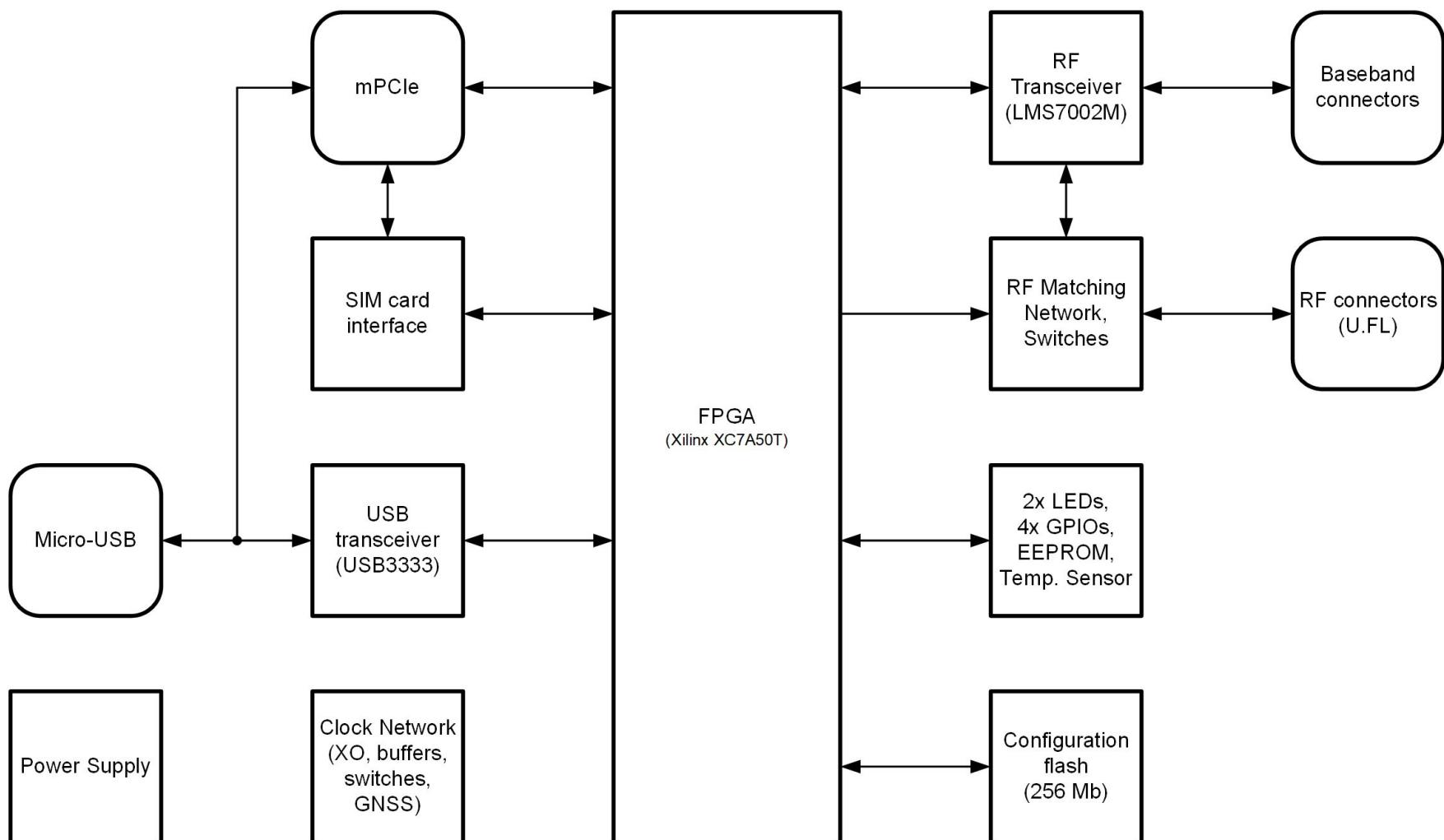


Block diagram



Project name: **LimeSDR-XTRX_1v1.PrjPcb**

Title: **Block diagram**

Size: **A4** Revision: **v1.1**

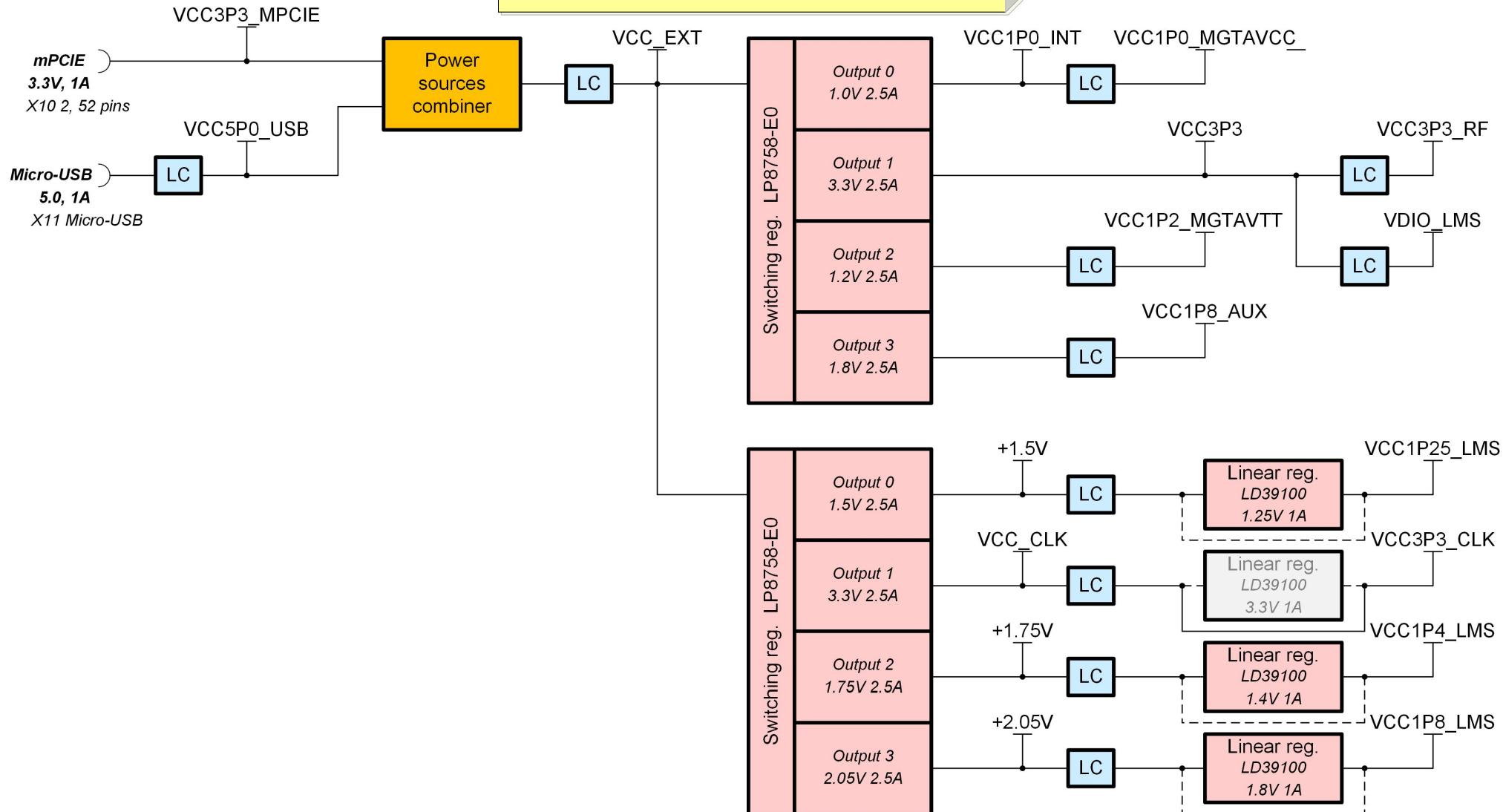
Date: **2023-04-17** Time: **09:27:11** Sheet **1** of **10**

