Overview

HANI board focuses on HMI (Human Machine Interface) supporting multiple display sizes and connectivity protocols with the a multi-protocol wireless module, a Wi-Fi module, a NFC reader, CAN, and Ethernet and USB interfaces. On-board sensors make the HANI board a robust IoT kit.

Revision History

R0.1
- Project created

R1.0
- Project released for prototypes

R1.1
- Fix in SDRAM connection
- Changed resistor value: R84, R86, R46, R44, R215, R68, R69, R23, R26, R81, R82
- Fix in NFC crystal
- Fix in display power
- Fix in SD card connection
- Minor changes in schematic and layout

R1.2
- Changed opamp (U14) in order to fix the bug regarding to VCOM signal and the LCD (7 inches) stability
- Arduino I2C fixed
- R44 changed in 649k 1%

Manufacturing / Mechanical

RELOC

ARROW ELECTRONICS, INC.

FM1 FM2

FM3 FM4

FM5 FM6

Notes

Title: **HANIBoard - Arrow Electronics**		
Section: Overview		
Size: A4	Project code: PCBR17P10	Revision: 1.2
Date: 28/09/2018 Time: 11:58:21		Sheet 1 of 20
File: 01_Overview.SchDoc		

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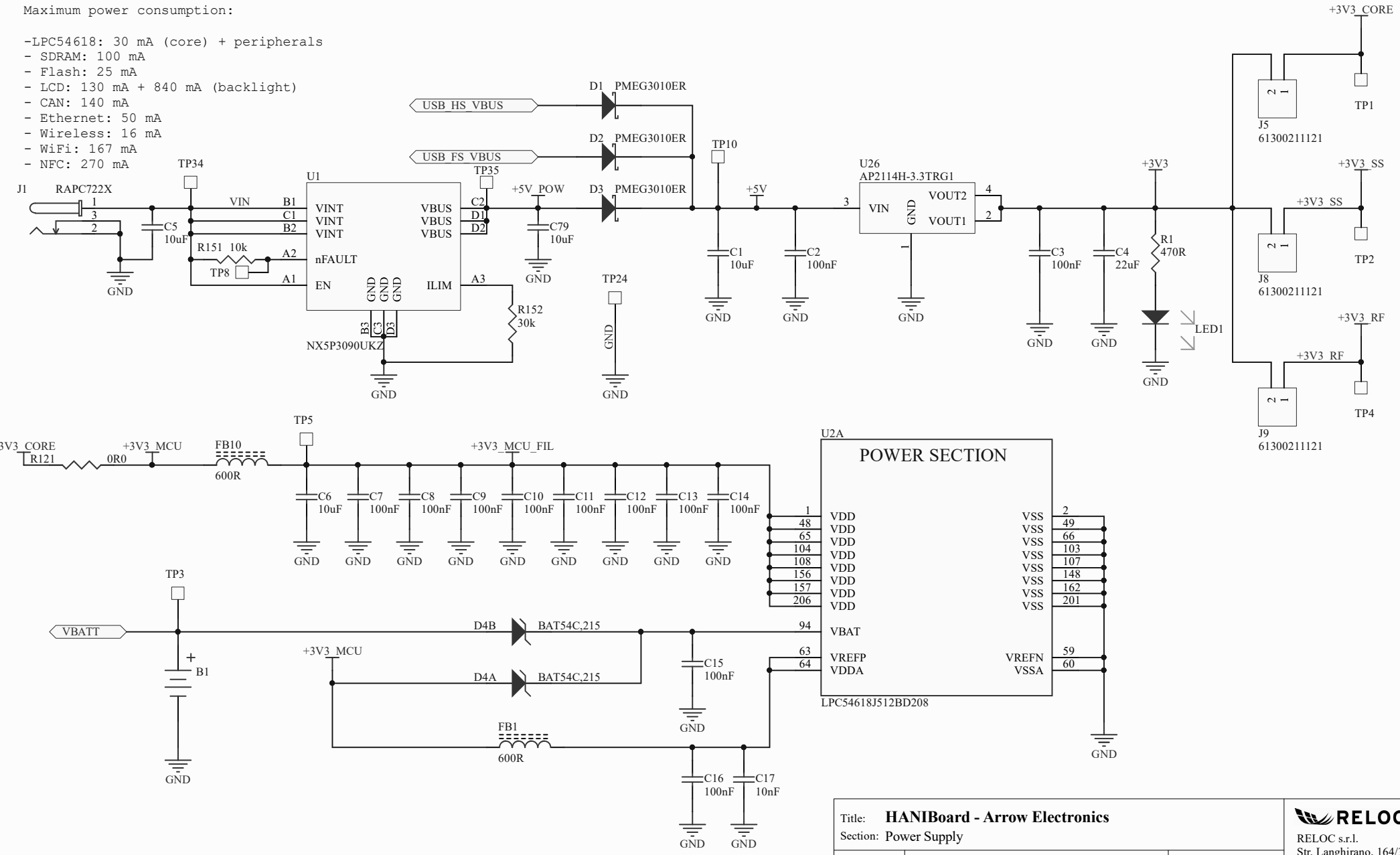
Maximum power consumption:

-LPC54618: 30 mA (core) + peripherals
- SDRAM: 100 mA
- Flash: 25 mA
- LCD: 130 mA + 840 mA (backlight)
- CAN: 140 mA
- Ethernet: 50 mA
- Wireless: 16 mA
- WiFi: 167 mA
- NFC: 270 mA



Title: **HANIBoard - Arrow Electronics**		
Section: Power Supply		
Size: A4	Project code: PCBR17P10	Revision: 1.2
Date: 28/09/2018 Time: 11:58:21		Sheet 2 of 20
File: 02_Power.SchDoc		

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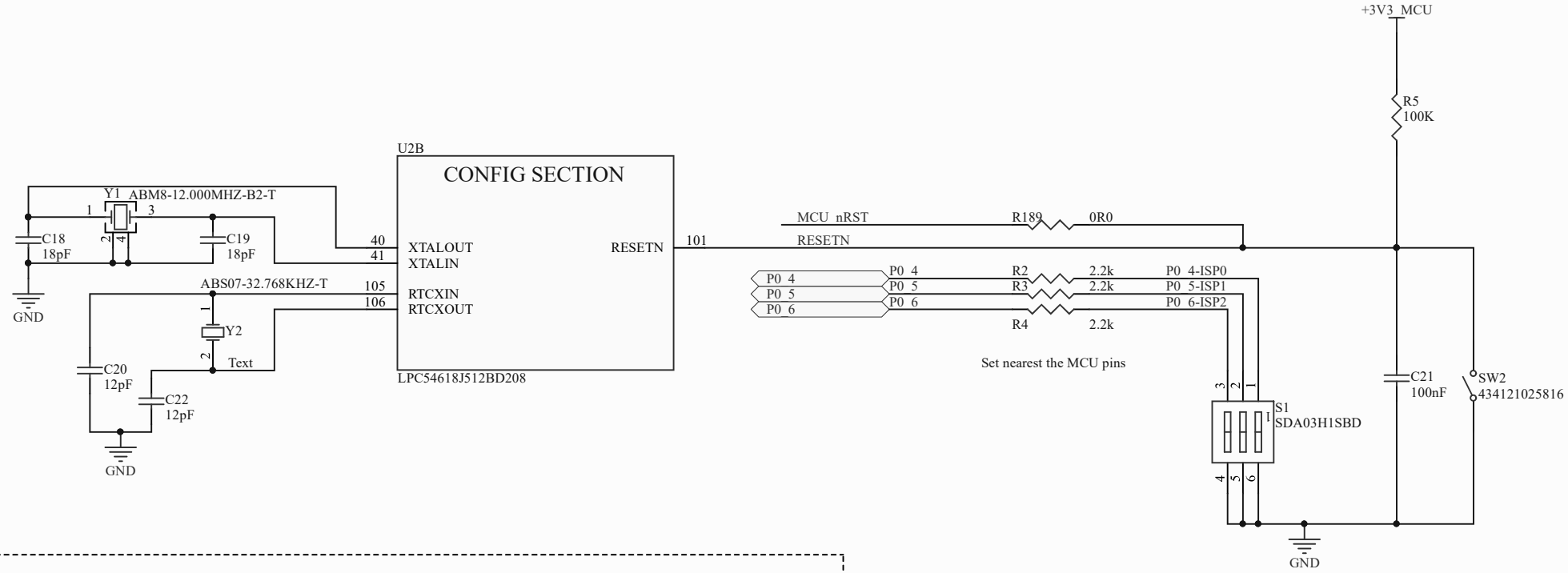

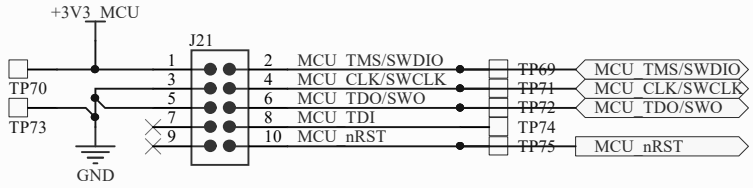

JTAG Programming Connector

Target LPC54608 Boot			
Mode	ISP2 P0_6	ISP1 P0_5	ISP0 P0_4
Internal Flash boot	high	high	high
ISP USB1 HS	low	high	high
ISP CAN	high	low	low
ISP USB0 FS	high	low	high
ISP UART/I2C/SPI	high	high	low

Title: **HANIBoard - Arrow Electronics**
Section: MCU configuration

Size: A4 | Project code: PCBR17P10 | Revision: 1.2
Date: 28/09/2018 Time: 11:58:21 | Sheet 3 of 20
File: 03_Config.SchDoc

