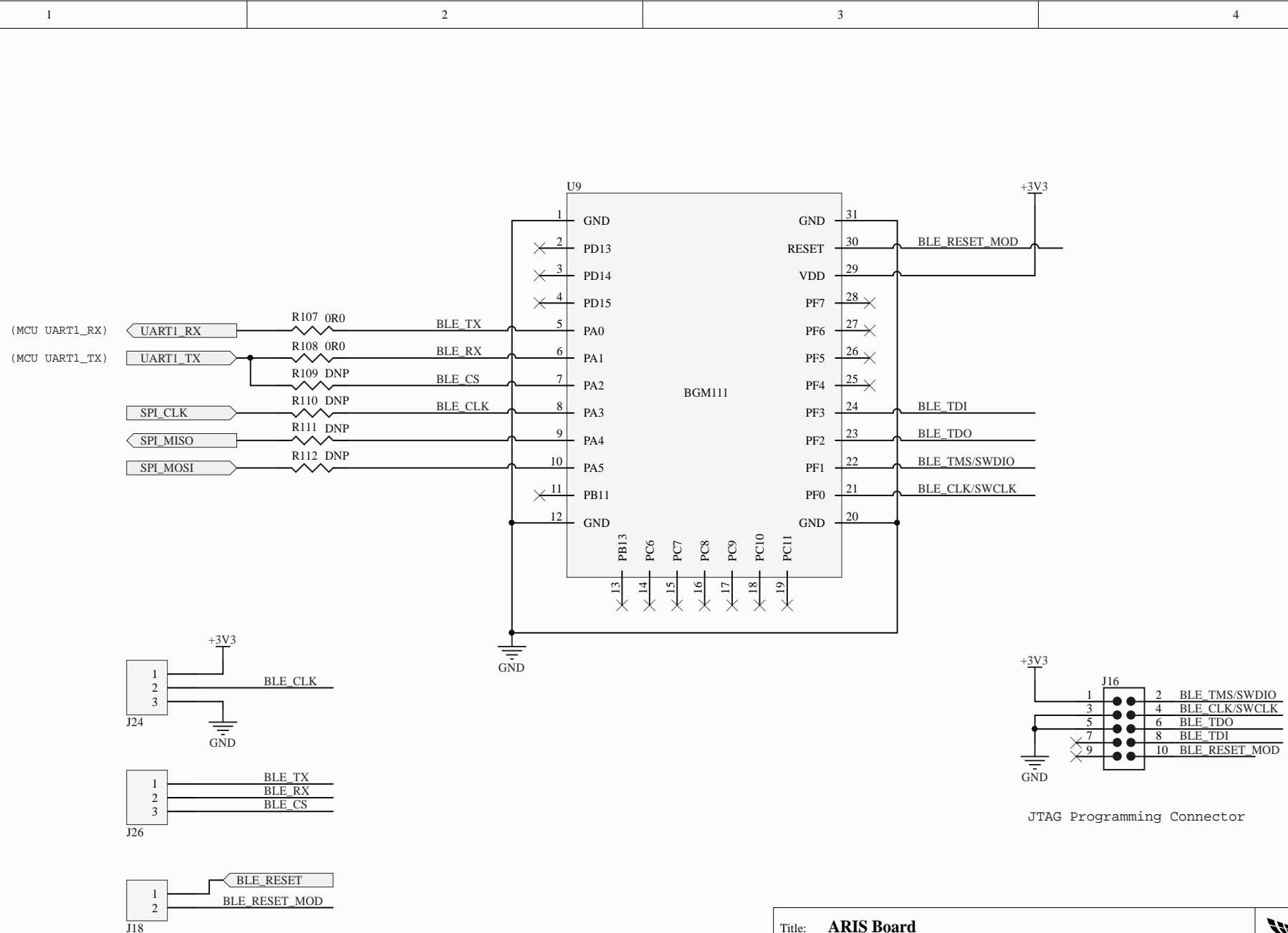
Arduino UNO Shield Connector




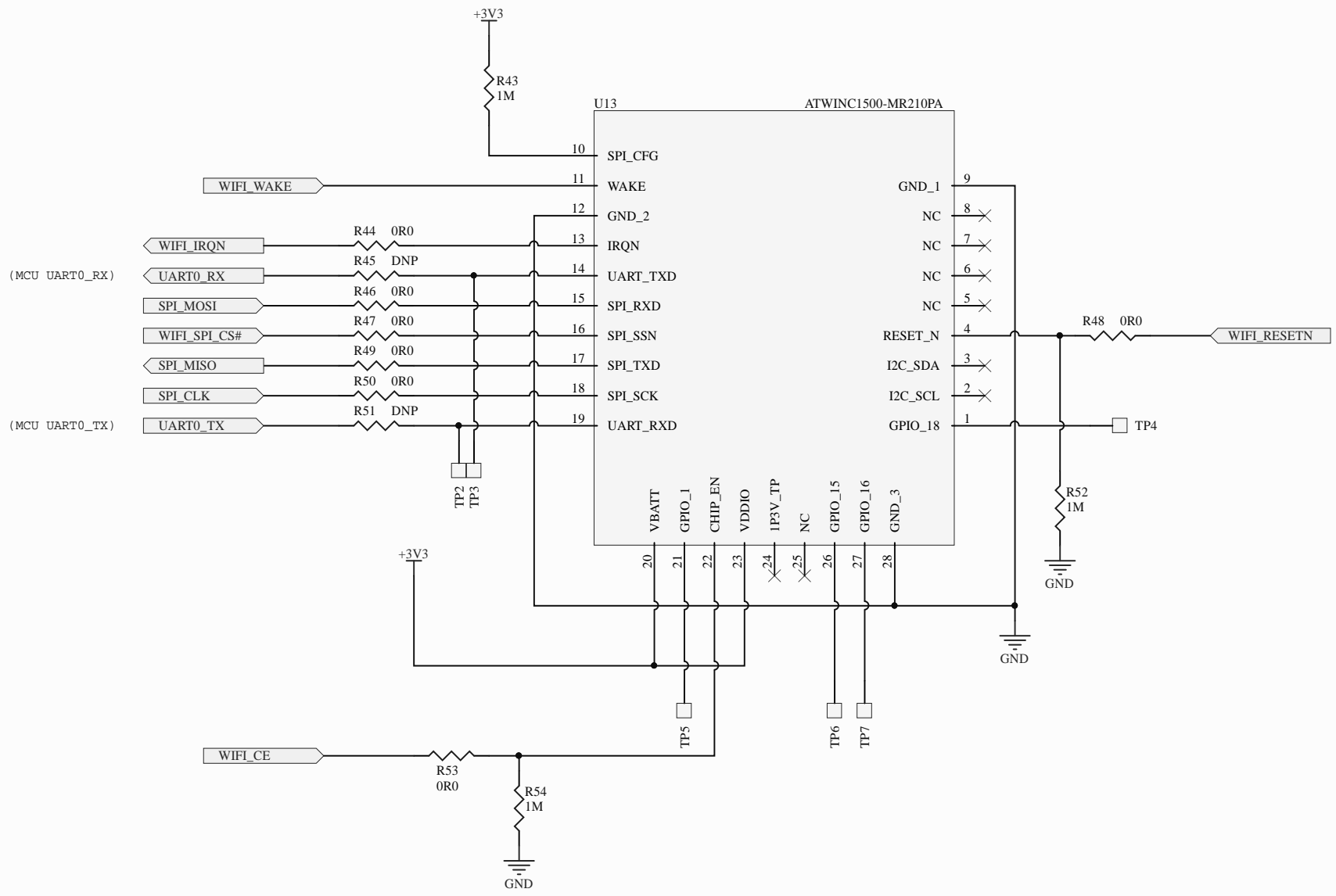
SD Connector




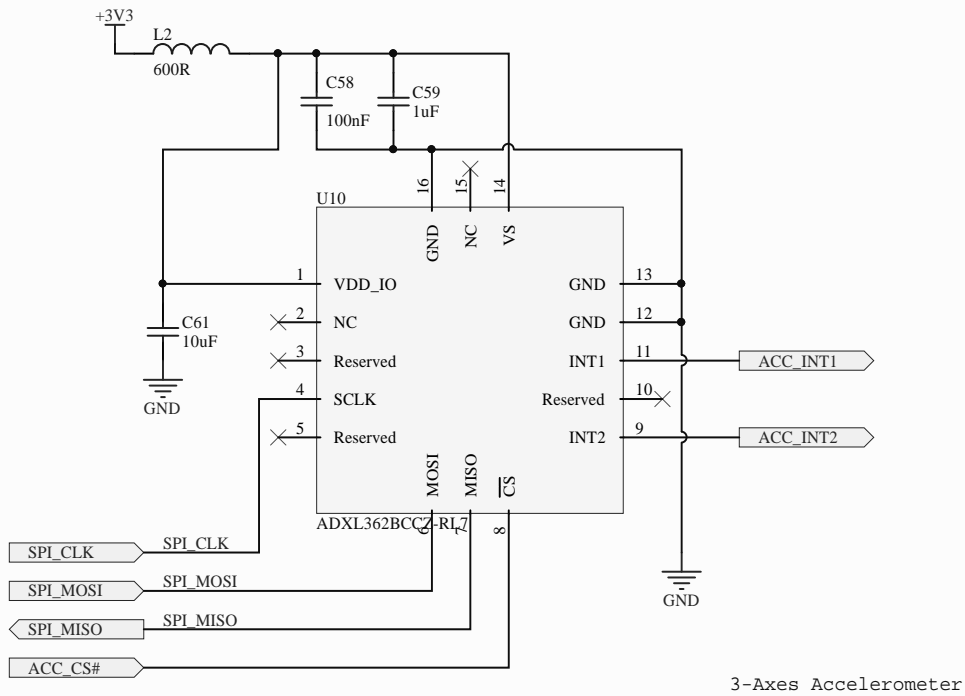
Title: ARIS Board		 RELOC s.r.l. Via Borsari 23/A 43126 Parma Italy PIVA IT01212900110
