XC111 Connector Board Product Brief

XC111 Connector Board Product Brief

Proprietary and Confidential

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1. Introduction

The XC111 Connector Board is part of the Acconeer XC111-XR111 Evaluation Kit. XC111 has space for up to 4 XR111 Radar Sensor Boards. Its purpose is to enable a wide variety of use cases. The board has been designed for use with a Raspberry Pi3.

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2. XC111 Connector Board

1.1 Overview

Picture 1 shows the XC111 Connector Board, front side, including 1 XR111 Radar Sensor Board and with a Raspberry Pi connected.

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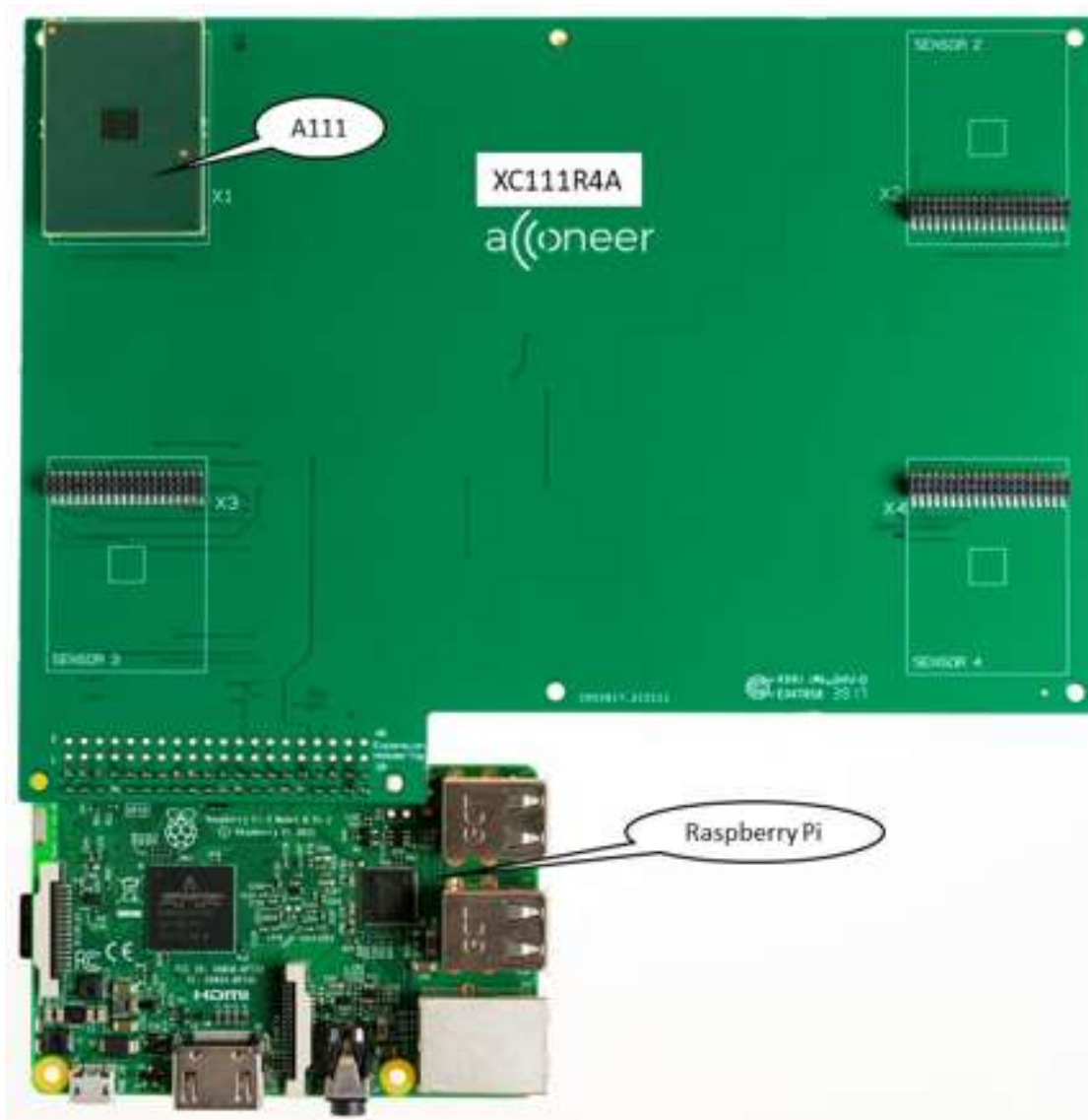
Picture 2 shows the reverse side of the XC111.
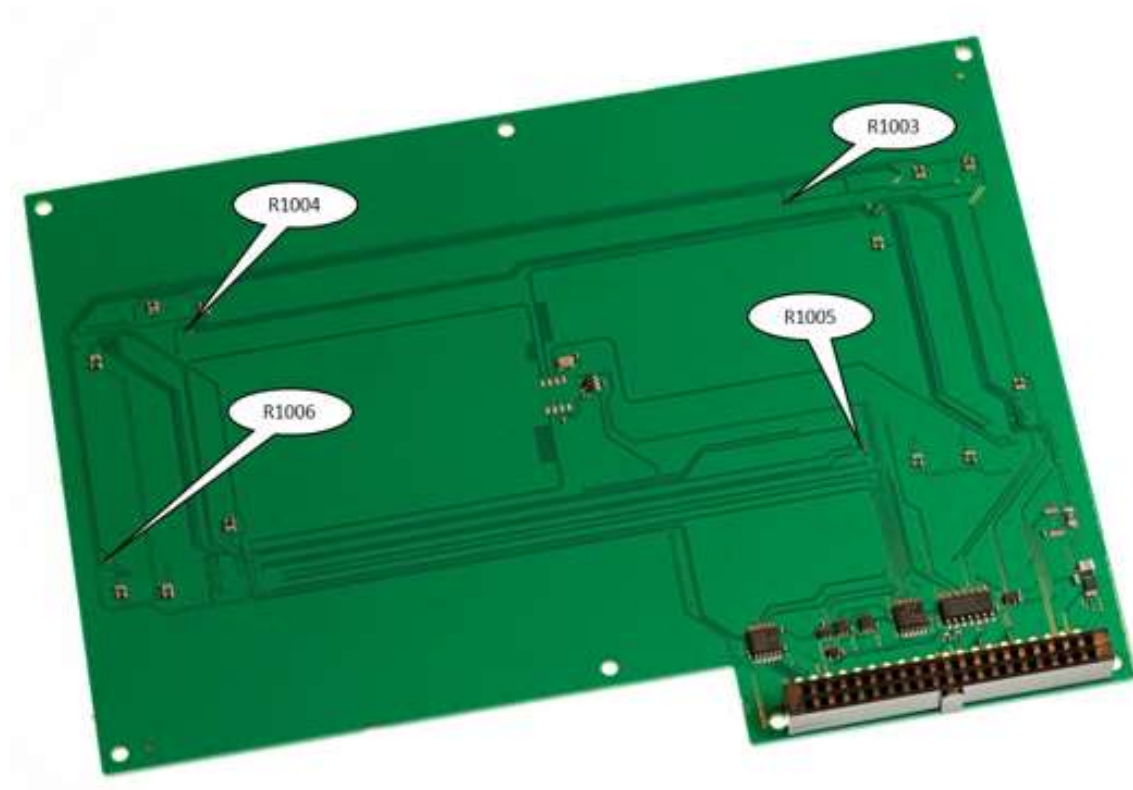
1.2 Power