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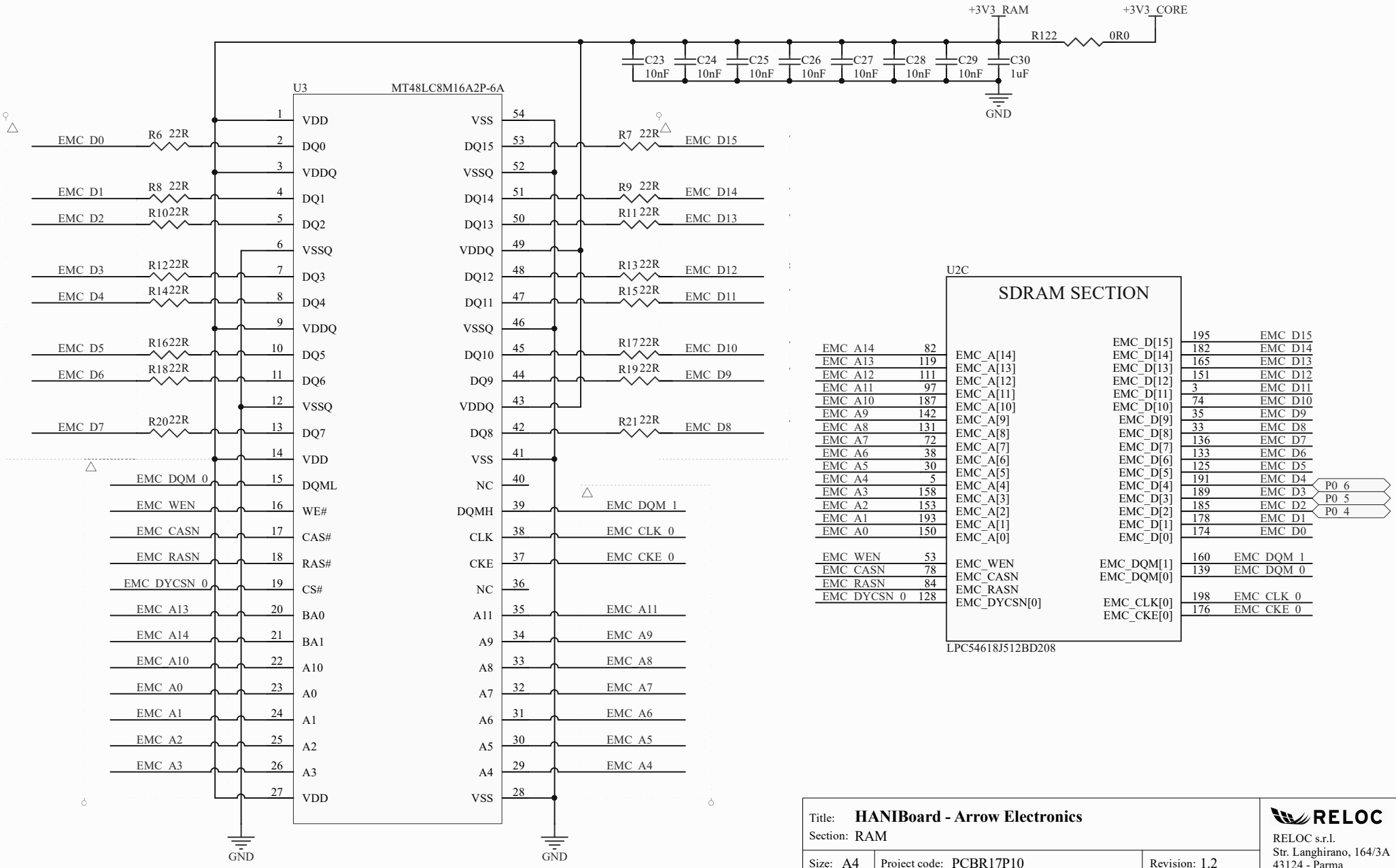
+3V3_RAM
+3V3_CORE
R122
0R0
C23 10nF
C24 10nF
C25 10nF
C26 10nF
C27 10nF
C28 10nF
C29 10nF
C30 1uF
GND
U3
MT48LC8M16A2P-6A
VDD
DQ0
VDDQ
DQ1
DQ2
VSSQ
DQ3
DQ4
VDDQ
DQ5
DQ6
VSSQ
DQ7
VDD
DQML
WE#
CAS#
RAS#
CS#
BA0
BA1
A10
A0
A1
A2
A3
VDD
VSS
DQ15
VSSQ
DQ14
DQ13
VDDQ
DQ12
DQ11
VSSQ
DQ10
DQ9
VDDQ
DQ8
VSS
NC
DQMH
CLK
CKE
NC
A11
A9
A8
A7
A6
A5
A4
VSS
EMC_D0
EMC_D1
EMC_D2
EMC_D3
EMC_D4
EMC_D5
EMC_D6
EMC_D7
R6 22R
R8 22R
R10 22R
R12 22R
R14 22R
R16 22R
R18 22R
R20 22R
R7 22R
R9 22R
R11 22R
R13 22R
R15 22R
R17 22R
R19 22R
R21 22R
EMC_D15
EMC_D14
EMC_D13
EMC_D12
EMC_D11
EMC_D10
EMC_D9
EMC_D8
EMC_DQM_0
EMC_WEN
EMC_CASN
EMC_RASN
EMC_DYCSN_0
EMC_A13
EMC_A14
EMC_A10
EMC_A0
EMC_A1
EMC_A2
EMC_A3
EMC_DQM_1
EMC_CLK_0
EMC_CKE_0
EMC_A11
EMC_A9
EMC_A8
EMC_A7
EMC_A6
EMC_A5
EMC_A4
GND
GND
U2C
SDRAM SECTION
EMC_A14 82
EMC_A13 119
EMC_A12 111
EMC_A11 97
EMC_A10 187
EMC_A9 142
EMC_A8 131
EMC_A7 72
EMC_A6 38
EMC_A5 30
EMC_A4 5
EMC_A3 158
EMC_A2 153
EMC_A1 193
EMC_A0 150
EMC_WEN 53
EMC_CASN 78
EMC_RASN 84
EMC_DYCSN_0 128
EMC_A[14]
EMC_A[13]
EMC_A[12]
EMC_A[11]
EMC_A[10]
EMC_A[9]
EMC_A[8]
EMC_A[7]
EMC_A[6]
EMC_A[5]
EMC_A[4]
EMC_A[3]
EMC_A[2]
EMC_A[1]
EMC_A[0]
EMC_WEN
EMC_CASN
EMC_RASN
EMC_DYCSN[0]
EMC_D[15]
EMC_D[14]
EMC_D[13]
EMC_D[12]
EMC_D[11]
EMC_D[10]
EMC_D[9]
EMC_D[8]
EMC_D[7]
EMC_D[6]
EMC_D[5]
EMC_D[4]
EMC_D[3]
EMC_D[2]
EMC_D[1]
EMC_D[0]
EMC_DQM[1]
EMC_DQM[0]
EMC_CLK[0]
EMC_CKE[0]
195 EMC_D15
182 EMC_D14
165 EMC_D13
151 EMC_D12
3 EMC_D11
74 EMC_D10
35 EMC_D9
33 EMC_D8
136 EMC_D7
133 EMC_D6
125 EMC_D5
191 EMC_D4
189 EMC_D3
185 EMC_D2
178 EMC_D1
174 EMC_D0
160 EMC_DQM_1
139 EMC_DQM_0
198 EMC_CLK_0
176 EMC_CKE_0
P0_6
P0_5
P0_4
LPC54618J512BD208
Title: HANIBoard - Arrow Electronics
Section: RAM
Size: A4
Project code: PCBR17P10
Revision: 1.2
Date: 28/09/2018
Time: 11:58:21
Sheet 4 of 20
File: 04_RAM.SchDoc
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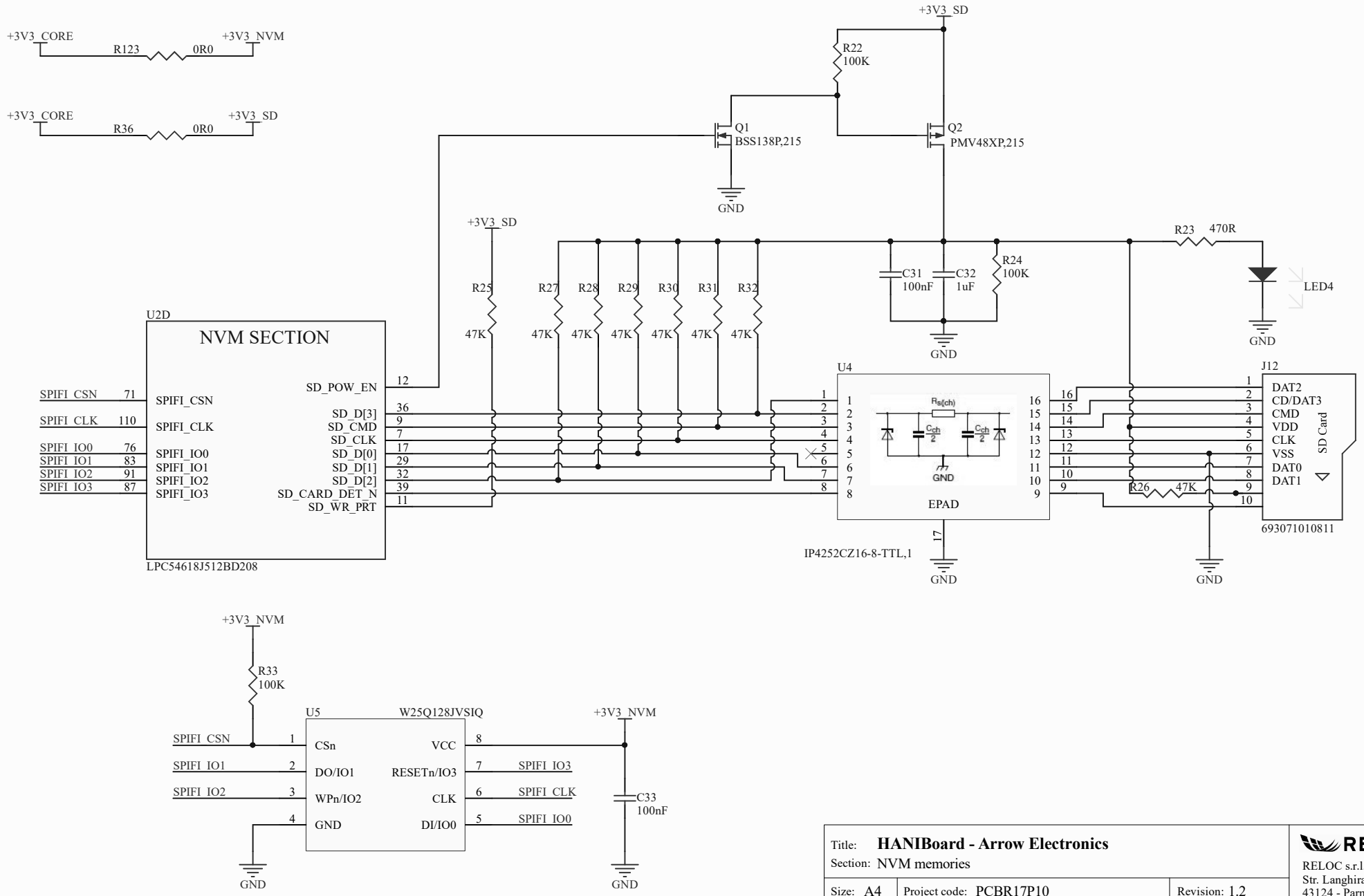

Title: **HANIBoard - Arrow Electronics**		
Section: NVM memories		
Size: A4	Project code: PCBR17P10	Revision: 1.2
Date: 28/09/2018 Time: 11:58:21		Sheet 5 of 20
File: 05_NVM.SchDoc		

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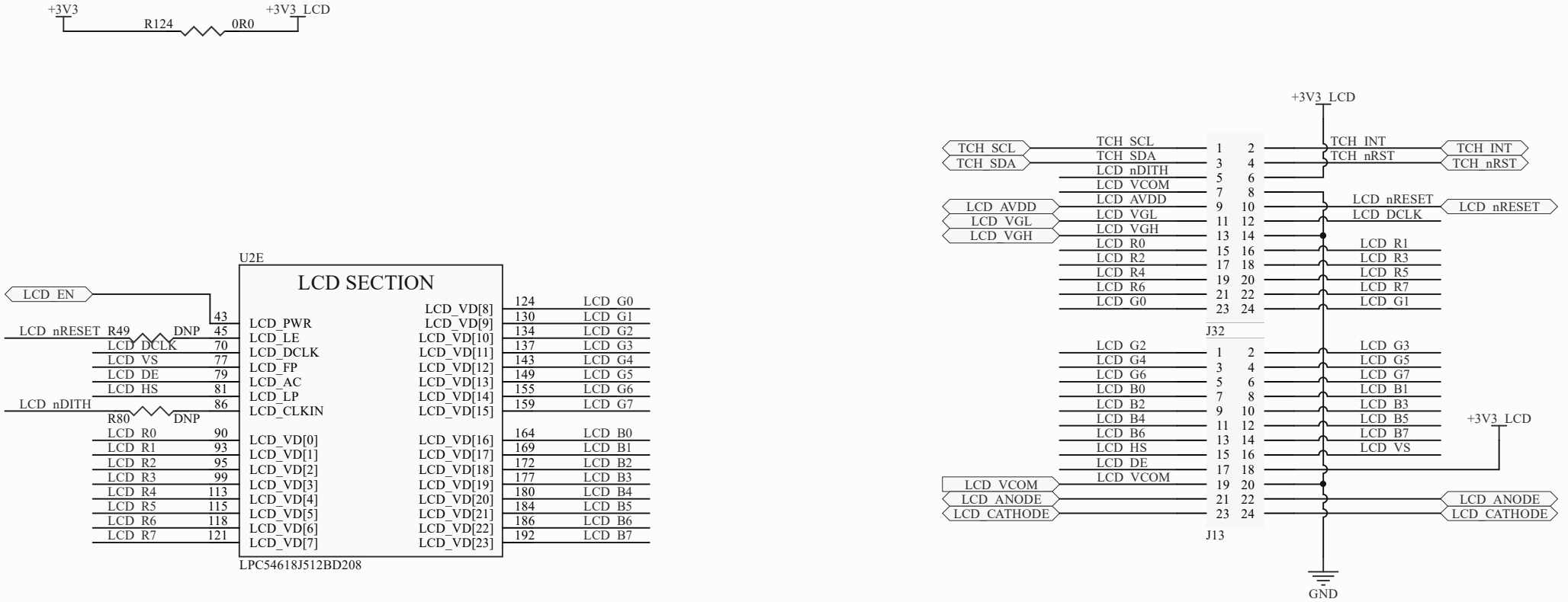