Section: Connectors		
Size: A4	Project code: PCBR15P02	Revision: R1.2.0
Date: 18/11/2016	Time: 16:35:38	Sheet 9 of 14
File: Connectors.SchDoc		



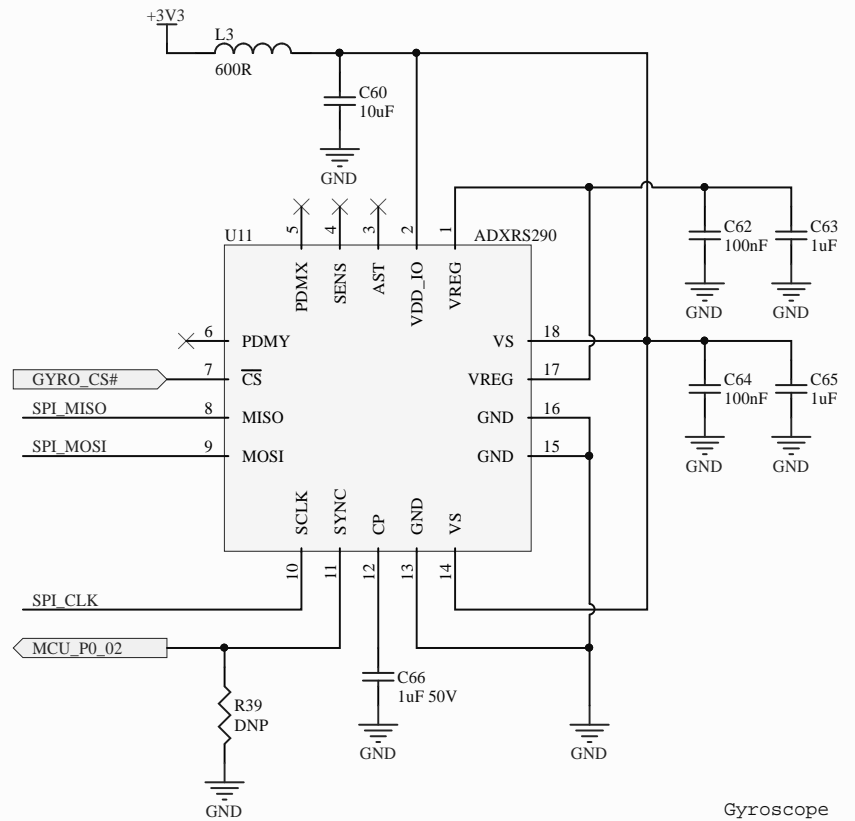
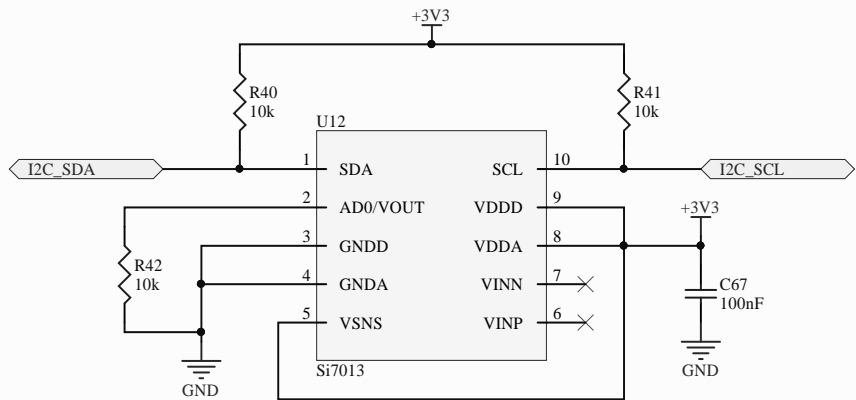
Title: ARIS Board			 RELOC s.r.l. Via Borsari 23/A 43126 Parma Italy PIVA IT01212900110
Section: Bluetooth Low Energy			
Size: A4	Project code: PCBR15P02	Revision: R1.2.0	
Date: 18/11/2016	Time: 16:35:38	Sheet 10 of 14	
File: BLE.SchDoc			