File: **01_Block_Diagram.SchDoc**

Lime Microsystems
Surrey Tech Centre
Guildford GU2 7YG
Surrey
United Kingdom



Power diagram



Project name: **LimeSDR-XTRX_1v1.PrjPcb**

Title: **Power diagram**

Size: **A4** Revision: **v1.1**

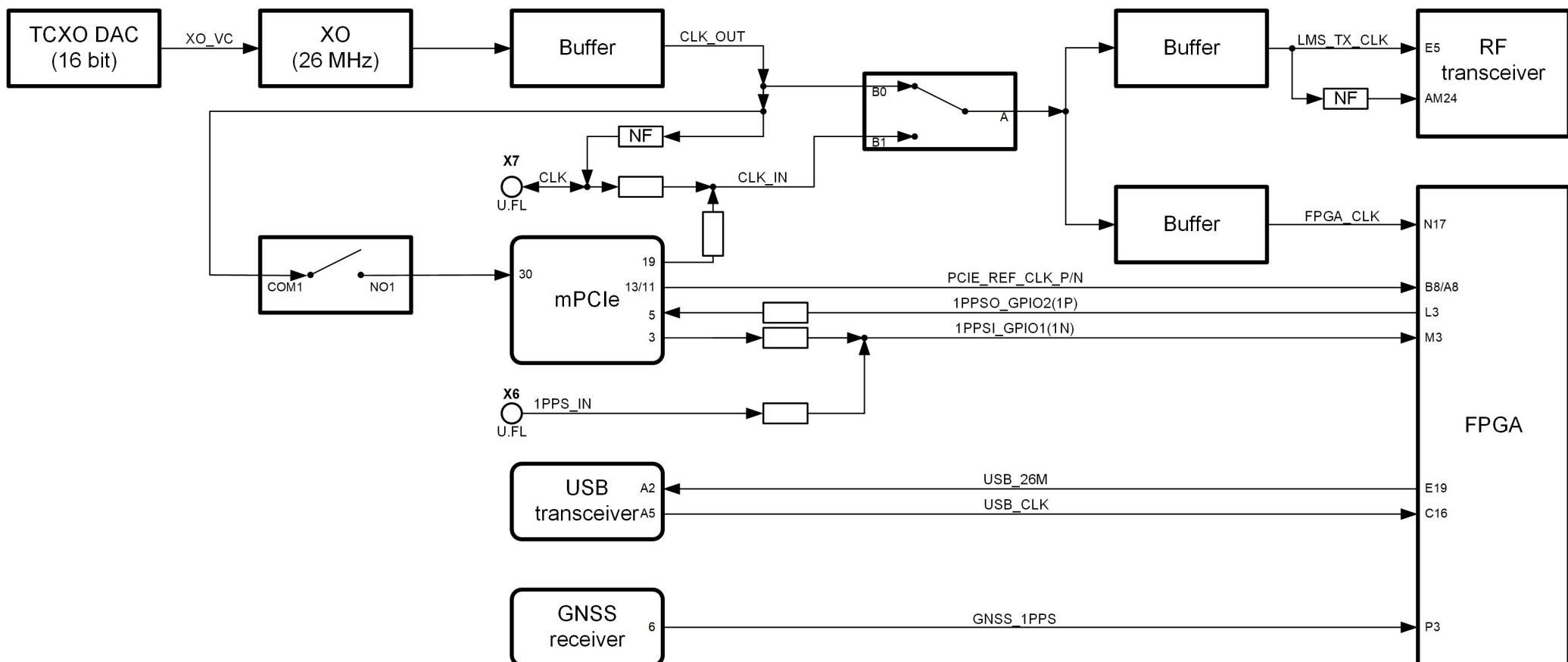
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File: **02_Power_Diagram.SchDoc**

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Guildford GU2 7YG
Surrey
United Kingdom



Clock diagram



Project name: **LimeSDR-XTRX_Iv1.PrjPcb**

Title: **Clock diagram**

Size: **A4** Revision: **v1.1**

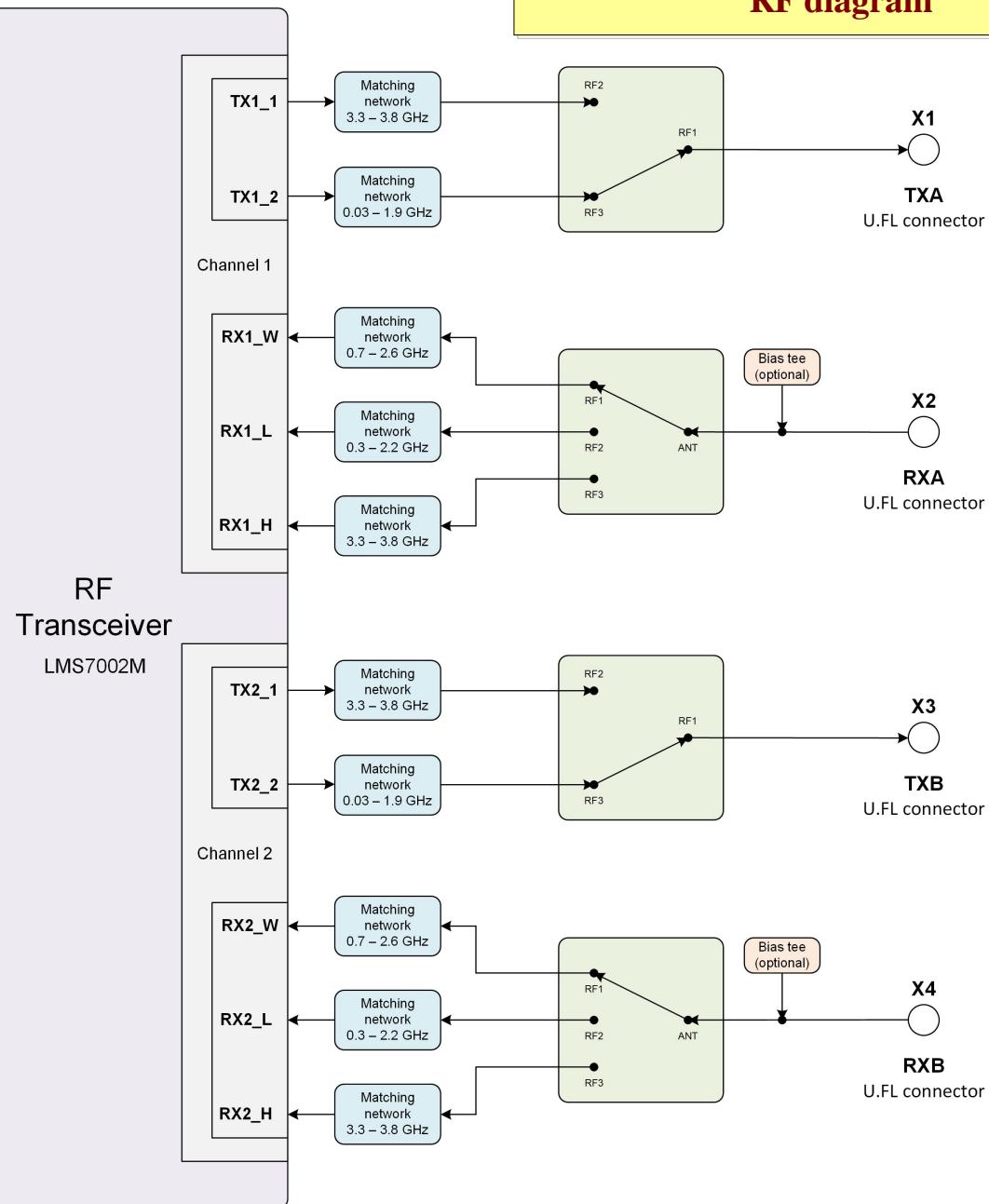
Date: **2023-04-17** Time: **09:27:17** Sheet**3** of **10**

File: **03_Clock_Diagram.SchDoc**

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Surrey
United Kingdom



RF diagram



Project name: **LimeSDR-XTRX_Iv1.PnjPcb**

Title: **RF diagram**

Size: **A4** Revision: **v1.1**

Date: **2023-04-17** Time: **09:27:19** Sheet **4** of **10**

File: **04_RF_Diagram.SchDoc**

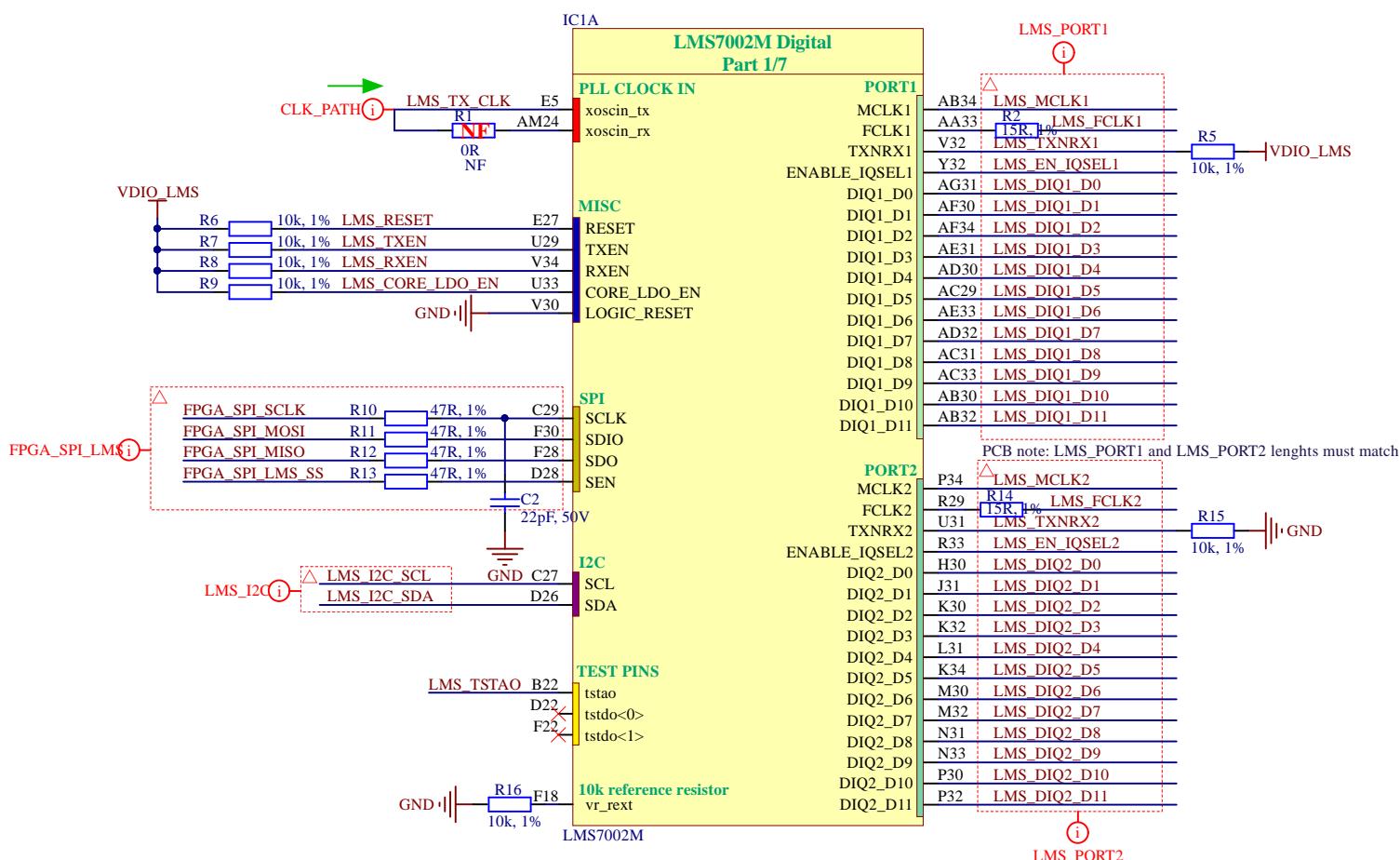
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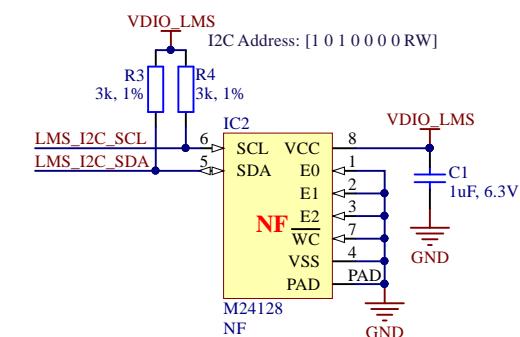
NF elements on sheet: R1, IC2
Number of NF elements on sheet: 2