Capacitive Touch Sensor
(ST1633: I2C ADDR =
0x70/0x60/0x38/0x55)

Title: **HANIBoard - Arrow Electronics**		
Section: LCD		
Size: A4	Project code: PCBR17P10	Revision: 1.2
Date: 28/09/2018 Time: 11:58:21		Sheet 6 of 20
File: 06_LCD.SchDoc		

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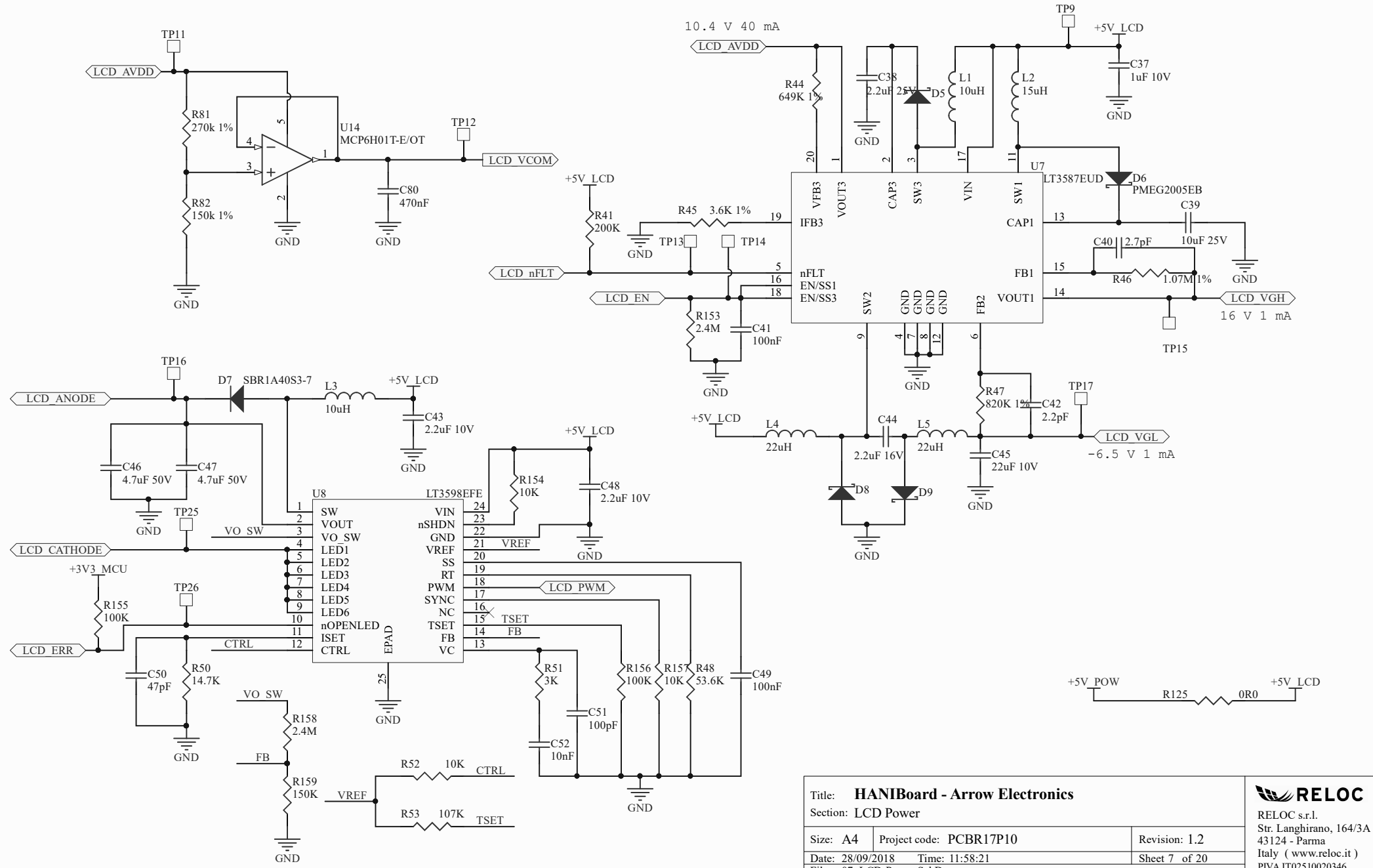

Title: **HANIBoard - Arrow Electronics**		
Section: LCD Power		
Size: A4	Project code: PCBR17P10	Revision: 1.2
Date: 28/09/2018 Time: 11:58:21		Sheet 7 of 20
File: 07_LCD-Power.SchDoc		

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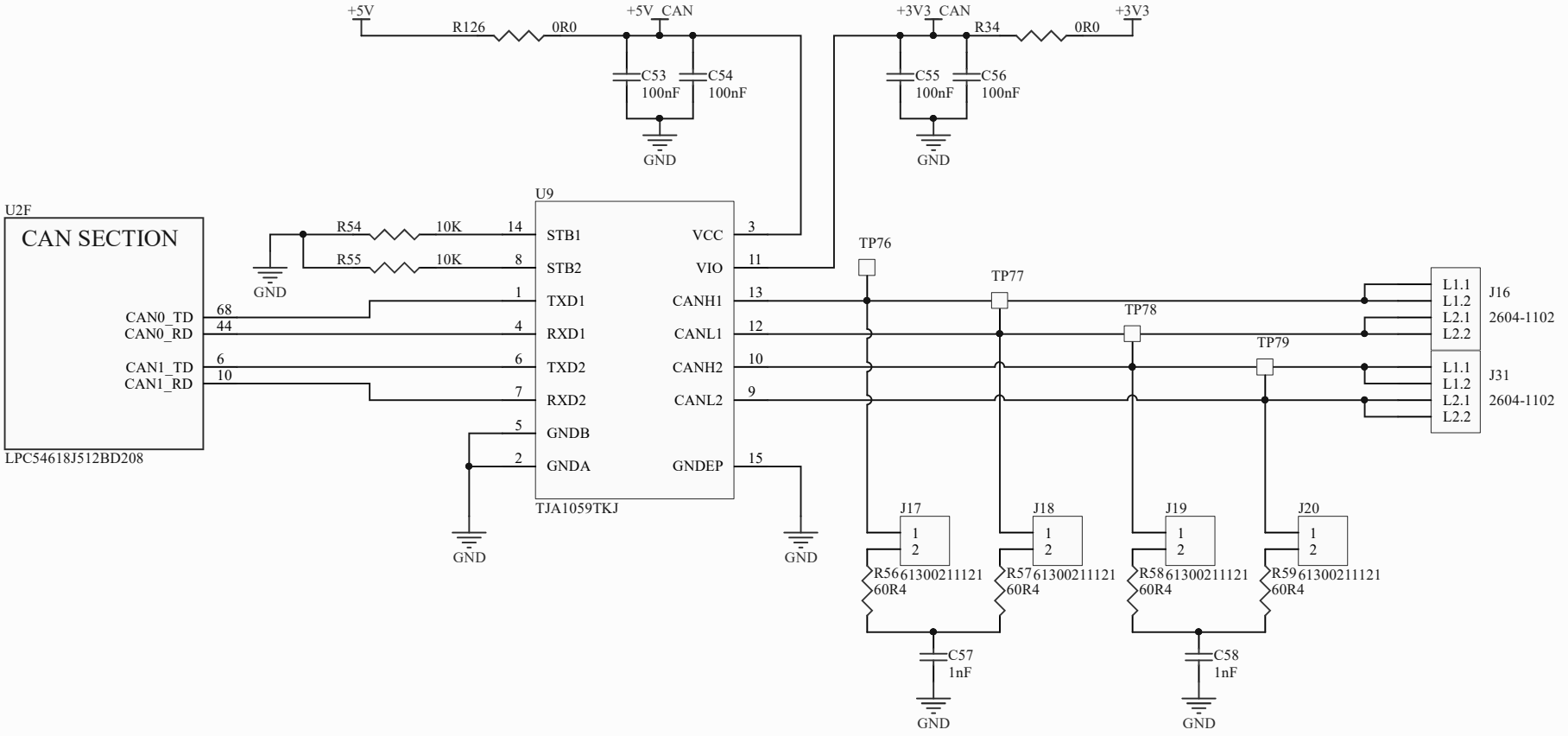

Title: **HANIBoard - Arrow Electronics**		
Section: CAN		
Size: A4	Project code: PCBR17P10	Revision: 1.2
Date: 28/09/2018 Time: 11:58:22		Sheet 8 of 20
File: 08_CAN.SchDoc		

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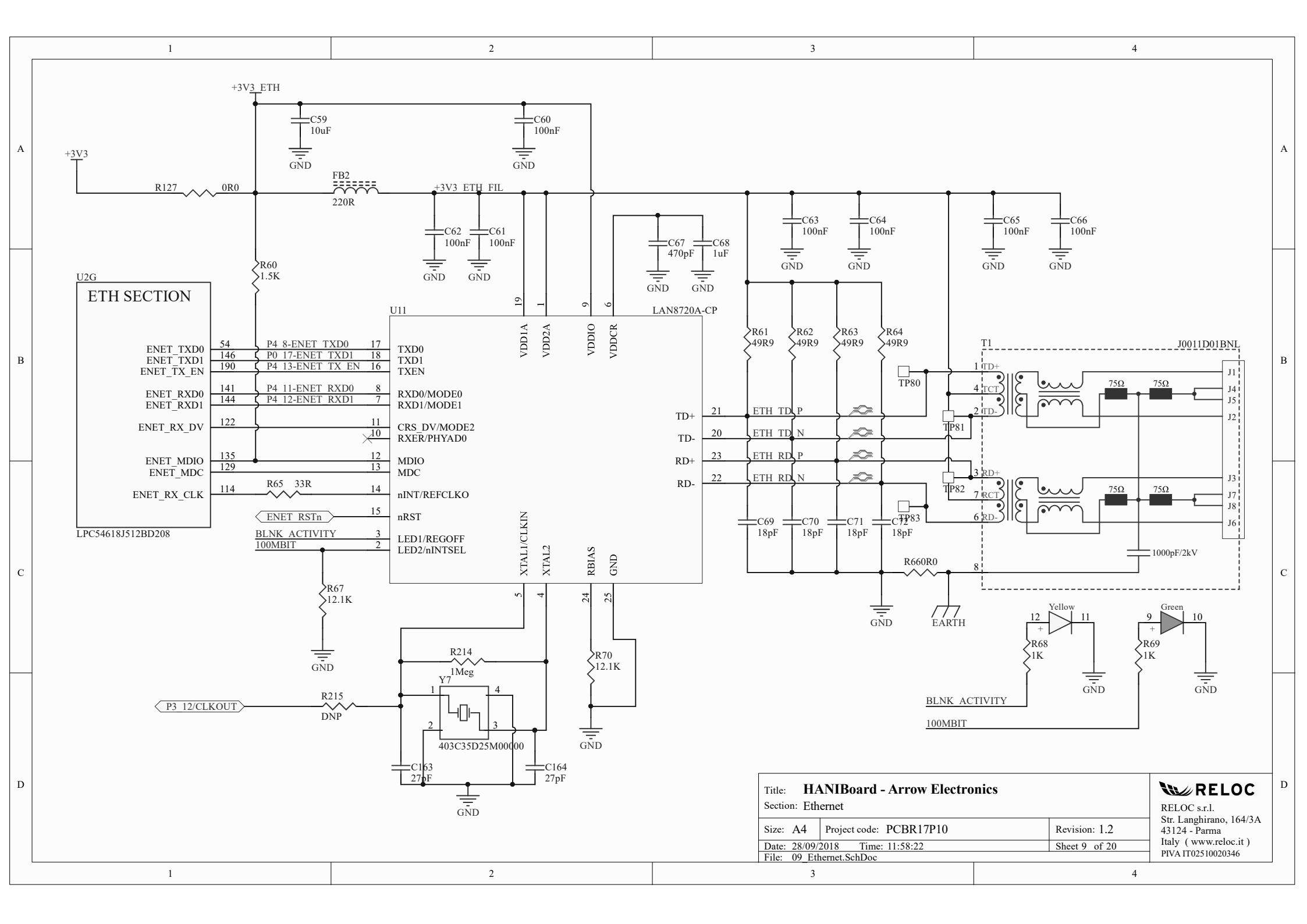