Title: ARIS Board			 RELOC s.r.l. Via Borsari 23/A 43126 Parma Italy PIVA IT01212900110
Section: Wi-Fi			
Size: A4	Project code: PCBR15P02	Revision: R1.2.0	
Date: 18/11/2016	Time: 16:35:38	Sheet 11 of 14	
File: WiFi.SchDoc			



Temperature and Humidity Sensor
(I2C = 0x40)



Title: **ARIS Board**

Section: Sensors

Size: A4 Project code: PCBR15P02

Revision: R1.2.0

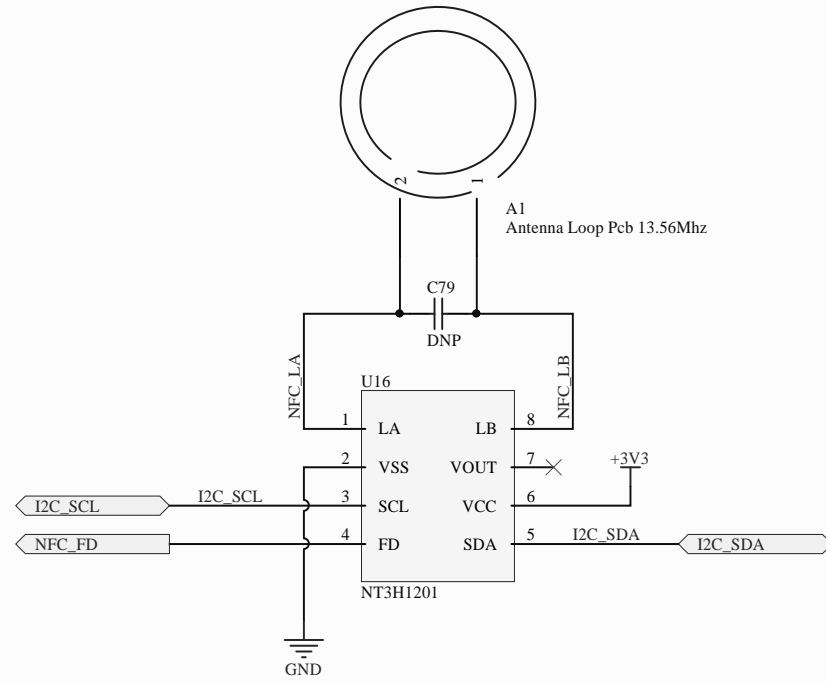
Date: 18/11/2016 Time: 16:35:38

Sheet 12 of 14

File: Sensors.SchDoc

RELOC


RELOC s.r.l.
Via Borsari 23/A
43126 Parma
Italy
PIVA IT01212900110