The XC111 Connector Board is powered through the Raspberry Pi. When the power LED on the Raspberry Pi is lit, the board is powered on and ready for use.

1.3 Electrical Schematics

On the following pages, please find the electrical schematics for the XC111.

```
LevelShiftersAndBuffer
    ◁SENSOR_CTRL_RP          SENSOR_CTRL◁
    ◇SPI_RP
    ▷EXT_CLK_EN                      SPI◇

                             EXT_REFCLK◁
                                                      SensorConnectors
                                                          ◁SENSOR_CTRL
ConnectorAndPower
   SENSOR_CTRL_RP◁                                         ◇SPI
        SPI_RP◇                                        ◁EXT_REFCLK
     EXT_CLK_EN◁                                         ▷SPI_SS
     SPI_SS_RP◁         SlaveSelectLogic

ConnectorAndPower.sch        ◁SPI_SS_RP        SPI_SS◁     SensorConnectors.sch

                        SlaveSelectLogic.sch
```

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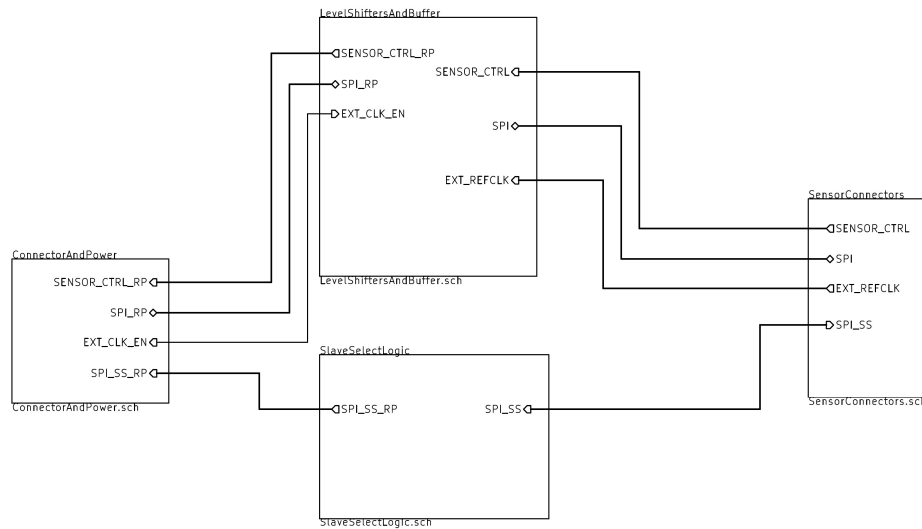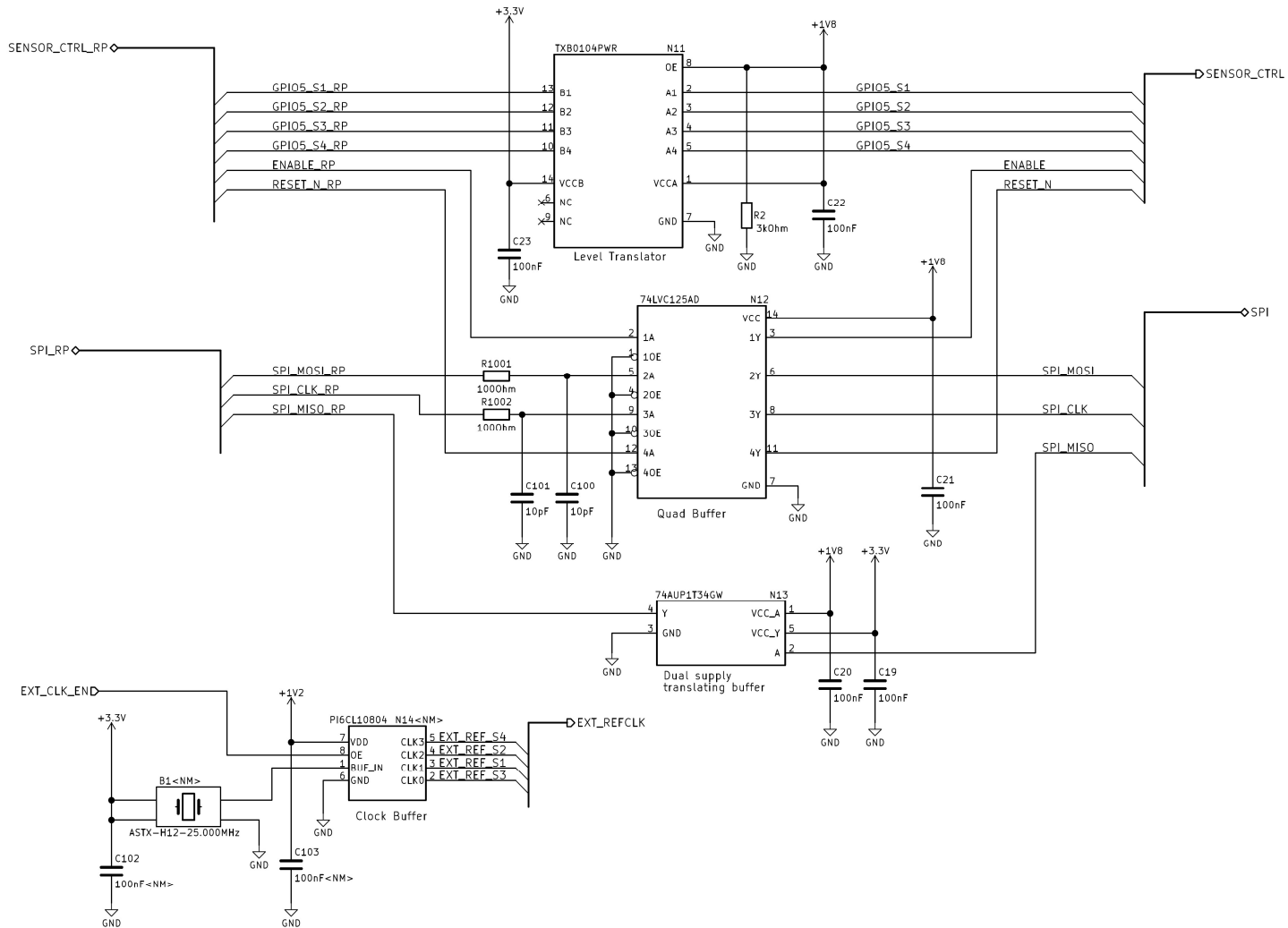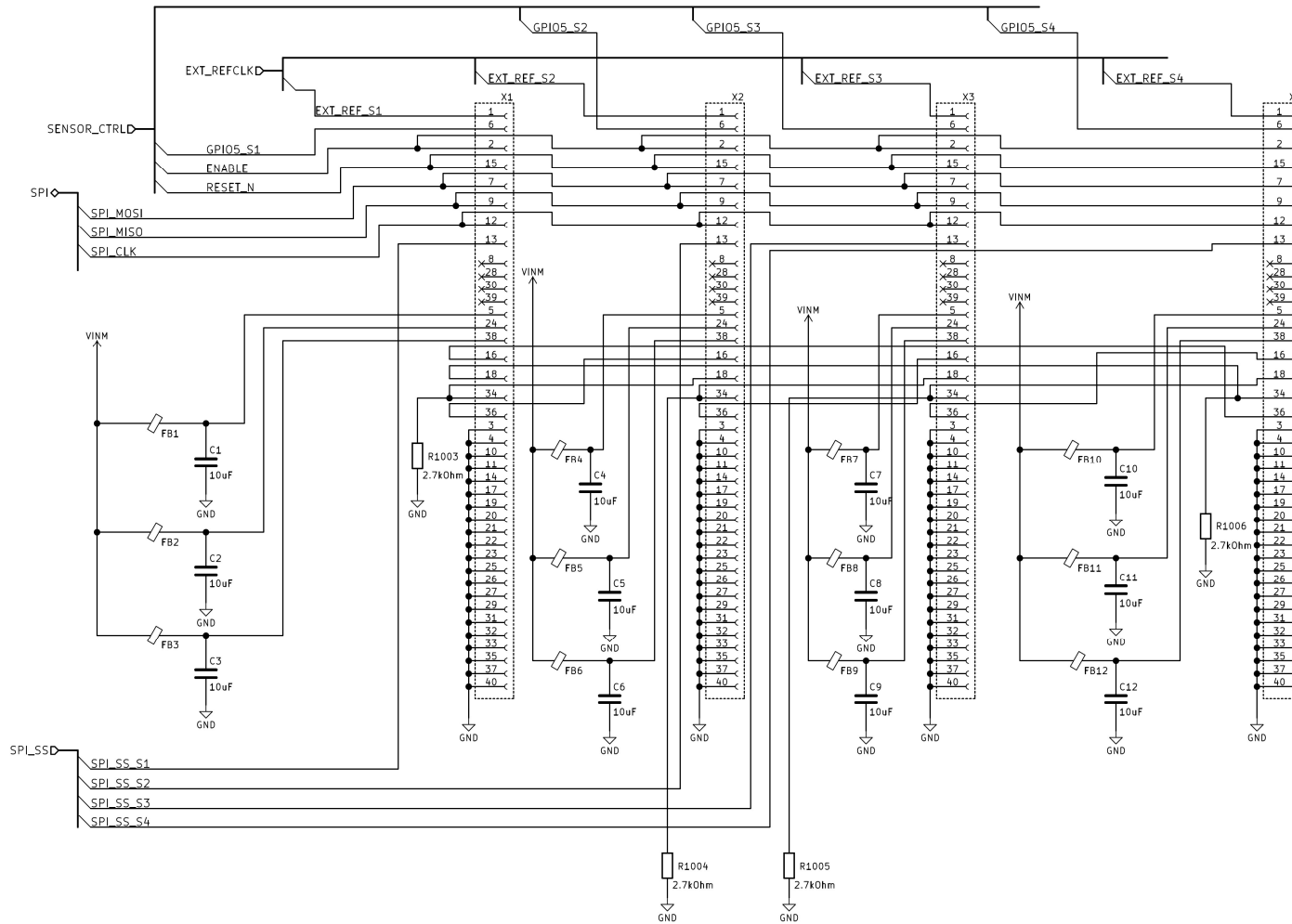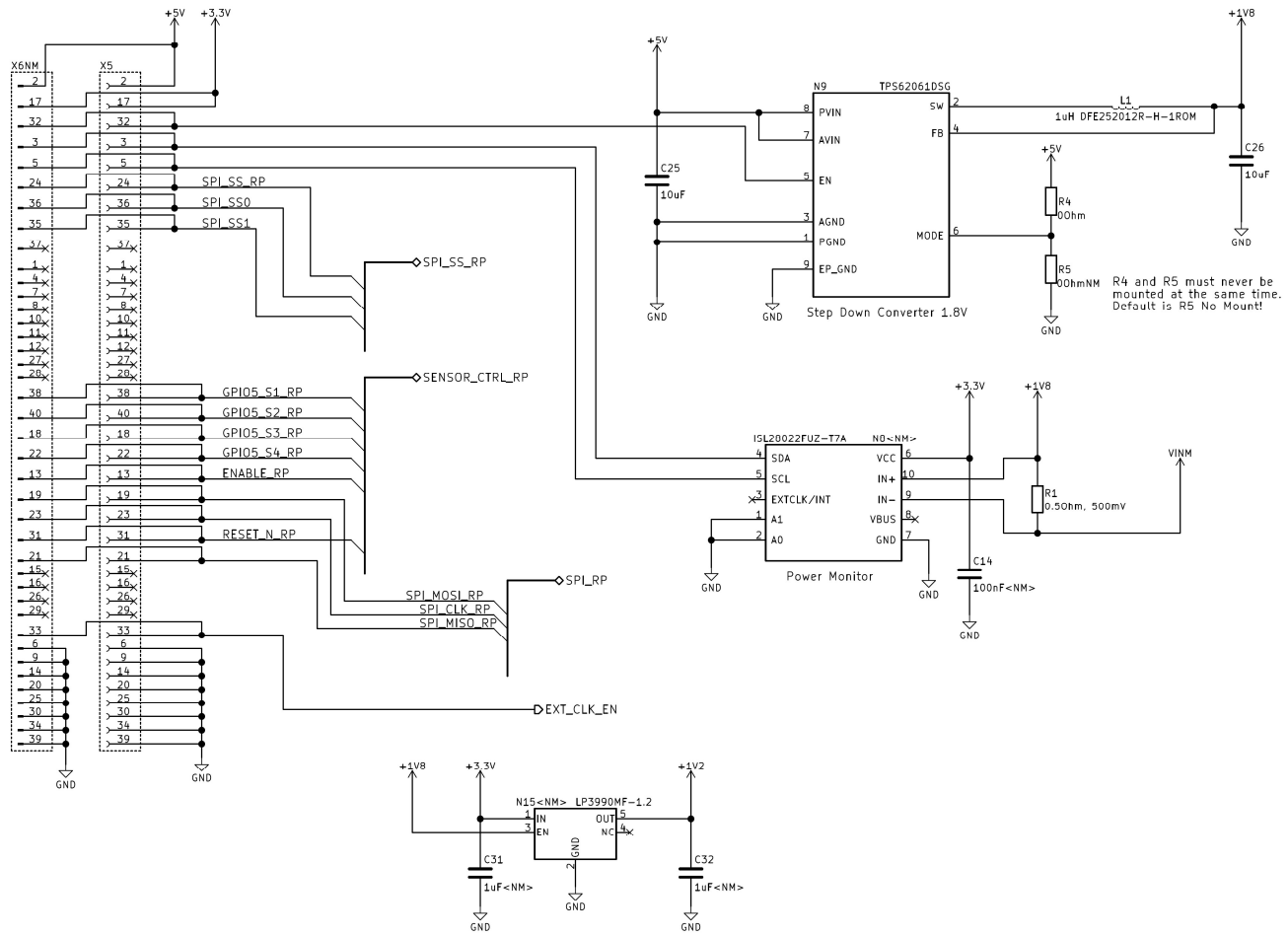
1.4 Bill of Materials