Title: **HANIBoard - Arrow Electronics**		
Section: Ethernet		
Size: A4	Project code: PCBR17P10	Revision: 1.2
Date: 28/09/2018 Time: 11:58:22		Sheet 9 of 20
File: 09_Ethernet.SchDoc		

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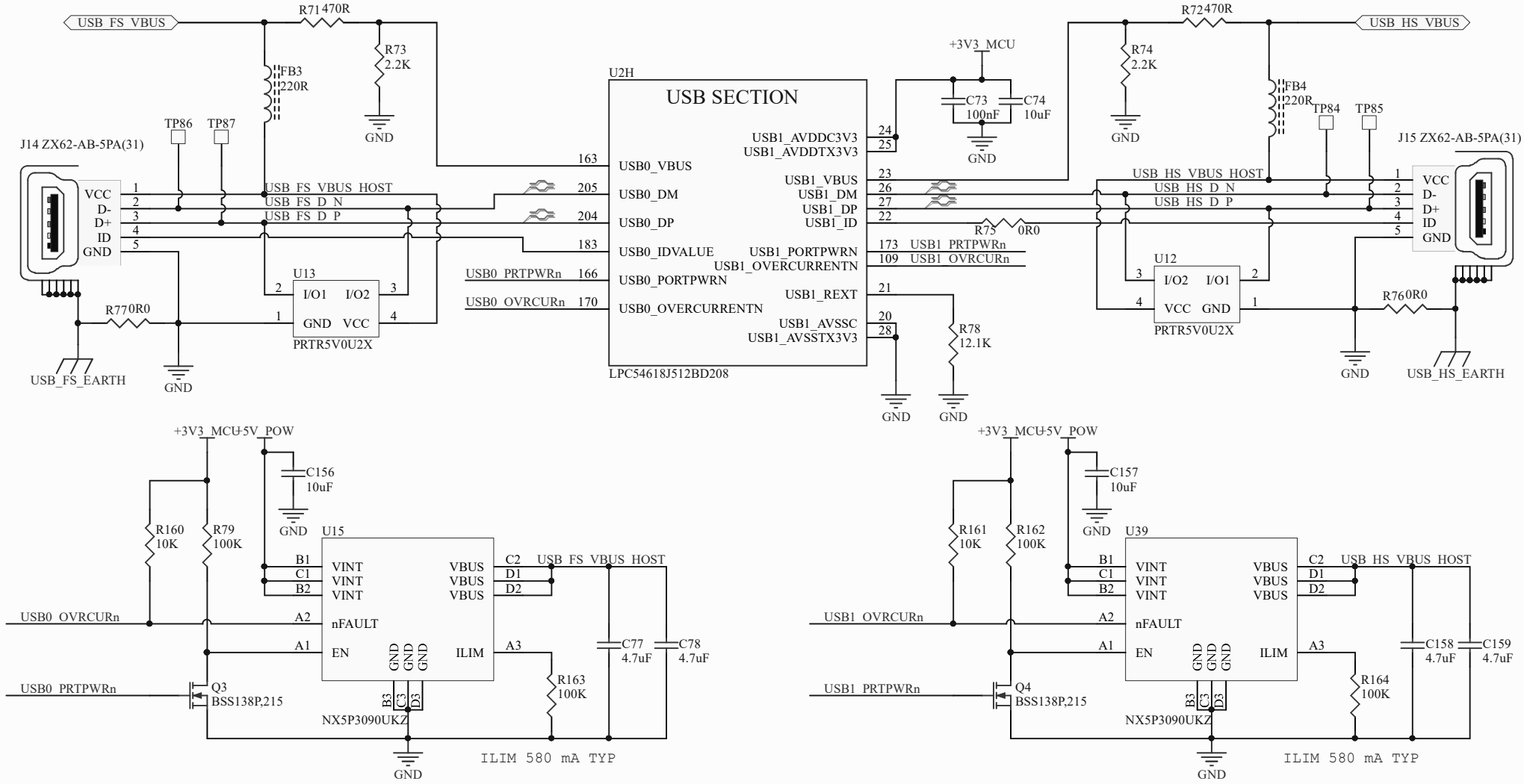

Title: **HANIBoard - Arrow Electronics**		
Section: USB		
Size: A4	Project code: PCBR17P10	Revision: 1.2
Date: 28/09/2018 Time: 11:58:22		Sheet 10 of 20
File: 10_USB.SchDoc		

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U2I

GPIO SECTION

PIO2_2/ENET_CRS/FC3_SSEL3/SCT0_OUT6/CT1_MAT1	4	TCH_nRST
PIO3_23/FC2_CTS_SDA_SSEL0/UTICK_CAP3	8	IO1
PIO3_14/SCT0_OUT4/FC9_RTS_SCL_SSEL1/CT3_MAT1/TRACEDATA[2]	13	IO2
PIO4_19/ENET_TXD0/SD_CLK/FC2_SCK/CT4_CAP2/EMC_DQM[2]	14	AR0_SPI_CLK
PIO1_18/FC8_TXD_SCL_MISO/SCT0_OUT5/CAN1_RD/EMC_BLSN[1]	15	TCH_INT
PIO3_24/FC2_RTS_SCL_SSEL1/CT4_CAP0/USB0_VBUS	16	RF_IRQ
PIO4_20/ENET_TXD1/SD_CMD/FC2_RXD_SDA_MOSI/CT4_CAP3/EMC_DQM[3]	18	AR0_UART_RX
PIO3_16/FC8_RXD_SDA_MOSI/SD_D[4]	19	I2C_SDA
PIO3_17/FC8_TXD_SCL_MISO/SD_D[5]	31	I2C_SCL
PIO4_21/ENET_TXD2/SD_POW_EN/FC2_TXD_SCL_MISO/CT2_MAT3/EMC_D[16]	34	AR0_UART_TX
PIO3_12/SCT0_OUT8/CT3_CAP0/CLKOUT/EMC_CLK[1]/TRACECLK	37	P3_12/CLKOUT
PIO4_23/ENET_RXD0/SD_WR_PRT/FC2_CTS_SDA_SSEL0/CT1_MAT0/EMC_D[18]	42	AR0_SPI_CS
PIO3_20/FC9_SCK/SD_CARD_INT_N/CLKOUT/SCT0_OUT7	46	RF_nRESET
PIO4_22/ENET_TXD3/SD_CARD_DET_N/FC2_RTS_SCL_SSEL1/CT1_MAT3/EMC_D[17]	47	AR0_SPI_CS2
PIO0_10/ADC0_0/FC6_SCK/CT2_CAP2/CT2_MAT0/FC1_TXD_SCL_MISO/SWO	50	MCU_TDO/SWO
PIO0_11/ADC0_1/FC6_RXD_SDA_MOSI_DATA/CT2_MAT2/FREQME_GPIO_CLK_A/SWCLK	51	MCU_CLK/SWCLK
PIO0_12/ADC0_2/FC3_TXD_SCL_MISO/FREQME_GPIO_CLK_B/SCT0_GPI7/SWDIO	52	MCU_TMS/SWDIO
PIO0_31/ADC0_5/FC0_CTS_SDA_SSEL0/SD_D[2]/CT0_MAT1/SCT0_OUT3/TRACEDATA[0]	55	AD0
PIO1_0/ADC0_6/FC0_RTS_SCL_SSEL1/SD_D[3]/CT0_CAP2/SCT0_GPI4/TRACECLK	56	AD1
PIO2_0/ADC0_7/FC0_RXD_SDA_MOSI/CT1_CAP0	57	AD2
PIO2_1/ADC0_8FC0_TXD_SCL_MISO/CT1_MAT0	58	AD3
PIO3_21/ADC0_9/FC9_RXD_SDA_MOSI/SD_BACKEND_PWR/CT4_MAT3/UTICK_CAP2	61	AD4
PIO3_22/ADC0_10/FC9_TXD_SCL_MISO	62	AD5
PIO4_24/ENET_RXD1/SD_CARD_INT_N/CT1_MAT1/EMC_D[19]	67	AR_SCL
PIO4_25/ENET_RXD2/SD_D[0]/FC7_CTS_SDA_SSEL0/CT1_MAT2/EMC_D[20]	69	AR_SDA
PIO4_26/ENET_RXD3/SD_D[1]/UTICK_CAP2/CT1_MAT3/EMC_D[21]	73	T-SEN_ALERT
PIO3_13/SCT0_OUT9/FC9_CTS_SDA_SSEL0/CT3_CAP1/EMC_FBCK/TRACEDATA[1]	75	NFC_PDOWN
PIO4_30/ENET_TX_CLK/SD_D[5]/CT3_MAT0/FC1_RTS_SCL_SSEL1/CT1_CAP3/EMC_D[25]	80	NFC_SPI_CSn
PIO4_27/ENET_TX_EN/SD_D[2]/FC1_SCK/CT1_CAP0/EMC_D[22]	85	NFC_SCK
PIO3_26/SCT0_OUT0/FC4_RXD_SDA_MOSI/EMC_A[15]	88	RF_UART_TX
PIO1_22/FC8_RTS_SCL_SSEL1/SD_CMD/CT2_MAT3/SCT0_GPI5/FC4_SSEL3/EMC_CKE[1]	89	IO_INT1
PIO4_28/ENET_TX_ER/SD_D[3]/FC1_RXD_SDA_MOSI/CT1_CAP1/EMC_D[23]	92	NFC_MOSI/RX
PIO3_27/SCT0_OUT1/FC4_TXD_SCL_MISO/EMC_A[16]	96	RF_UART_RX
PIO1_17/ENET_MDIO/FC8_RXD_SDA_MOSI/SCT0_OUT4/CAN1_TD/EMC_BLSN[0]	98	NFC_IRQ
PIO3_28/SCT0_OUT2/FC4_CTS_SDA_SSEL0/EMC_A[17]	100	WIFI_RESET
PIO4_29/ENET_RX_ER/SD_D[4]/FC1_TXD_SCL_MISO/CT1_CAP2/EMC_D[24]	102	NFC_MISO/TX