LMS7002M misc

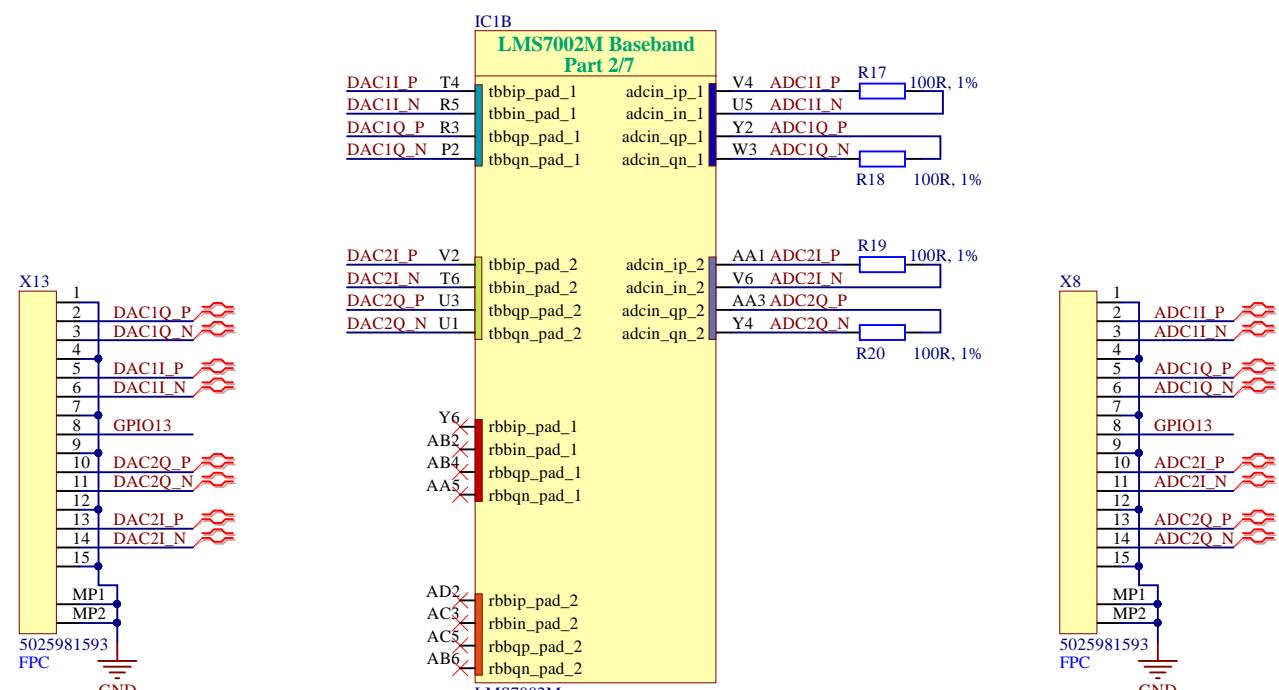
LMS7002M digital circuit



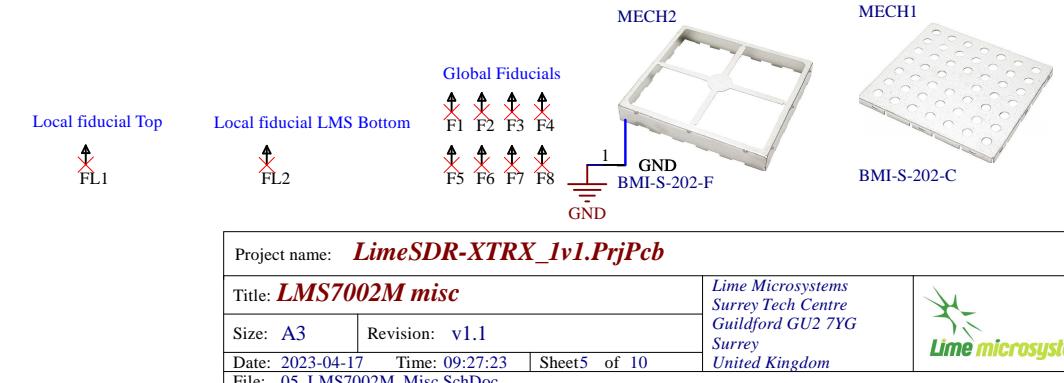
LMS EEPROM



Baseband external IO

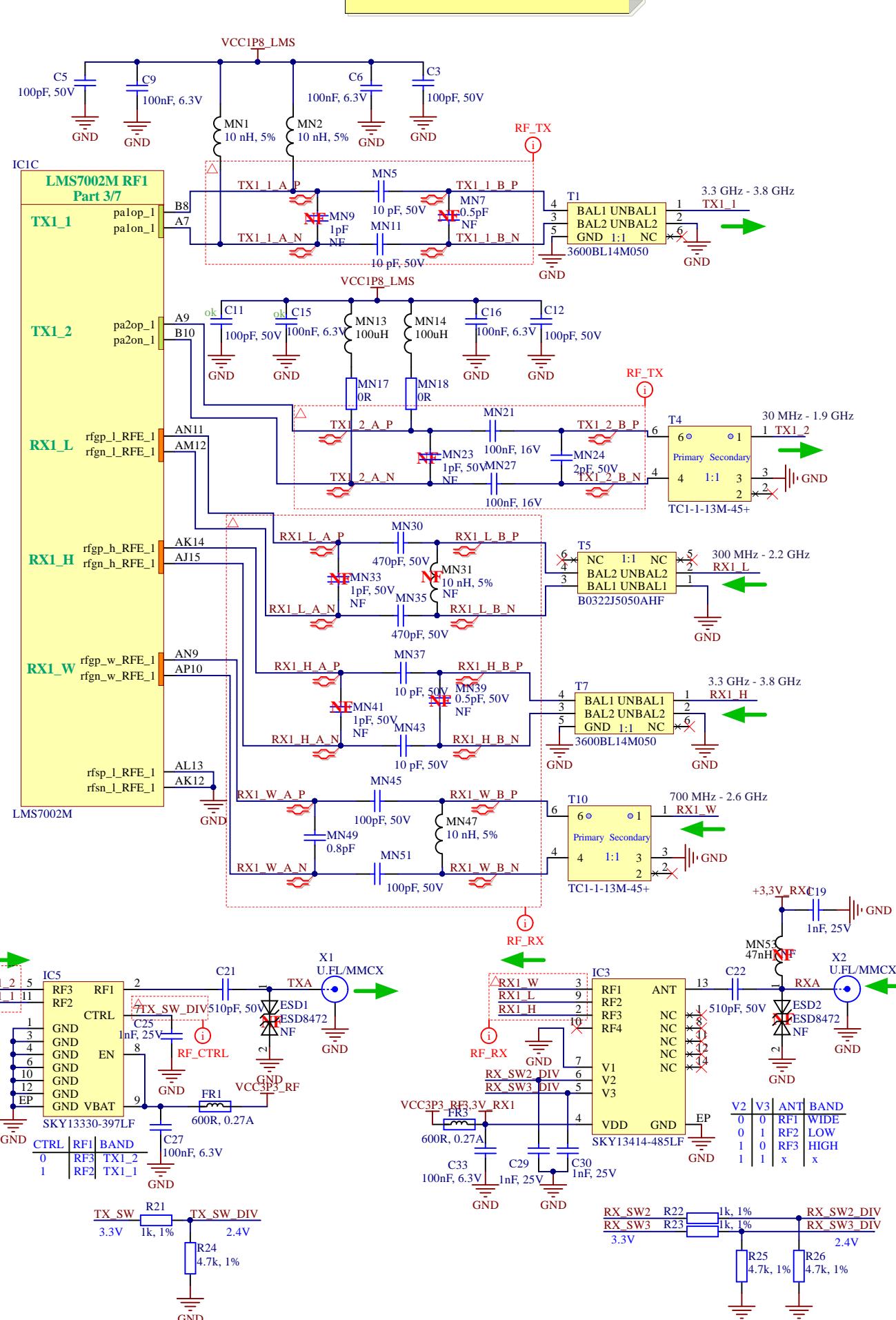


Mechanical components