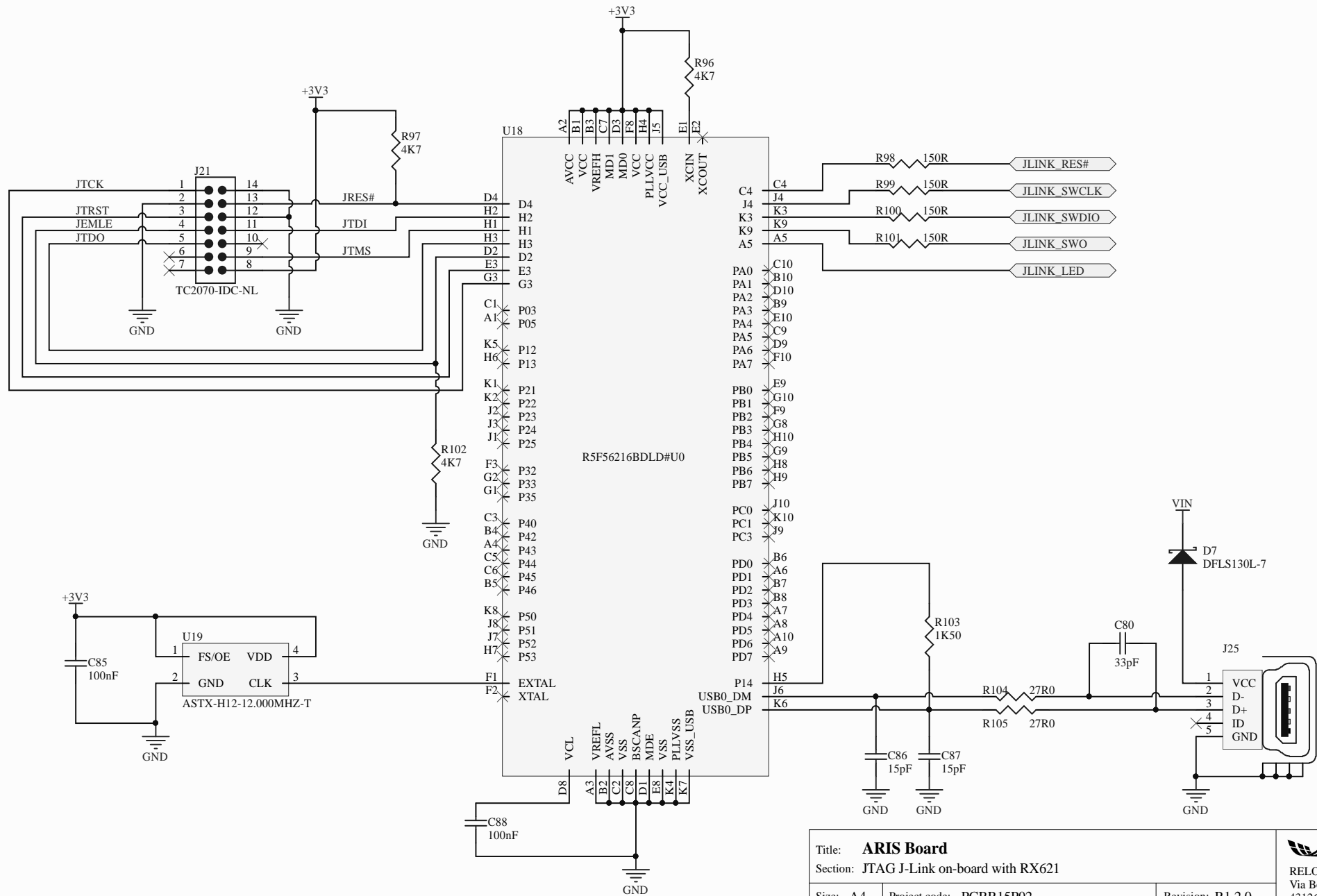


NFC Transponder
 (I2C = 0x55)



Ask ARROW for Apple Mfi details

Title: ARIS Board		 RELOC s.r.l. Via Borsari 23/A 43126 Parma Italy PIVA IT01212900110
Section: NFC_Mfi		
Size: A4	Project code: PCBR15P02	Revision: R1.2.0
Date: 18/11/2016	Time: 16:35:38	Sheet 13 of 14
File: NFC.SchDoc		



Title: ARIS Board			 RELOC s.r.l. Via Borsari 23/A 43126 Parma Italy PIVA IT01212900110
Section: JTAG J-Link on-board with RX621			
Size: A4	Project code: PCBR15P02	Revision: R1.2.0	
Date: 18/11/2016	Time: 16:35:38	Sheet 14 of 14	
File: JLink.SchDoc			