LPC54618J512BD208

U2J

GPIO SECTION

WIFI_EXT_WP	112	PIO3_29/SCT0_OUT3/FC4_RTS_SCL_SSEL1/EMC_A[18]
ENET_RSTn	116	PIO3_30/FC9_CTS_SDA_SSEL0/SCT0_OUT4/FC4_SSEL2/EMC_A[19]
PDM1_CLK	117	PIO1_2/CAN0_TD/CT0_MAT3/SCT0_GPI6/PDM1_CLK/USB1_PORTPWRN
PDM1_DATA	120	PIO1_3/CAN0_RD/SCT0_OUT4/PDM1_DATA/USB0_PORTPWRN
K7	123	PIO3_31/FC9_RTS_SCL_SSEL1/SCT0_OUT5/CT4_MAT2/SCT0_GPI0/EMC_A[20]
K6	126	PIO5_1/ENET_CRS/SD_VOLT[0]/CT3_MAT3/FC4_TXD_SCL_MISO/EMC_D[28]
AR1_SPI_CS	127	PIO4_0/FC6_CTS_SDA_SSEL0/CT4_CAP1/SCT0_GPI1/EMC_CSN[1]
AR1_SPI_CLK	132	PIO4_1/FC6_SCK/SCT0_GPI2/EMC_CSN[2]
AR1_SPI_MOSI	138	PIO4_2/FC6_RXD_SDA_MOSI_DATA/SCT0_GPI3/EMC_CSN[3]
AR1_SPI_MISO	140	PIO4_3/FC6_TXD_SCL_MISO_WS/CT0_CAP3/SCT0_GPI4/EMC_DYCSN[2]
GYR_nRST	145	PIO5_5/SCT0_GPI0/PDM1_CLK/CT3_CAP3/FC4_SSEL3/TRACECLK/EMC_A[21]
ACC_RST	147	PIO4_4/FC4_SSEL3/FC0_RTS_SCL_SSEL1/SCT0_GPI5/EMC_DYCSN[3]
SNS_SCLK	152	PIO5_6/SCT0_GPI1/PDM1_DATA/FC5_SCK/SCT0_OUT5/TRACEDATA[0]/EMC_A[22]
TCH_SDA	154	PIO4_5/FC9_CTS_SDA_SSEL0/FC0_CTS_SDA_SSEL0/CT4_MAT3/SCT0_GPI6/EMC_CKE[2]
ACC_RANGE	161	PIO4_6/&FC9_RTS_SCL_SSEL1/SCT0_GPI7/EMC_CKE[3]
UI_SW1	167	PIO0_29/FC0_RXD_SDA_MOSI/CT2_MAT3/SCT0_OUT8/TRACEDATA[2]
SNS_nCS1	168	PIO5_10/SCT0_GPI5/FC5_RTS_SCL_SSEL1/SCT0_OUT9/UTICK_CAP3
SNS_MOSI	171	PIO5_7/SCT0_GPI2/MCLK/FC5_RXD_SDA_MOSI/SCT0_OUT6/TRACEDATA[1]/EMC_A[23]
SNS_MISO	175	PIO5_8/SCT0_GPI3/PDM0_CLK/FC5_TXD_SCL_MISO/SCT0_OUT7/TRACEDATA[2]/EMC_A[24]
SNS_nCS0	179	PIO5_9/SCT0_GPI4/PDM0_DATA/FC5_CTS_SDA_SSEL0/SCT0_OUT8/TRACEDATA[3]/EMC_A[25]
UI_LED1	181	PIO4_10/ENET_RX_DV/FC2_TXD_SCL_MISO/USB1_OVERCURRENTN/USB1_LEDN/SCT0_GPI3
ACC_ST	188	PIO4_12/ENET_RXD1/FC2_RTS_SCL_SSEL1/SCT0_GPI5
ACC_EN	194	PIO4_14/ENET_RX_CLK/CT4_MAT1/FC9_SCK/SCT0_GPI7
ACC_INT1	196	PIO0_0/CAN1_RD/FC3_SCK/CTimer_MAT0/SCT0_GPI0/PDM0_CLK
WIFI_UART_TX	197	PIO4_15/ENET_MDC/CT4_MAT2/FC9_RXD_SDA_MOSI
LCD_PWM	199	PIO3_10/SCT0_OUT3/CT3_MAT0/EMC_DYCSN[1]/TRACEDATA[0]
TCH_SCL	200	PIO0_30/FC0_TXD_SCL_MISO/CT0_MAT0/SCT0_OUT9/TRACEDATA[1]
UI_LED2	202	PIO5_2/ENET_COL/SD_VOLT[1]/CT3_CAP0/FC4_CTS_SDA_SSEL0/EMC_D[29]
WIFI_UART_RX	203	PIO4_16/ENET_MDIO/CT4_MAT3/FC9_TXD_SCL_MISO
ACC_INT2	207	PIO0_1/CAN1_TD/FC3_CTS_SDA_SSEL0/CT0_CAP0/SCT0_GPI1/PDM0_DATA
IO_INT2	208	PIO3_11/MCLK/FC0_SCK/FC1_SCK/TRACEDATA[3]

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IO_INT2 — R223 0R0 — WIFI_IRQ
IO_INT1 — R224 0R0 — RTC_INT
R225 DNP — PMOD2_INT2
R226 DNP — PMOD2_INT1

FC8: I2C_SDA, I2C_SCL
FC7: AR_SDA, AR_SCL
FC2: IO1 — PMOD2_SPI_CS1n; AR0_SPI_CS2 — PMOD2_SPI_CS2n; AR0_UART_RX — PMOD2_SPI_MOSI; AR0_UART_TX — PMOD2_SPI_MISO; AR0_SPI_CLK — PMOD2_SPI_SCK
FC0: TCH_SDA, TCH_SCL
FC1: NFC_MOSI/RX, NFC_MISO/TX, NFC_SPI_CSn, NFC_SCK

R216 DNP — LIGHT_INT
R217 DNP — P-SEN_INT1
R218 DNP — P-SEN_INT2
R219 0R0 — GYR_INT1
R220 0R0 — GYR_INT2
R221 0R0 — D8
R222 0R0 — D9
PDM1_CLK — K7
PDM1_DATA — K6
WIFI_SPI_CSn — K5
RF_SPI_CSn — K4
IO1 — K3
IO2 — K2

AD0 — ACC_XOUT
AD1 — ACC_YOUT
AD2 — R227 0R0 — ACC_ZOUT; R228 DNP — PMOD2_RST1
AD3 — PMOD2_RST2
AD4 — R229 0R0 — PMOD2_IO21; R230 DNP — PMOD2_IO11
AD5 — R231 0R0 — PMOD2_IO22; R232 DNP — PMOD2_IO12

FC4: RF_UART_RX, RF_UART_TX
FC9: WIFI_UART_RX, WIFI_UART_TX
FC5: SNS_nCS0 — GYR_nCS; SNS_nCS1 — ACC_nCS; SNS_SCLK — ACC_SCLK; SNS_MOSI — ACC_MOSI; SNS_MISO — ACC_MISO; GYR_SCLK; GYR_MOSI; GYR_MISO
FC6: AR1_SPI_CLK — RF_SPI_CLK; AR1_SPI_MOSI — RF_SPI_MOSI; AR1_SPI_MISO — RF_SPI_MISO; WIFI_SPI_CLK; WIFI_SPI_MOSI; WIFI_SPI_MISO

Title: **HANIBoard - Arrow Electronics**		
Section: PORTS		
Size: A4	Project code: PCBR17P10	Revision: 1.2
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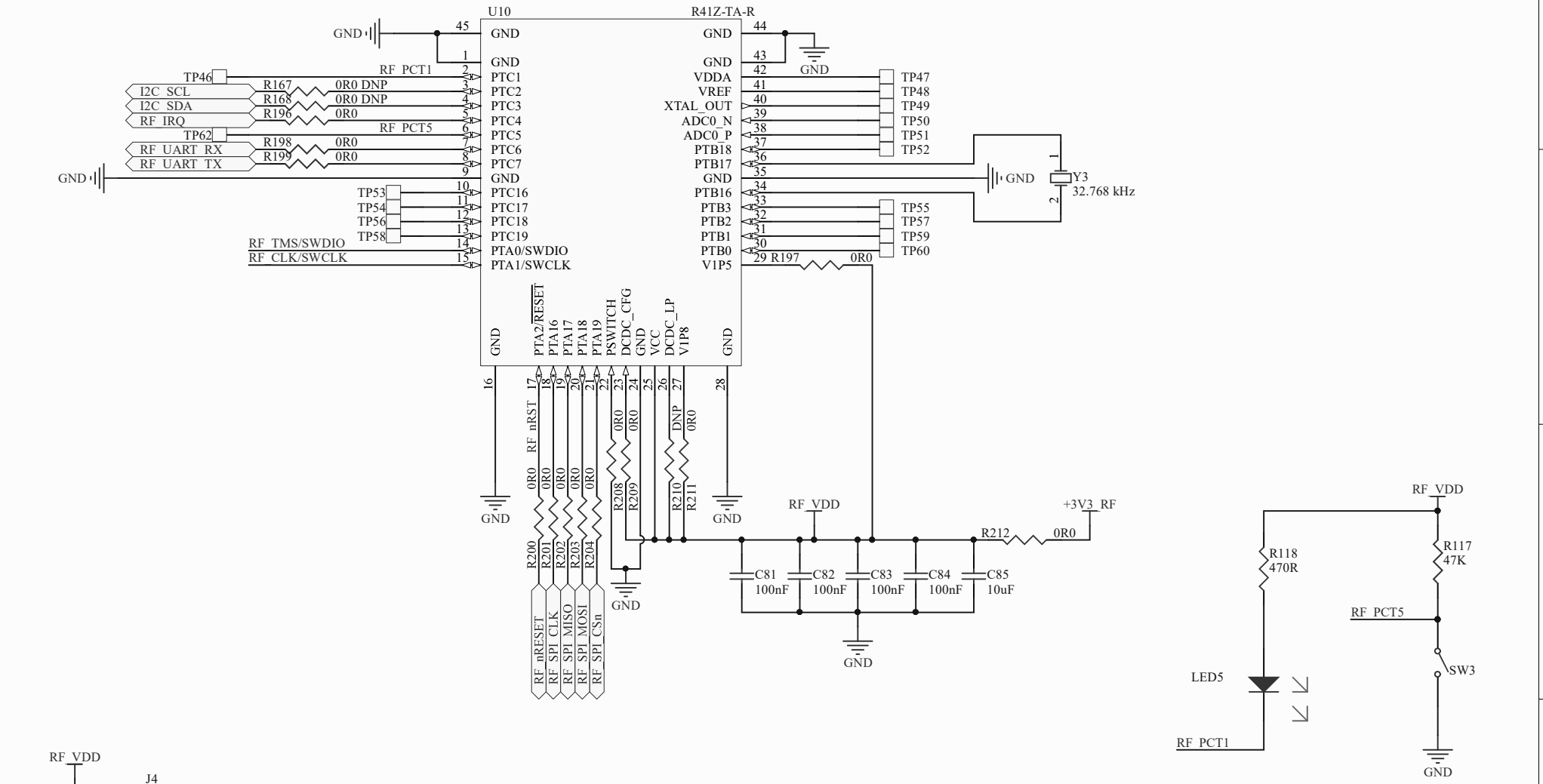