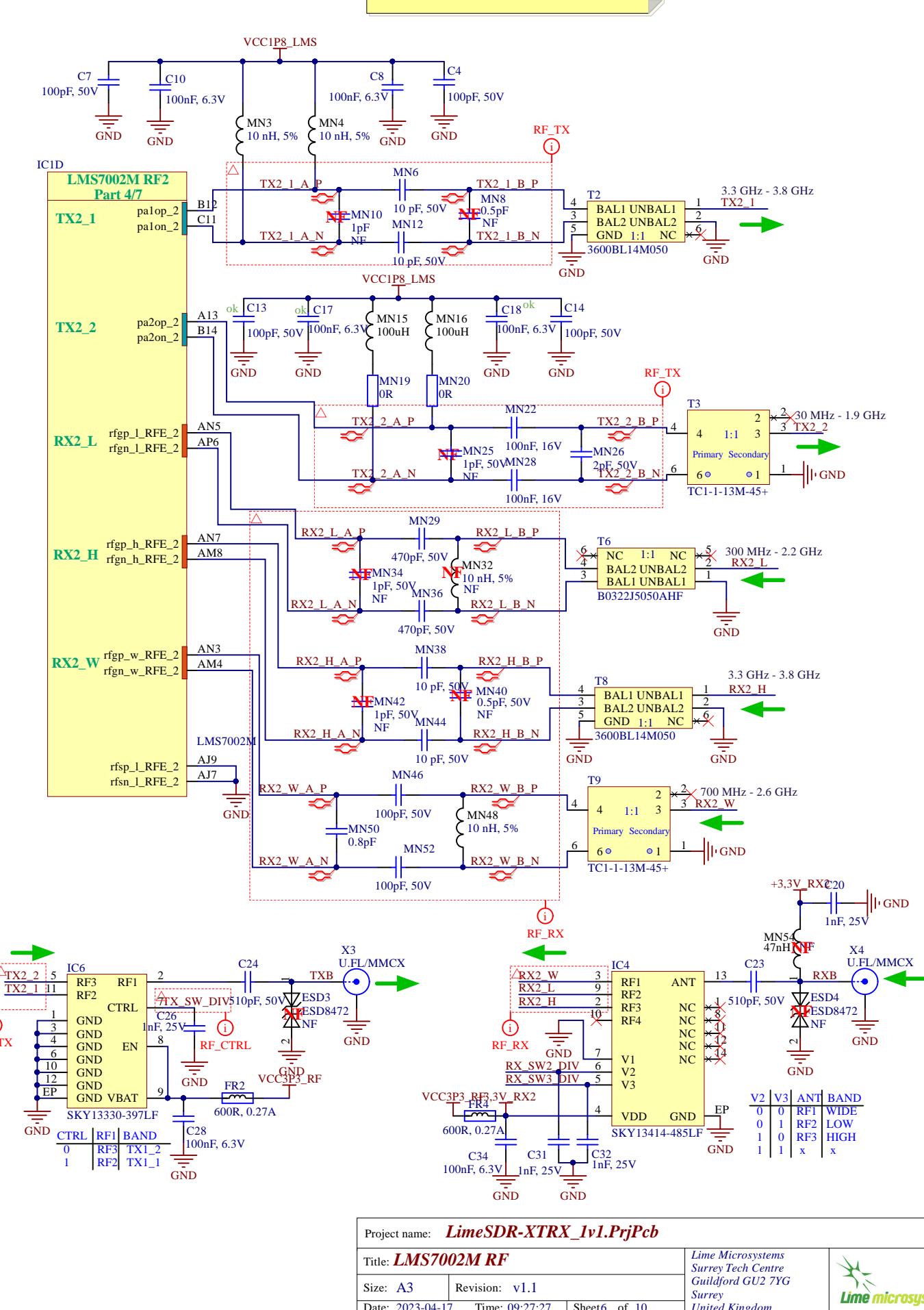


LMS7002M RF circuits

LMS RF Channel 1



LMS RF Channel 2



Project name: LimeSDR-XTRX_lv1_PriPch

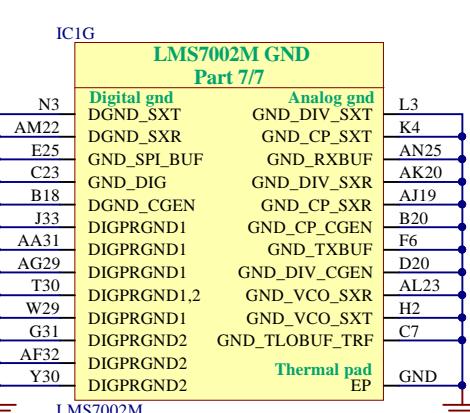
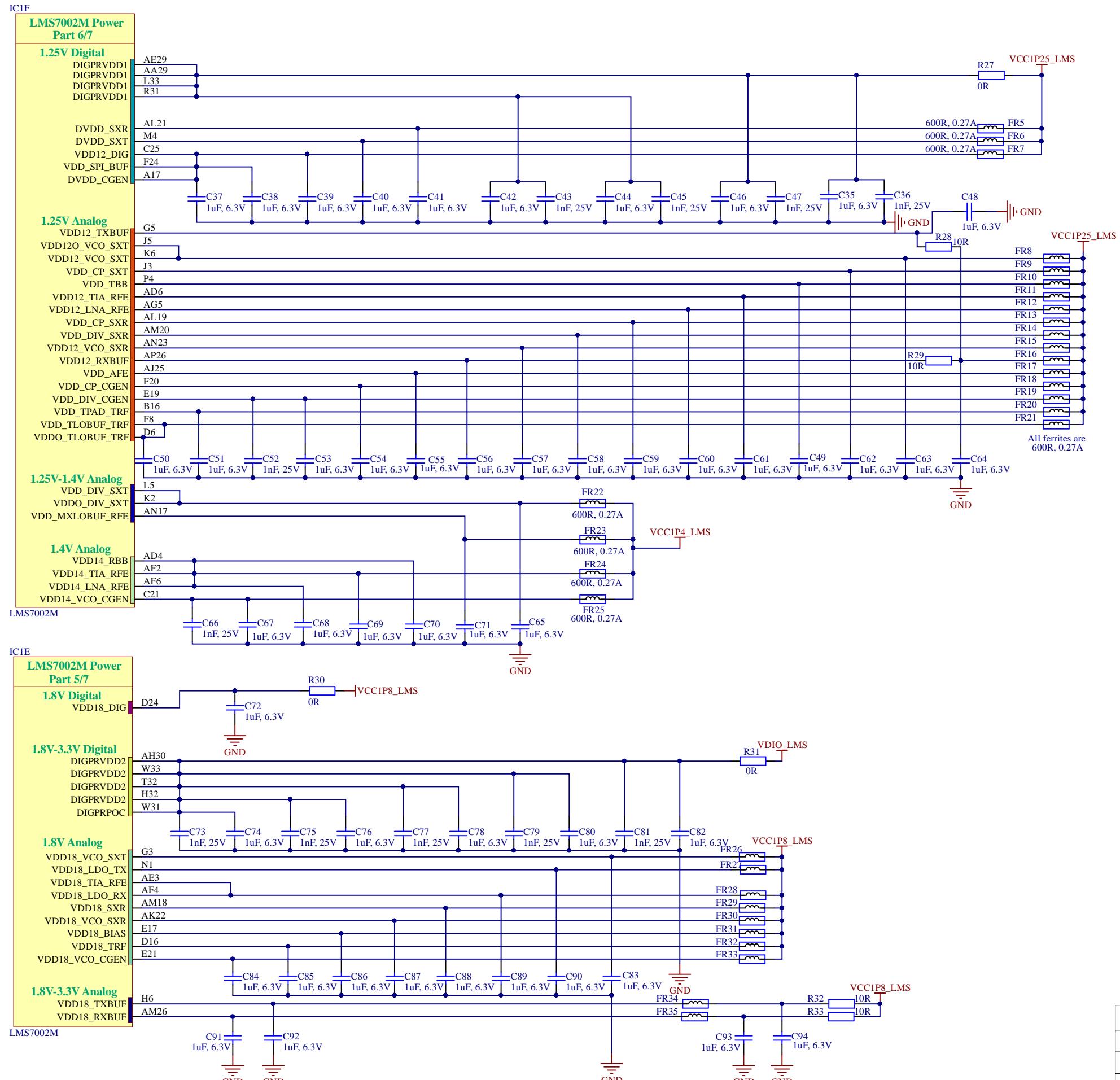
Project name: **LMS7002M BE**