Table 1 shows the BOM for the XC111

Component ref.	Part Number	QTY	Value	Comment
N1	74ALVC32PW	1		
N13	74AUP1T34GW	1		
N12	74LVC125AD	1		
X1-X4	20021321-00040T4LF	4	2X20pin, 1.27 pitch	
B1	ASTX-H12-25.000MHz	1		
C102,C103	CAPM1005_055_1	2	100nF	
C13,C14,C19-C24,C28-C30	CAPM1005_055_1	11	100nF	
C31,C32	CAPM1005_055_1	2	1uF	
C100,C101	CAPM1005_055_1	2	10pF	
C1-C12,C25,C26	CAPM1608_090_1	14	10uF	
X5	CON_HDR_2X20_254_1_REVERSE	1		
X6	CON_HDR_2X20_254_2	1		
FB1-FB12	FB_M1608_090_1	12		
L1	INDM2520_120_1	1	1uH	
N8	ISL28022FUZ-T7A	1		
N15	LP3990MF-1.2/NOPB	1		
N5	NC7SZ00P5X	1		
N10	NC7WZ14P6X	1		
N3,N4	NC7WZ32K8X	2		
N14	PI6CL10804	1		
R4	RESM1005_040_1	1	0R	
R5	RESM1005_040_1	1	0R	
R2	RESM1005_040_1	1	3k	
R1003-R1006	RESM1005_055_1	4	2.7k	
R1001,R1002	RESM1005_055_1	2	100R	
R1	RESM3216_070_1	1	0.5R	
N9	TPS62061DSG	1		
N11	TXB0104PWR	1		

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1.5 Pinning

Figure 3 shows the PIN connections for XC111.

Pin Number	Description
1	Not Connected
2	+5V
3	I2C_SDA connected to power monitoring circuit.
4	Not Connected
5	I2C_SCL connected to power monitoring circuit.
6	GND
7	Not Connected
8	Not Connected
9	GND
10	Not Connected
11	Not Connected
12	Not Connected
13	Sensor Enable
14	GND
15	Not Connected
16	Not Connected
17	+3.3V
18	Sensor 3 GPIO5
19	SPI_MOSI
20	GND
21	SPI_MISO
22	Sensor 4 GPIO5
23	SPI_CLK
24	SPI_SS_RP (In combination with SPI_SS0 and SPI_SS1, this signal selects which sensor the SPI bus shall communicate with.)
25	GND
26	Not Connected
27	Not Connected
28	Not Connected
29	Not Connected
30	GND
31	RESET_N
32	PMU_ENABLE (Enables 5V to 1.8V voltage converter)
33	Clock Buffer Enable
34	GND
35	SPI_SS1 (In combination with SPI_SS0 and SPI_SS_RP, this signal selects which sensor the SPI bus shall communicate with.)
36	SPI_SS0 (In combination with SPI_SS1 and SPI_SS_RP, this signal selects which sensor the SPI bus shall communicate with.)
37	Not Connected
38	Sensor 1 GPIO5
39	GND
40	Sensor 2 GPIO5

3. Revision History

Date	Version	Changes
2018-02-07	1.0	Original Version
2018-02-14	1.1	
2018-04-05	1.2	Updated the electrical schematic of XC111 so that it is possible to zoom.

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