JTAG Programming Connector

Title: **HANIBoard - Arrow Electronics**		
Section: Multi-Protocol Wireless Module		
Size: A4	Project code: PCBR17P10	Revision: 1.2
Date: 28/09/2018 Time: 11:58:22		Sheet 12 of 20
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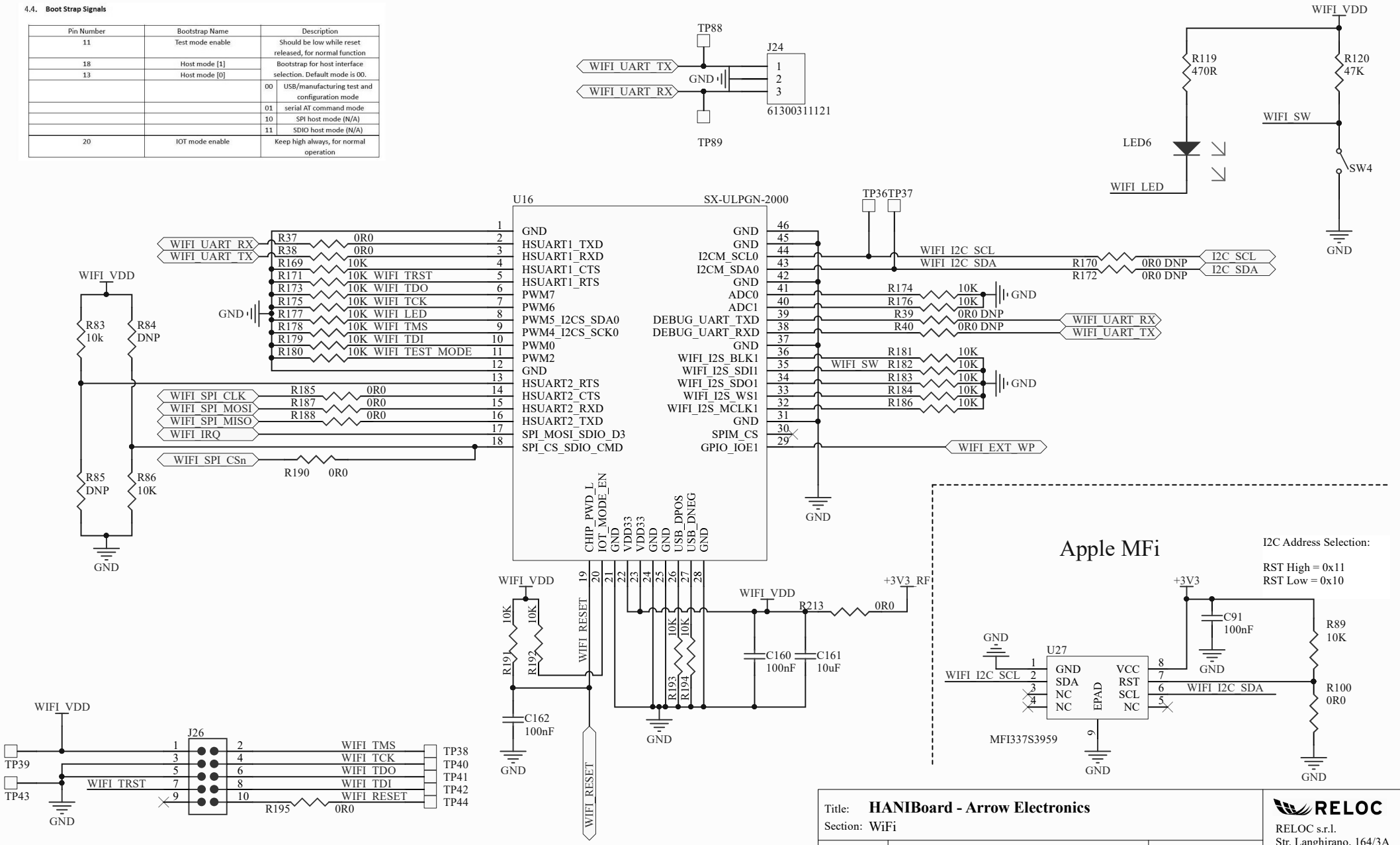
4.4. **Boot Strap Signals**

Pin Number	Bootstrap Name	Description
11	Test mode enable	Should be low while reset released, for normal function
18	Host mode [1]	Bootstrap for host interface selection. Default mode is 00.
13	Host mode [0]	
		00 USB/manufacturing test and configuration mode
		01 serial AT command mode
		10 SPI host mode (N/A)
		11 SDIO host mode (N/A)
20	IOT mode enable	Keep high always, for normal operation



Title: **HANIBoard - Arrow Electronics**		
Section: WiFi		
Size: A4	Project code: PCBR17P10	Revision: 1.2
Date: 28/09/2018 Time: 11:58:22		Sheet 13 of 20
File: 13_WiFi.SchDoc		

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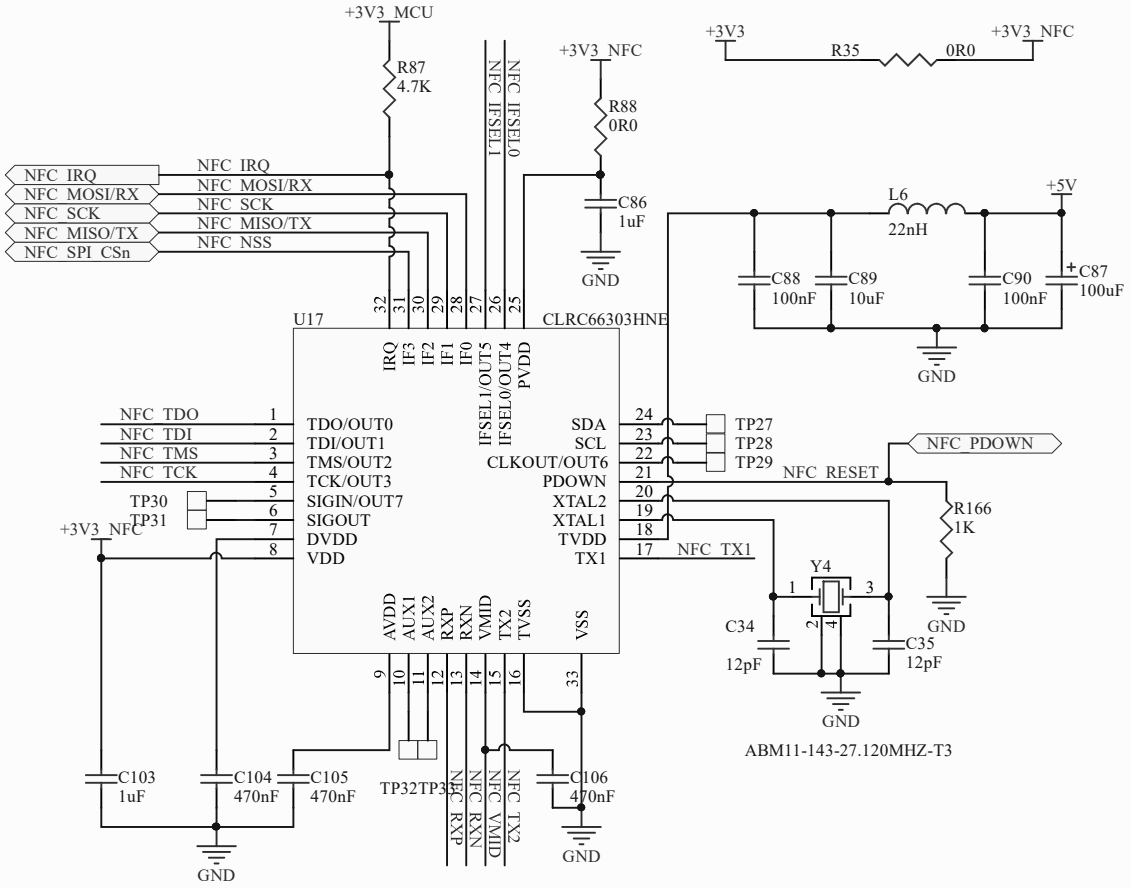
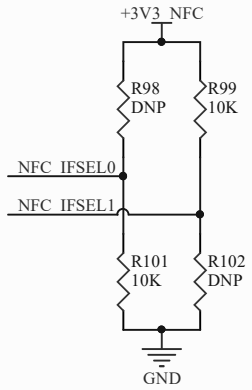
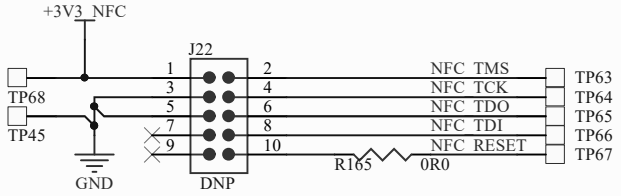


Interface Selection

Table 15. Connection scheme for detecting the different interface types

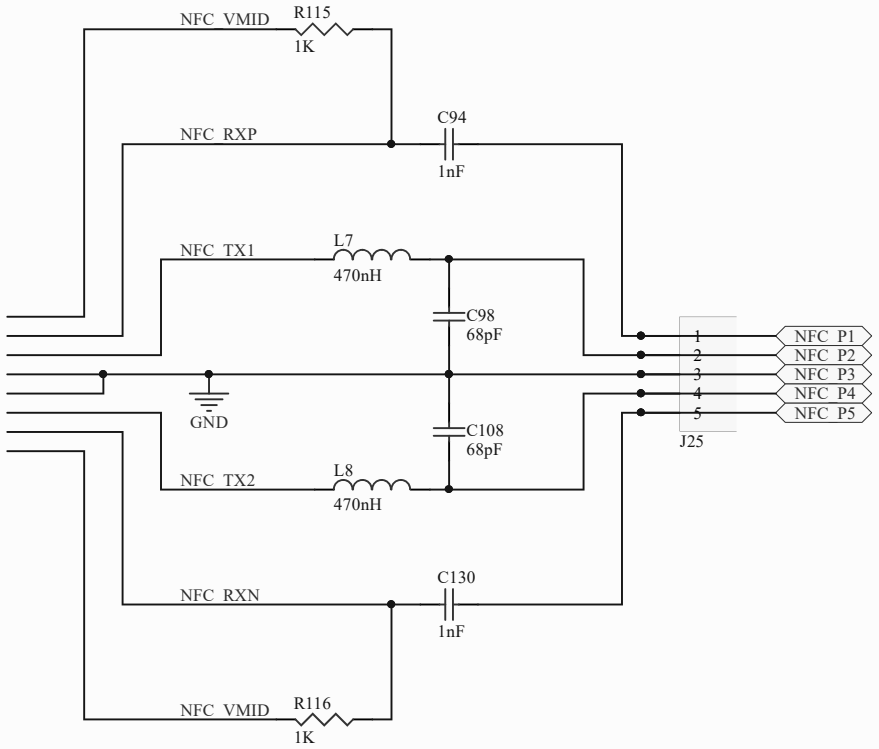
Pin	Pin Symbol	UART	SPI	I²C	I²C-L
28	IF0	RX	MOSI	ADR1	ADR1
29	IF1	n.c.	SCK	SCL	SCL
30	IF2	TX	MISO	ADR2	SDA
31	IF3	PAD_VDD	NSS	SDA	ADR2
26	IFSEL0	VSS	VSS	PAD_VDD	PAD_VDD
27	IFSEL1	VSS	PAD_VDD	VSS	PAD_VDD





JTAG Programming Connector

NFC FE (1st stade)



Title: **HANIBoard - Arrow Electronics**		
Section: NFC		
Size: A4	Project code: PCBR17P10	Revision: 1.2
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File: 14_NFC.SchDoc		