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Surrey
United Kingdom*



NF elements on sheet: -
Number of NF elements on sheet: 0

LMS7002M power supply circuit



Project name: LimeSDR-YTRX_Inv_PriPch

Title: **I_MS7002M power**

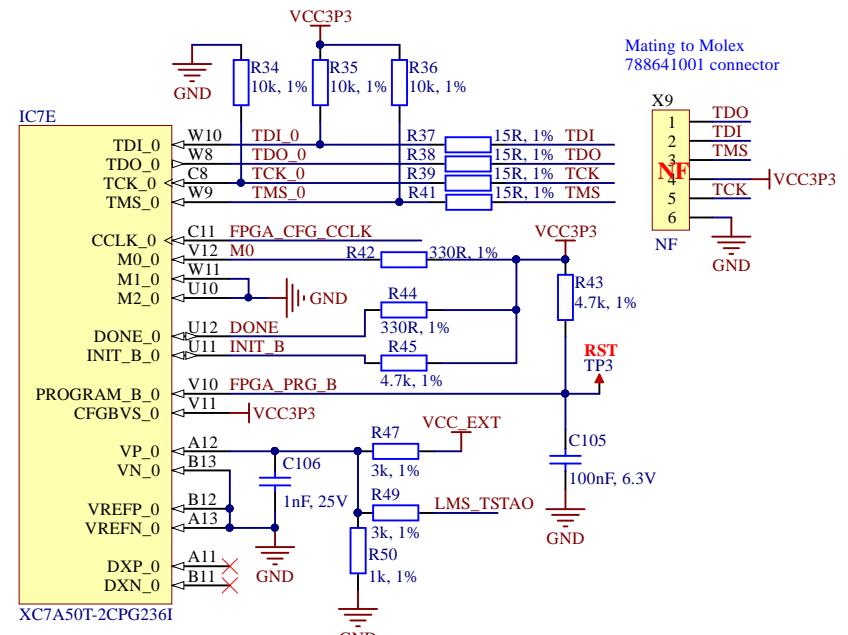
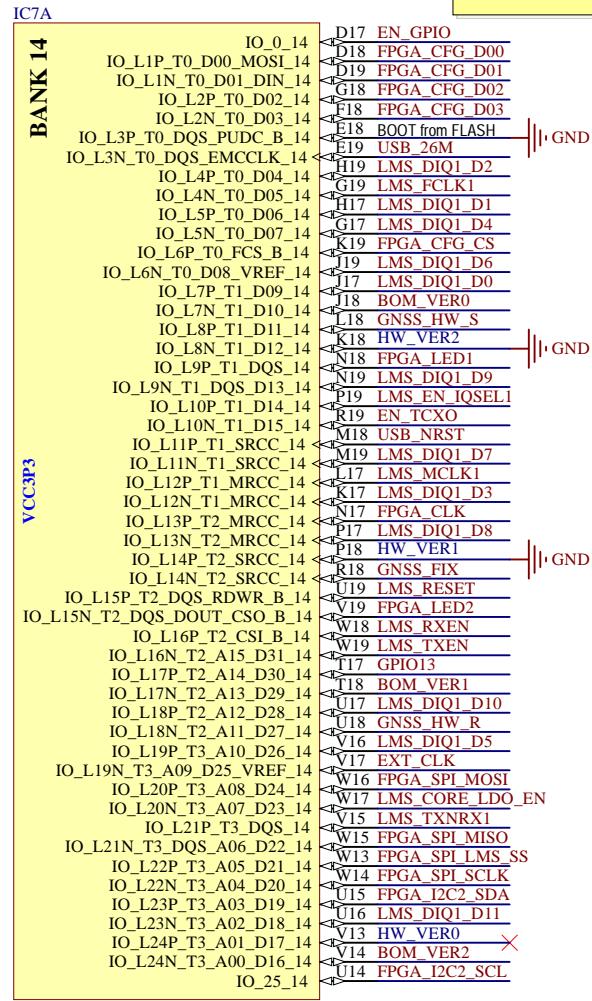
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Surrey
United Kingdom*



NF elements on sheet: X9,
Number of NF elements on sheet: 1

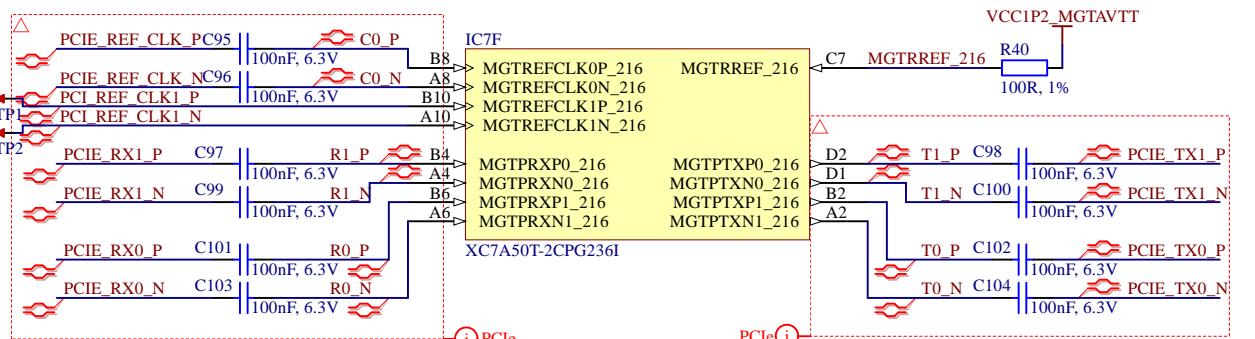
FPGA

FPGA Banks

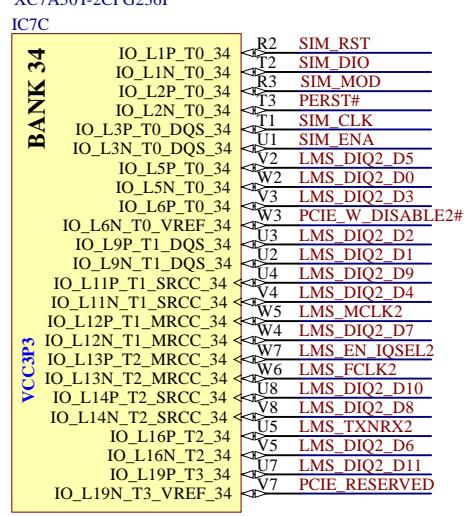
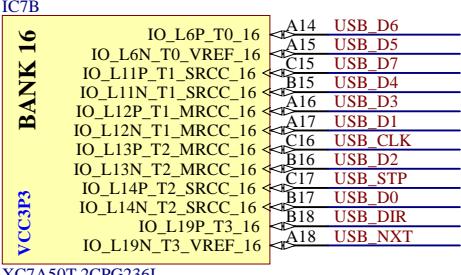
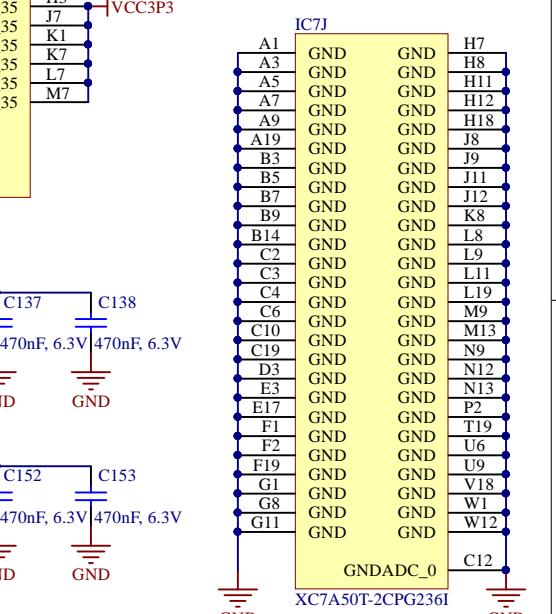
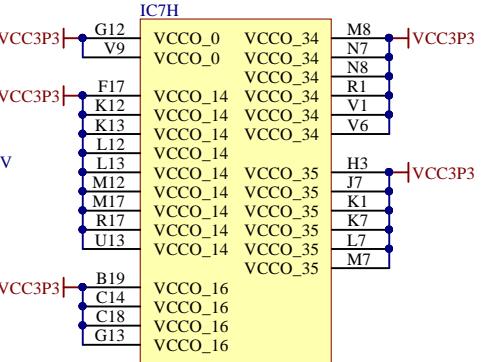
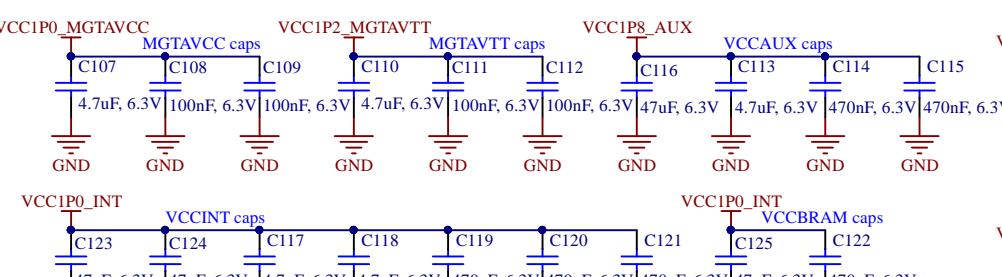
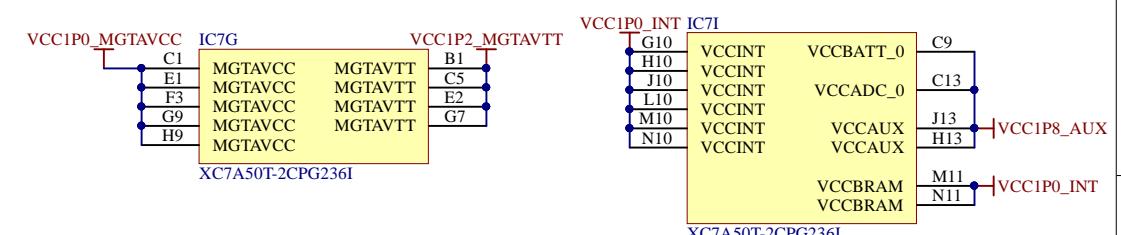


MGT transceivers

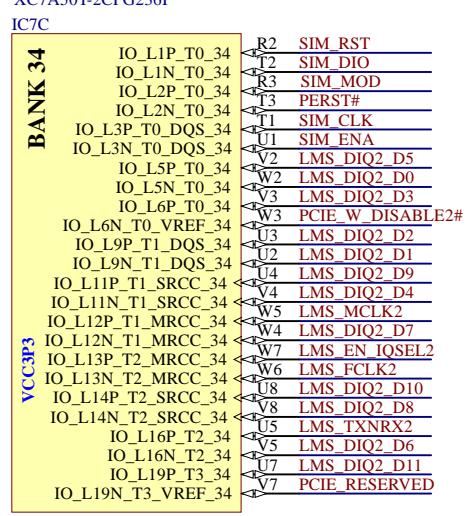
According to "Mini PCI Express Card Electromechanical Specification Revision 1.0" 37, 39, 41, 43, 45, 47, 49, 51 pins are reserved for future second PCI Express Lane. According to newer specifications, the second lane is not supported and 39, 41 pins are connected to +3.3Vaux. Since MGTPTX transceivers are not compatible with 3.3V voltage, but it is desired to have a second lane option, DC blocking capacitors are connected on all TX lines.