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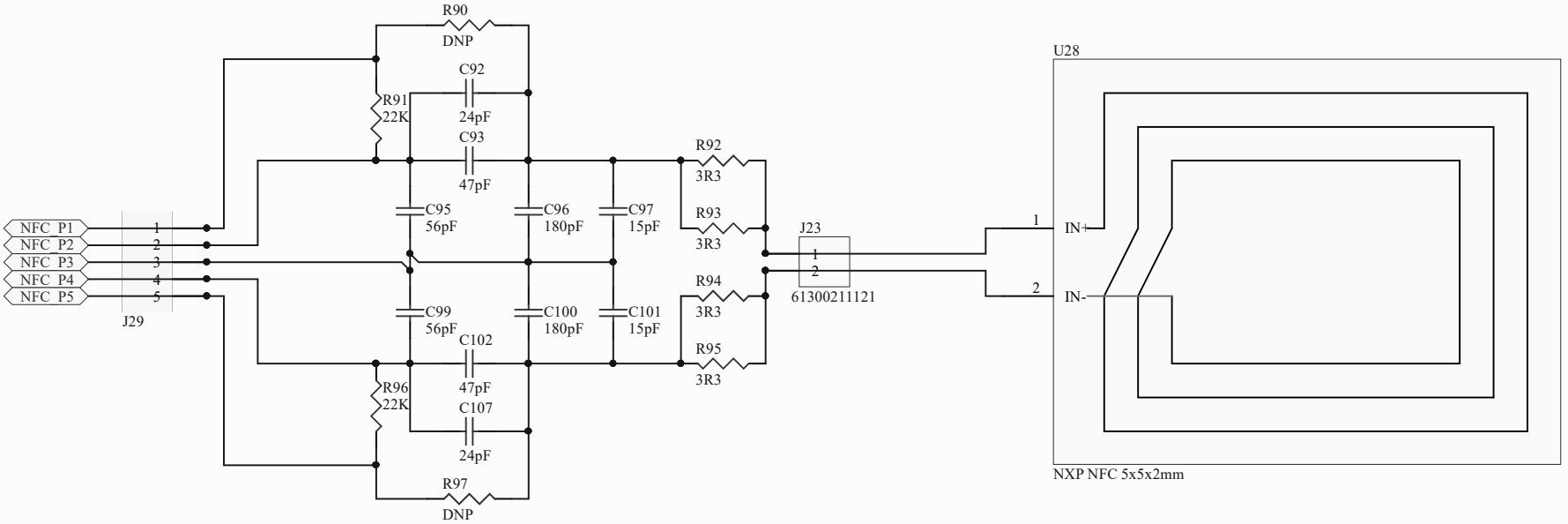
NFC Front End (2nd stage)



Title: **HANIBoard - Arrow Electronics**		
Section: NFC		
Size: A4	Project code: PCBR17P10	Revision: 1.2
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File: 15_NFC_FE.SchDoc		

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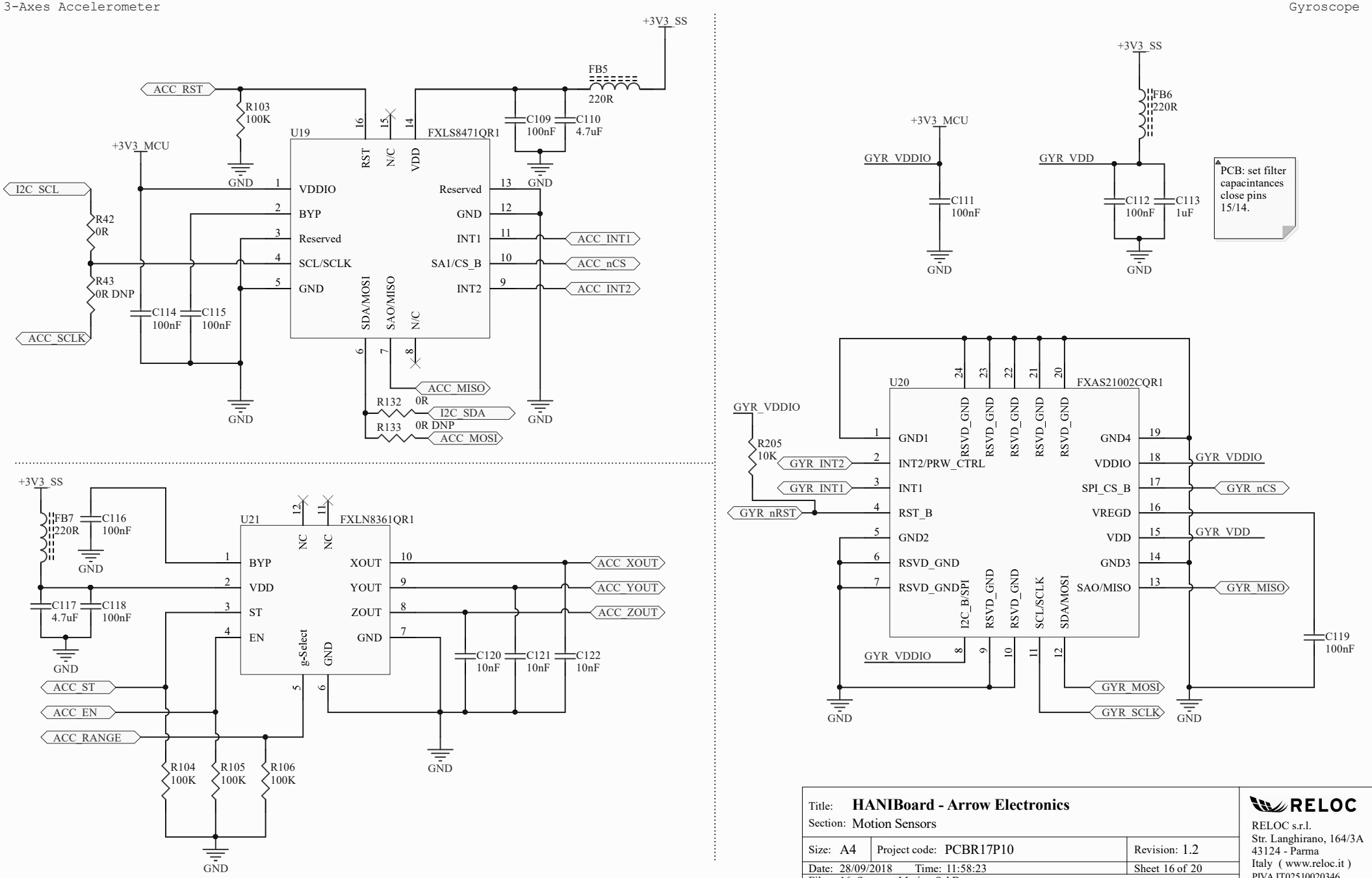
3-Axes Accelerometer
Gyroscope
+3V3_SS
ACC_RST
R103
100K
FB5
220R
C109
100nF
C110
4.7uF
U19
FXLS8471QR1
+3V3_MCU
I2C_SCL
R42
0R
R43
0R DNP
ACC_SCLK
C114
100nF
C115
100nF
VDDIO
BYP
Reserved
SCL/SCLK
GND
RST
N/C
VDD
SDA/MOSI
SAO/MISO
Reserved
GND
INT1
SA1/CS_B
INT2
ACC_INT1
ACC_nCS
ACC_INT2
ACC_MISO
R132
0R
I2C_SDA
R133
0R DNP
ACC_MOSI
+3V3_MCU
GYR_VDDIO
C111
100nF
+3V3_SS
FB6
220R
GYR_VDD
C112
100nF
C113
1uF
PCB: set filter capacintances close pins 15/14.
U20
FXAS21002CQR1
GYR_VDDIO
R205
10K
GYR_INT2
GYR_INT1
GYR_nRST
GND1
INT2/PRW_CTRL
INT1
RST_B
GND2
RSVD_GND
RSVD_GND
I2C_B/SPI
RSVD_GND
RSVD_GND
SCL/SCLK
SDA/MOSI
SAO/MISO
SPI_CS_B
VREGD
VDD
GND3
GND4
VDDIO
GYR_nCS
GYR_VDD
GYR_MISO
GYR_MOSI
GYR_SCLK
C119
100nF
+3V3_SS
FB7
220R
C116
100nF
U21
FXLN8361QR1
C117
4.7uF
C118
100nF
BYP
VDD
ST
EN
g-Select
NC
NC
XOUT
YOUT
ZOUT
GND
ACC_XOUT
ACC_YOUT
ACC_ZOUT
C120
10nF
C121
10nF
C122
10nF
ACC_ST
ACC_EN
ACC_RANGE
R104
100K
R105
100K
R106
100K
Title: HANIBoard - Arrow Electronics
Section: Motion Sensors
Size: A4
Project code: PCBR17P10
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Sheet 16 of 20
File: 16_Sensors_Motion.SchDoc
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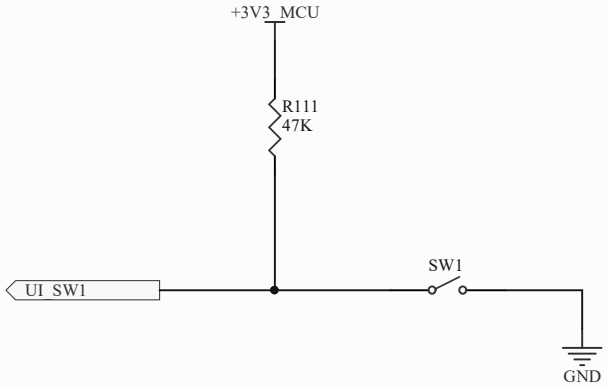
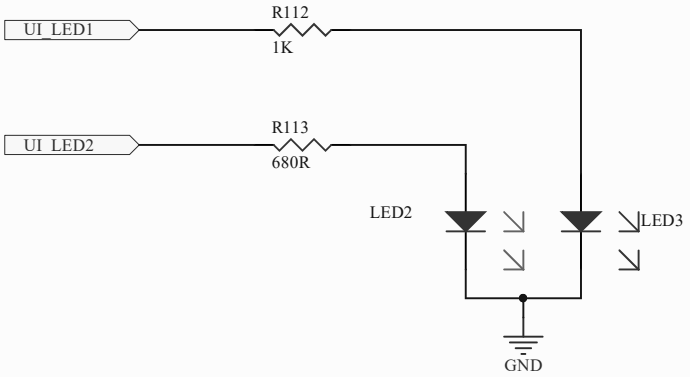
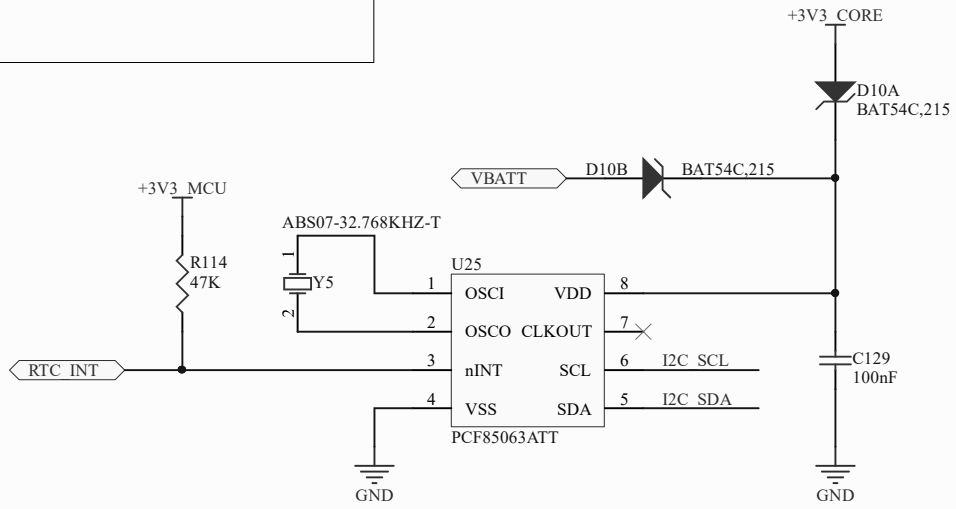
Tactile Switch

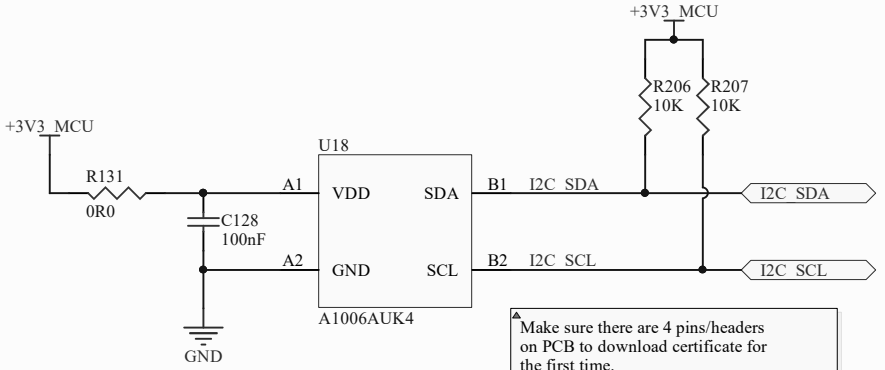


LEDs



Tiny Real-Time Clock
(PCF85063ATT: I2C ADDR = 0xA2/A3)





Make sure there are 4 pins/headers on PCB to download certificate for the first time.
* VDD_MCU

Authentication Chip
(A1006AUK4: I2C ADDR = ???)

Title: **HANIBoard - Arrow Electronics**		
Section: User Interface		
Size: A4	Project code: PCBR17P10	Revision: 1.2
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File: 18_User_Interface.SchDoc		

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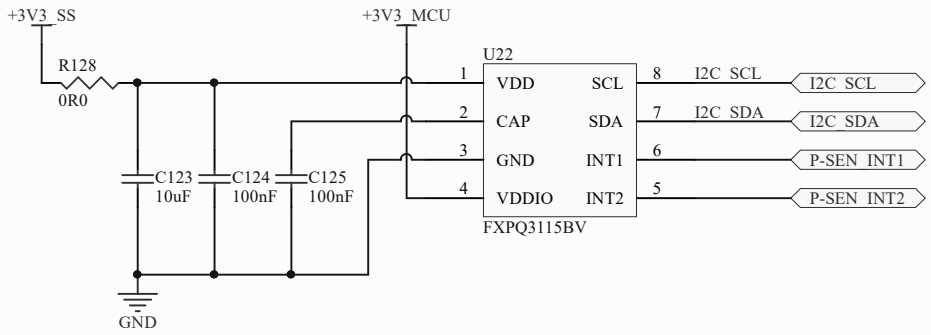
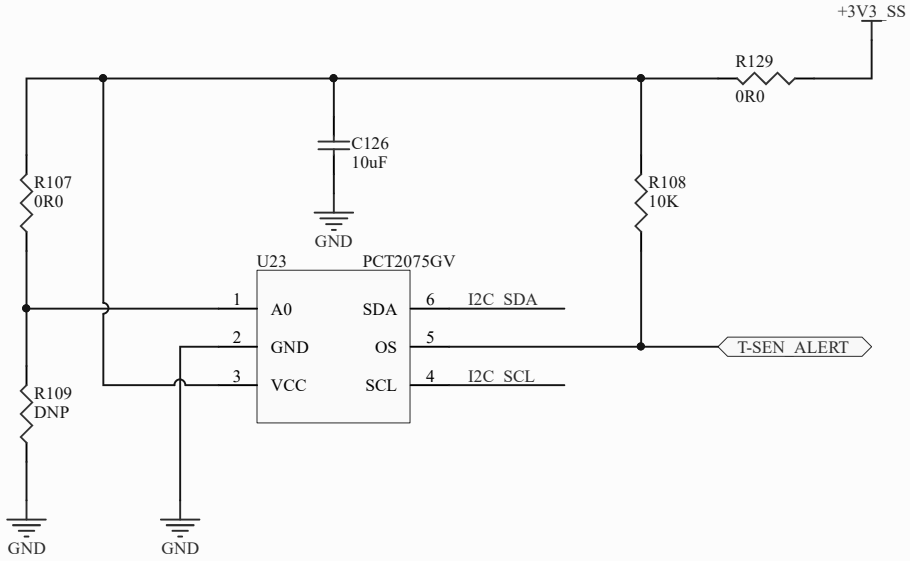
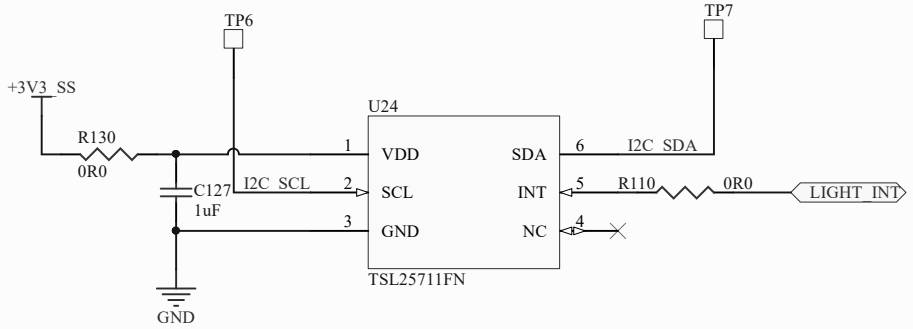


P Sensor
(I2C ADDR = 0x60)

T Sensor
(A0 = GND: I2C ADDR = 0x90)
(A0 = VDD: I2C ADDR = 0x91)





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

Title: **HANIBoard - Arrow Electronics**		
Section: Environment Sensors		
Size: A4	Project code: PCBR17P10	Revision: 1.2
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File: 17_Sensors_Environment.SchDoc		

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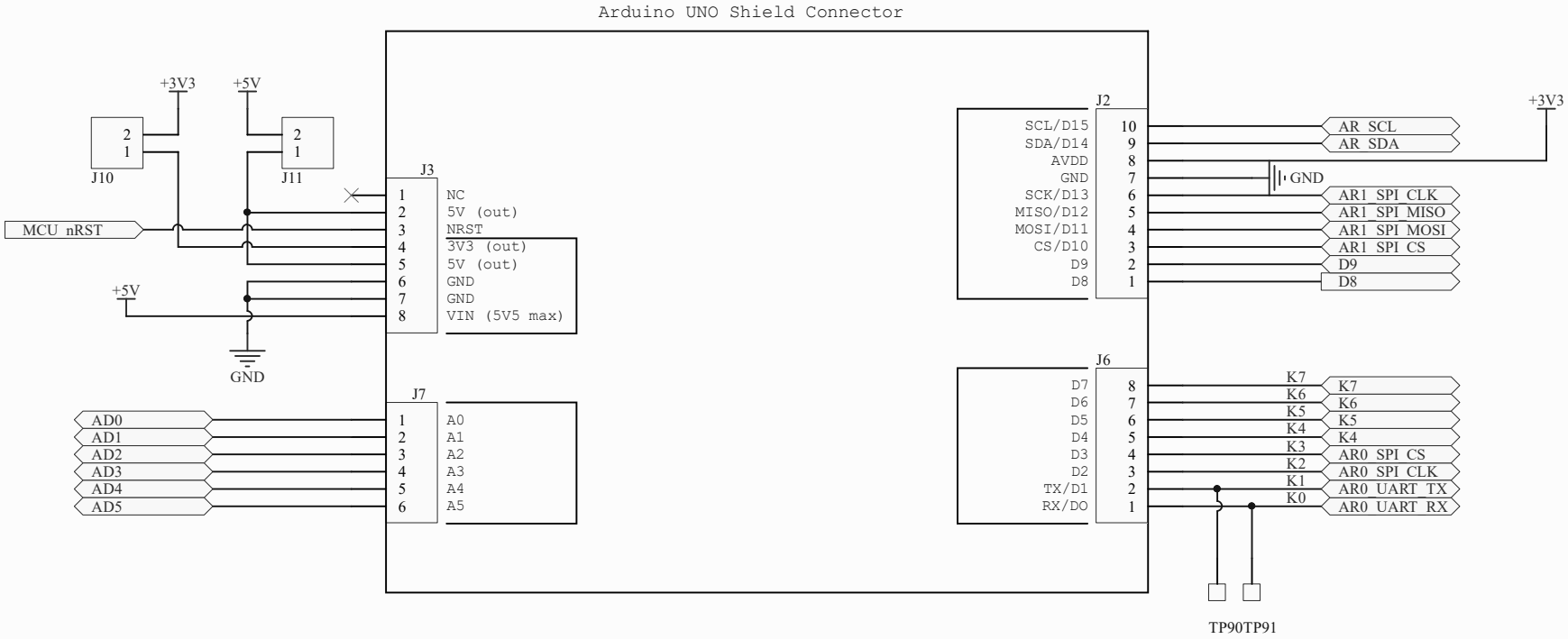

Title: **HANIBoard - Arrow Electronics**		
Section: Connectors		
Size: A4	Project code: PCBR17P10	Revision: 1.2
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File: 19_Connectors.SchDoc		

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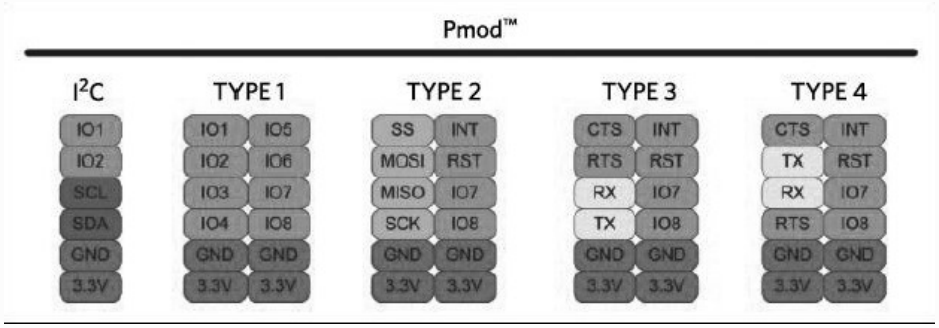

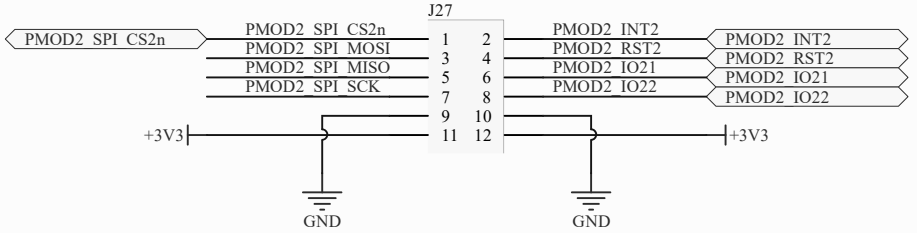

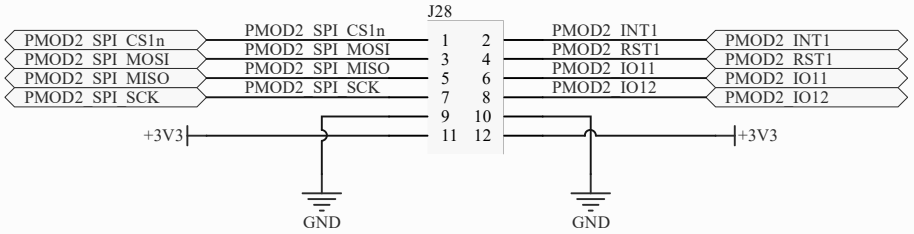

Title: **HANIBoard - Arrow Electronics**		
Section: PMOD2 Connectors		
Size: A4	Project code: PCBR17P10	Revision: 1.2
Date: 28/09/2018 Time: 11:58:23		Sheet 20 of 20
File: 20_PMOD2_Connectors.SchDoc		

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