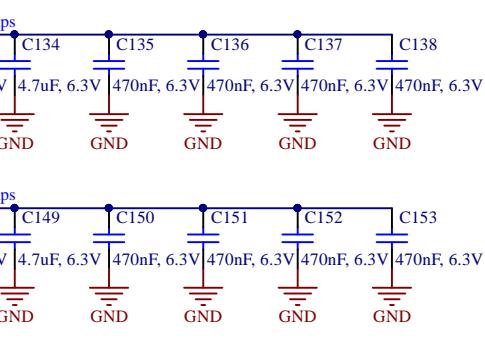
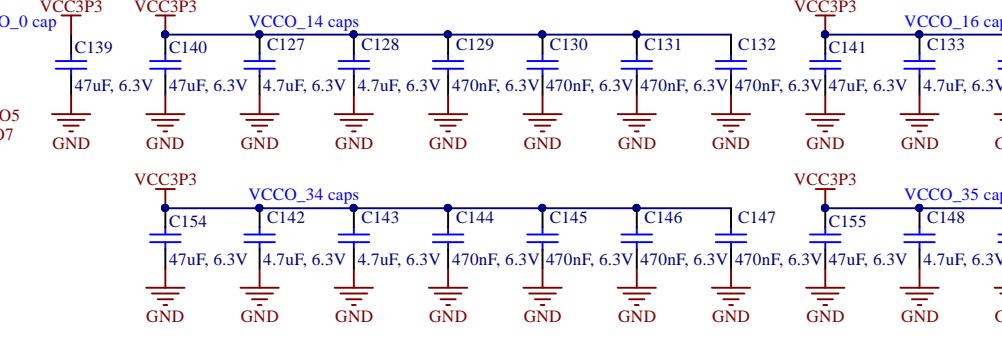
Power and decoupling



XC7A50T-2CPG236I



XC7A50T-2CPG236I



Project name: LimeSDR-XTRX_1v1.PrjPcb

Title: **FPGA**

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Surrey
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Size: **A3** Revision: v1.1

Date: 2023-04-17 Time: 09:27:34 Sheet 8 of 10

File: 08_FPGA.SchDoc

1

2

3

4

5

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7

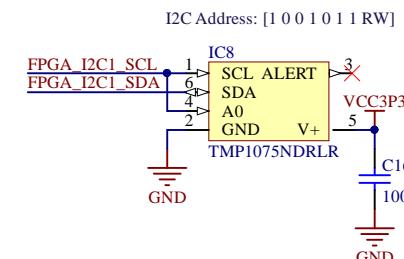
8

NF elements on sheet: ESD5, JC13, C170, R60, R65, R66, R68, R7

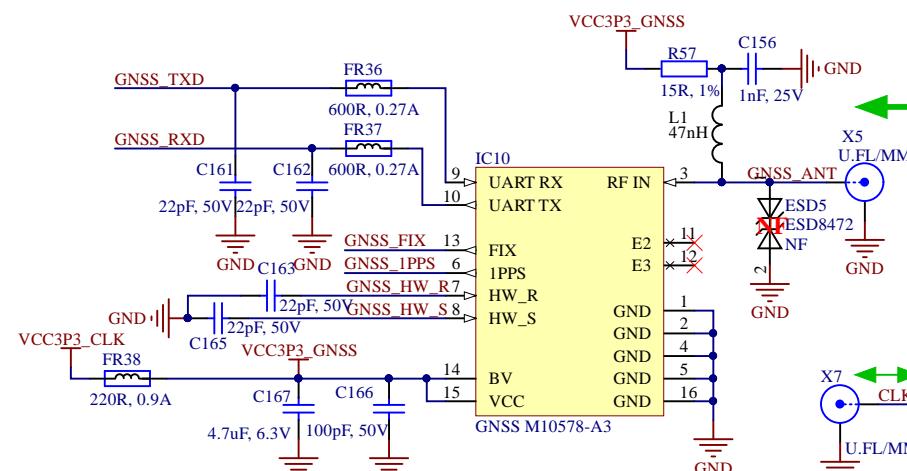
Number of NE elements on sheet: 8

Misc

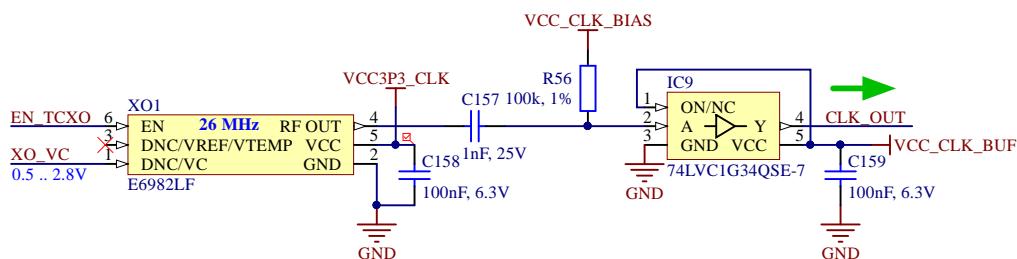
I2C Temperature sensor



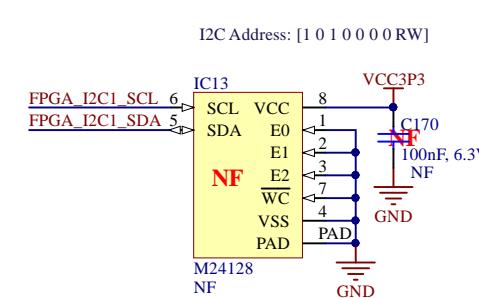
GNSS Receiver



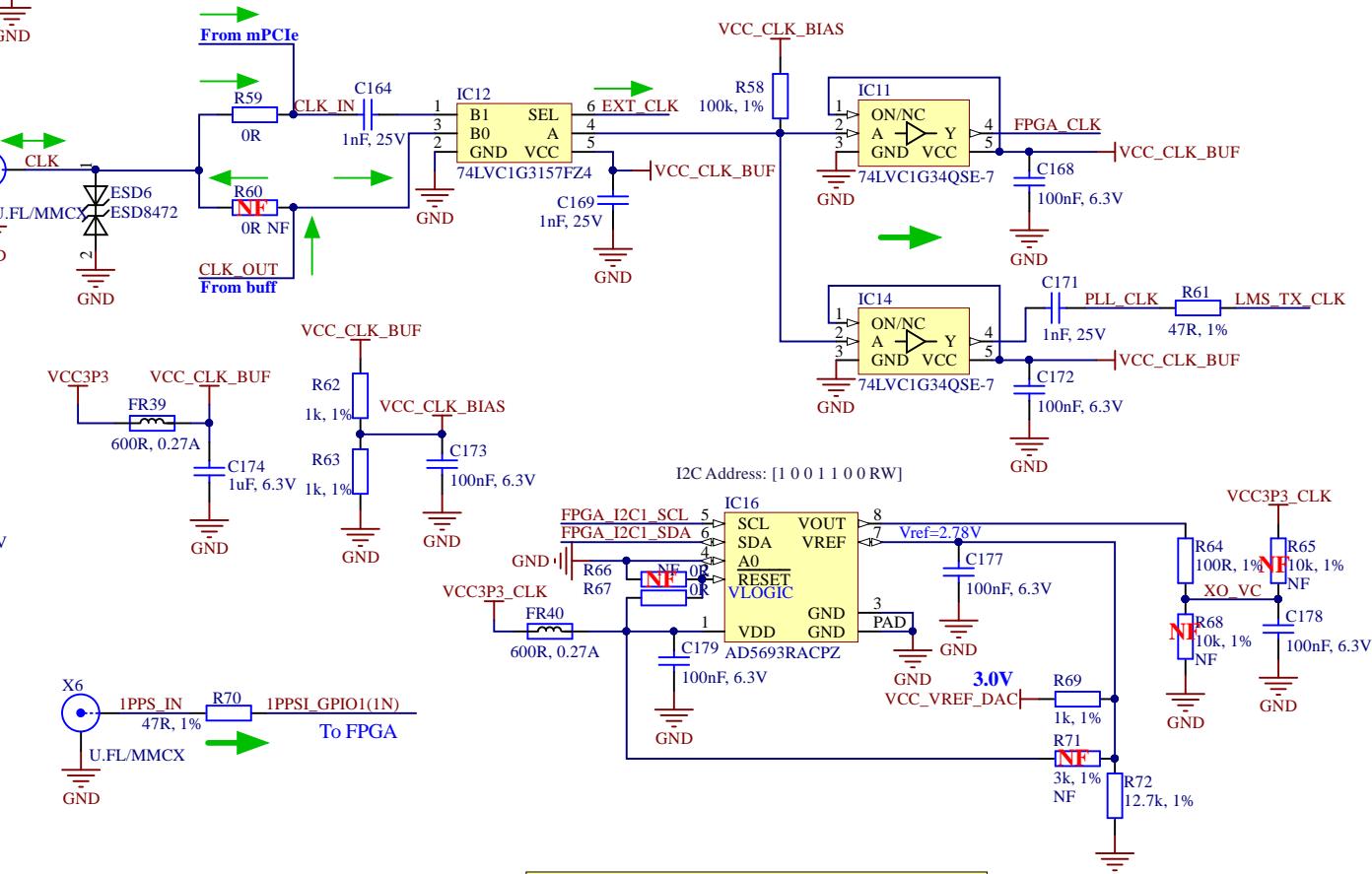
Clock



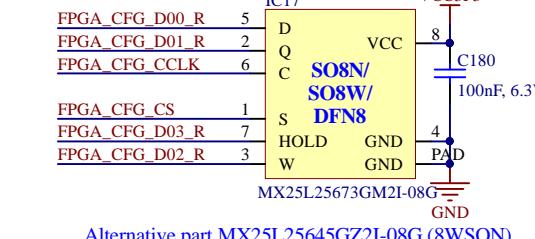
I2C EEPROM



SIM card interface

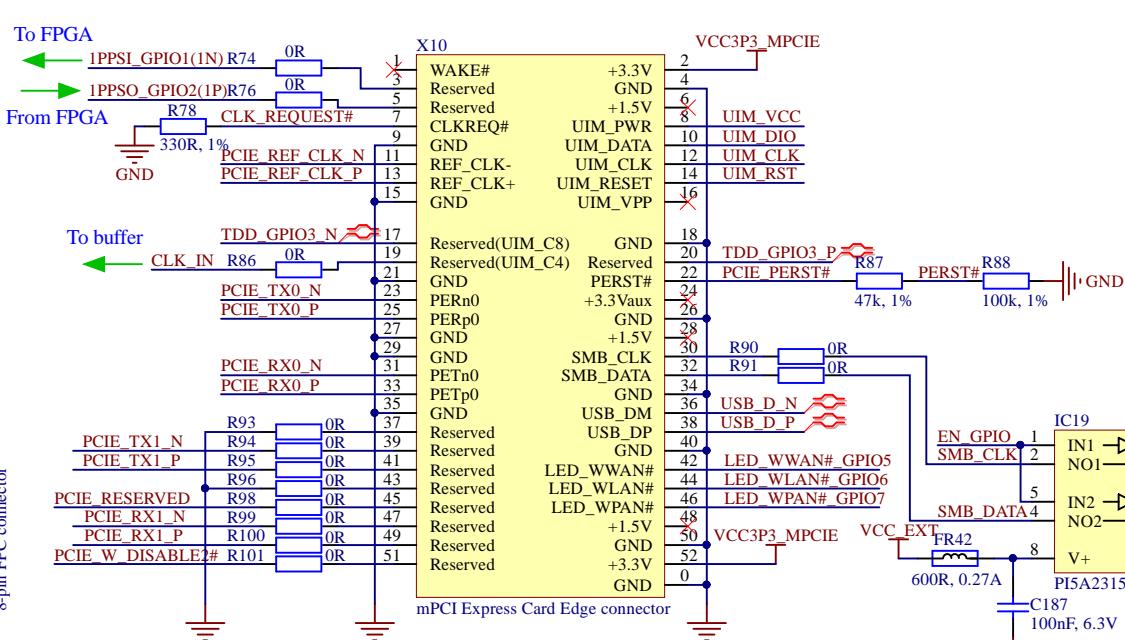
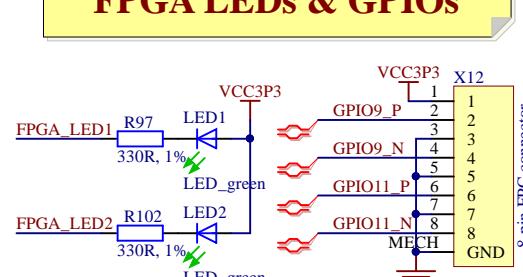


FPGA configuration Flash

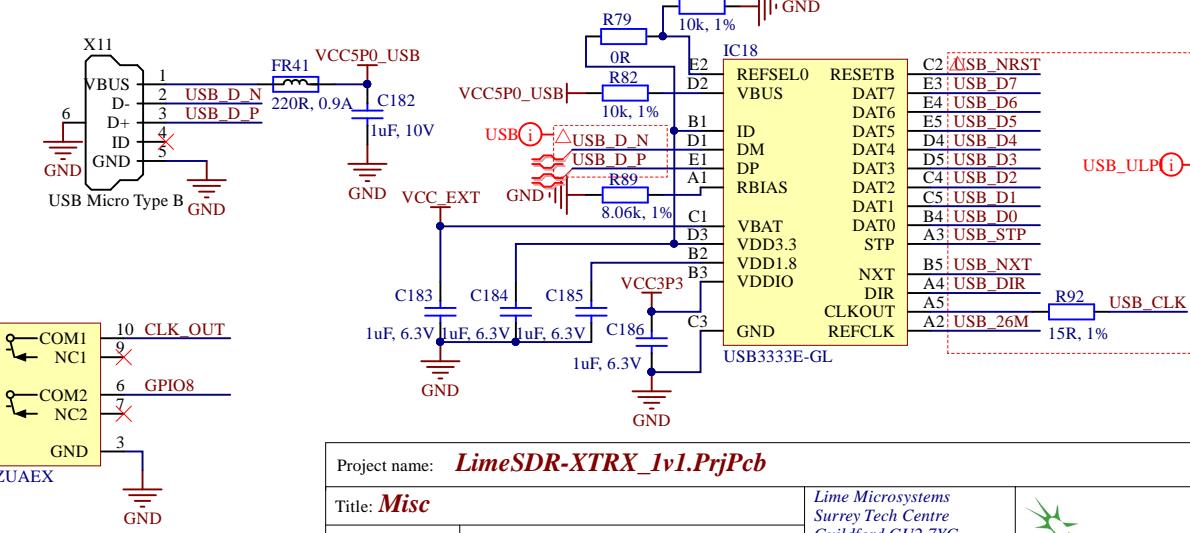


mPC

FPC & LEDs & CPIOs



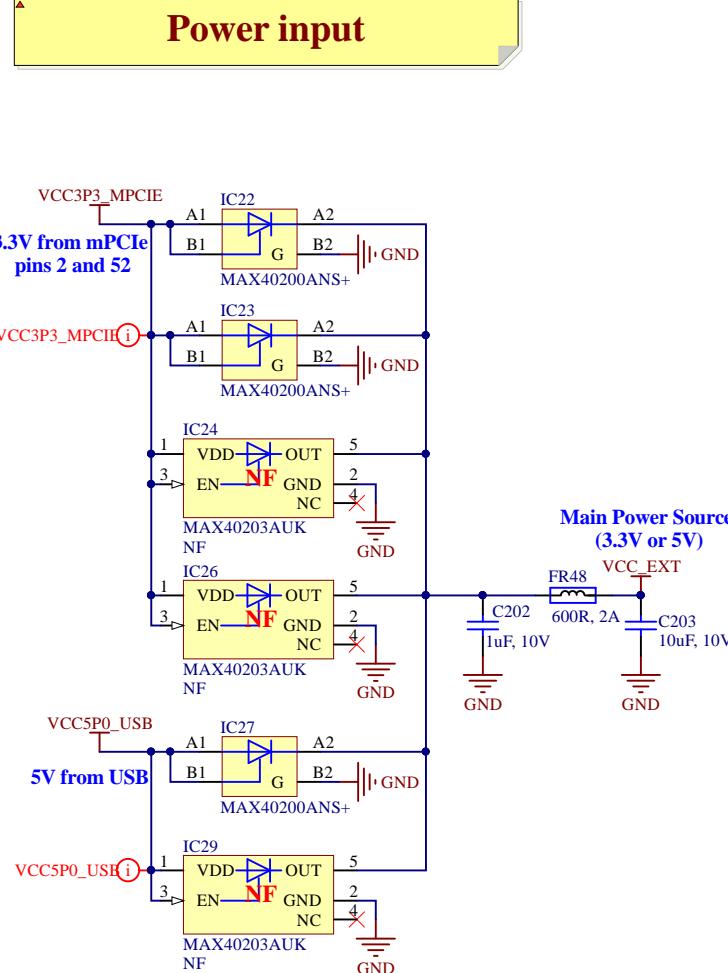
USB transceiver



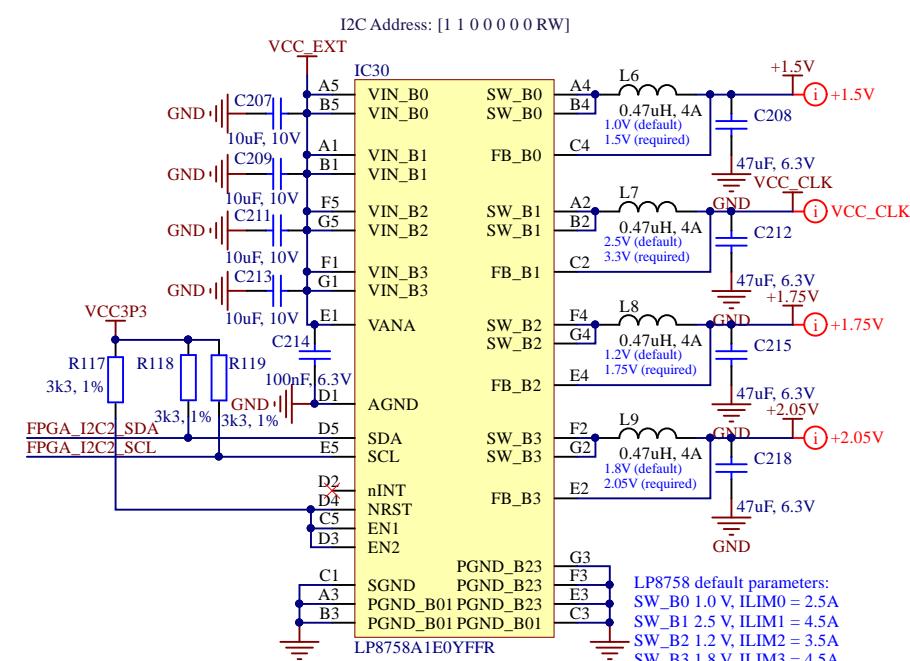
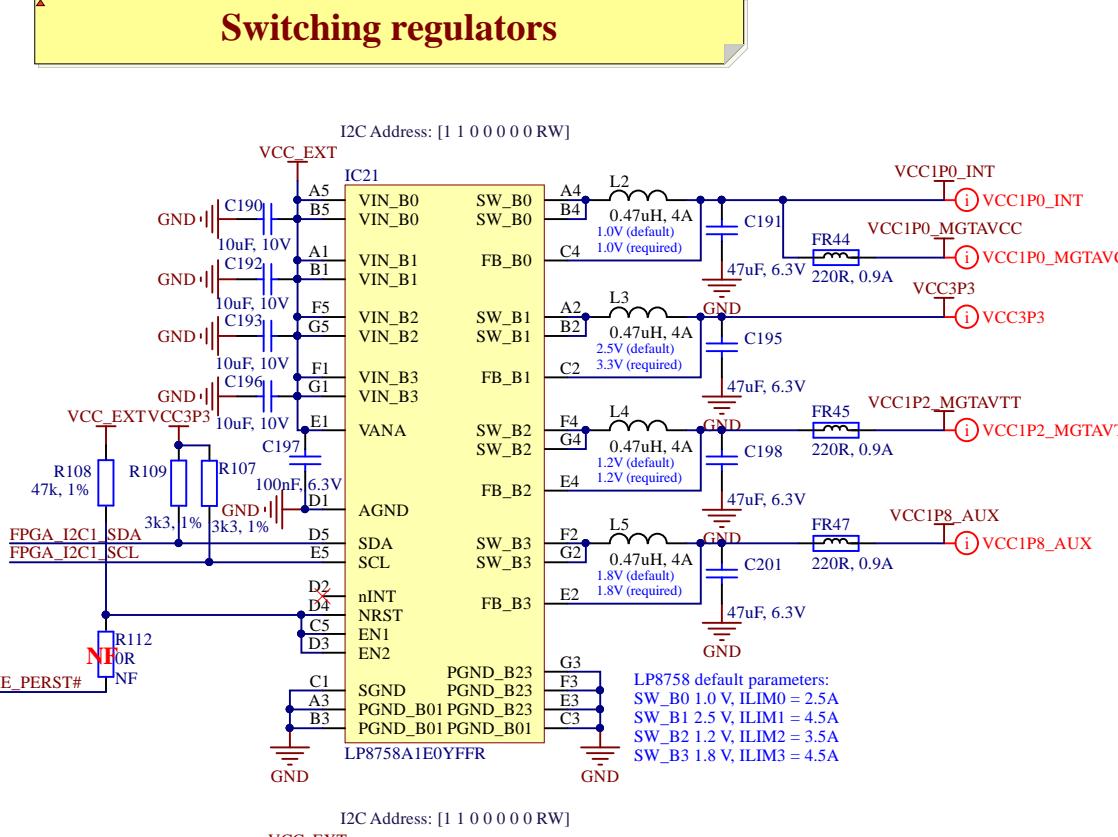
NF elements on sheet: IC24, IC26, IC29, R103, C194, R106, C204, R112, R113, C210, IC31, R120, R121, C219, R125, C26
Number of NF elements on sheet: 16
Number of NF elements on all sheets: 47

Board power circuits

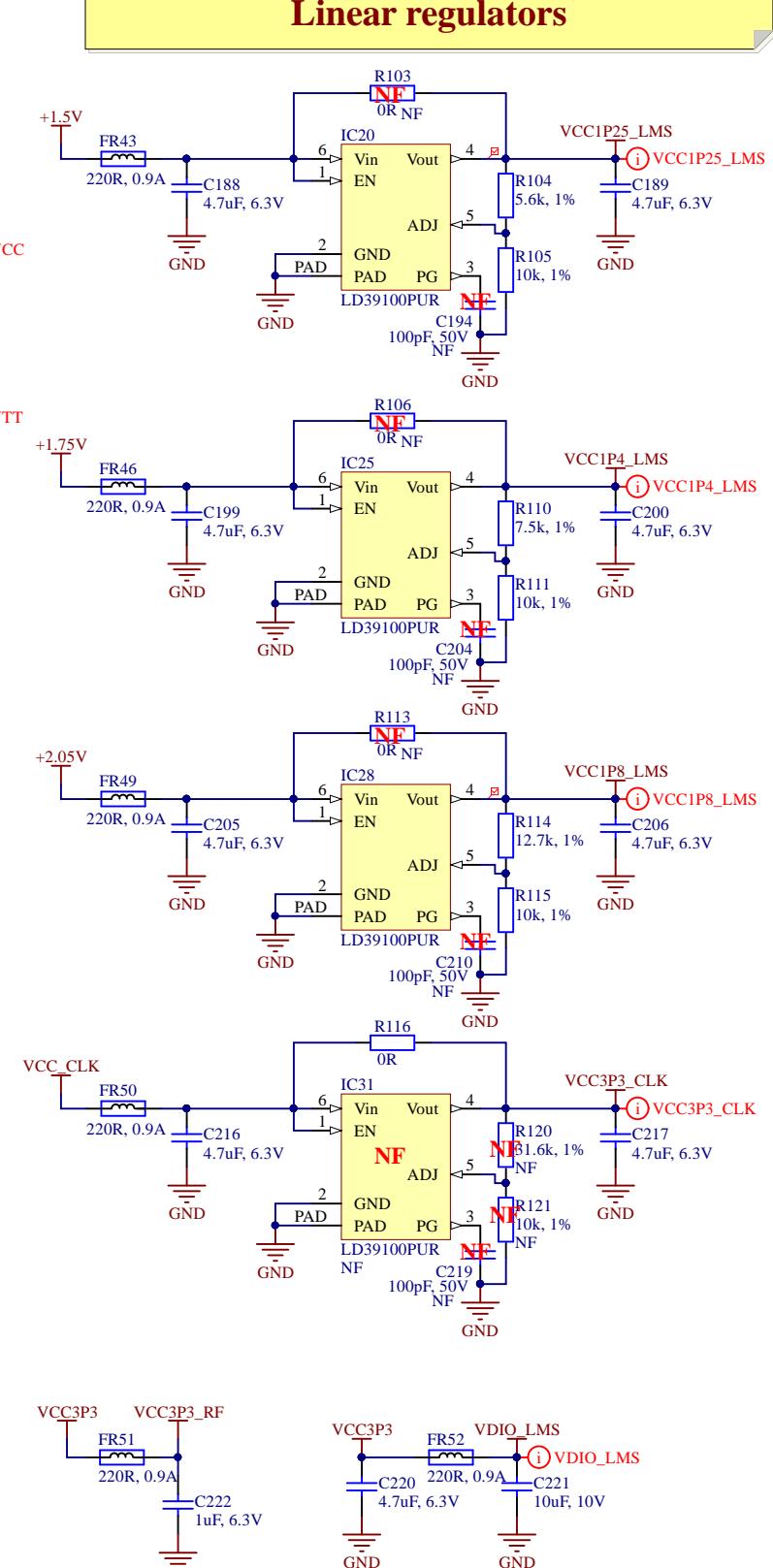
Power input



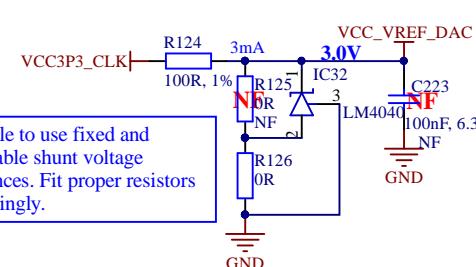
Switching regulators



Linear regulators



Voltage reference



Possible to use fixed and adjustable shunt voltage references. Fit proper resistors accordingly.

Project name: LimeSDR-XTRX_Inv.PrbPcb	
Title: Power	<i>Lime Microsystems Surrey Tech Centre Guildford GU2 7YG Surrey United Kingdom</i>
Size: A3	Revision: v1.1
Date: 2023-04-17	Time: 09:27:42
File: 10_Power.SchDoc	