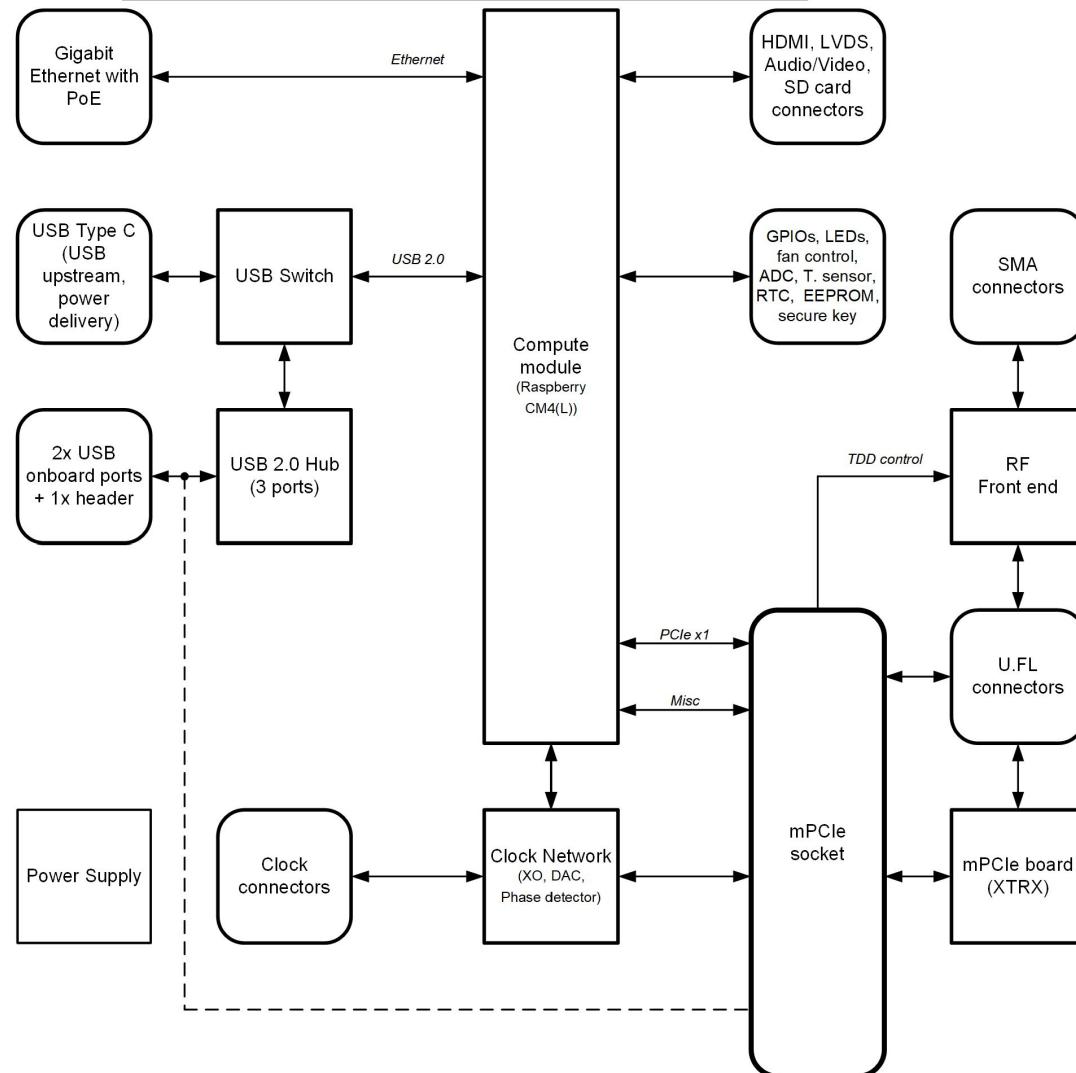


## Block diagram



Project name: **LimeKEY-RPCM\_Iv0.PrjPcb**

Title: **Block diagram**

Size: **A4** Revision: **v1.0**

Date: **2022-10-11** Time: **15:19:06** Sheet **1** of **12**

File: **01\_Block\_diag.SchDoc**

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United Kingdom



## Power diagram

A

A

B

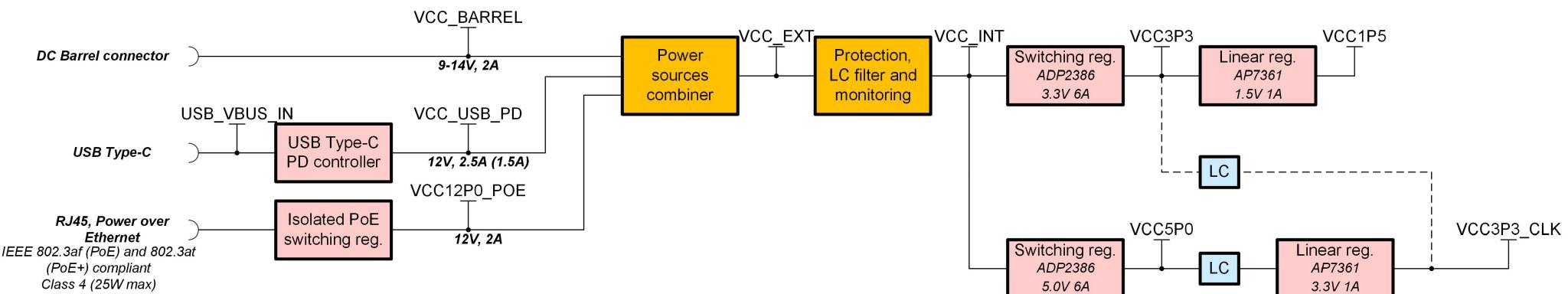
B

C

C

D

D



Project name: **LimeKEY-RPCM\_Iv0.PjrPcb**

Title: **Power diagram**

Size: **A4** Revision: **v1.0**

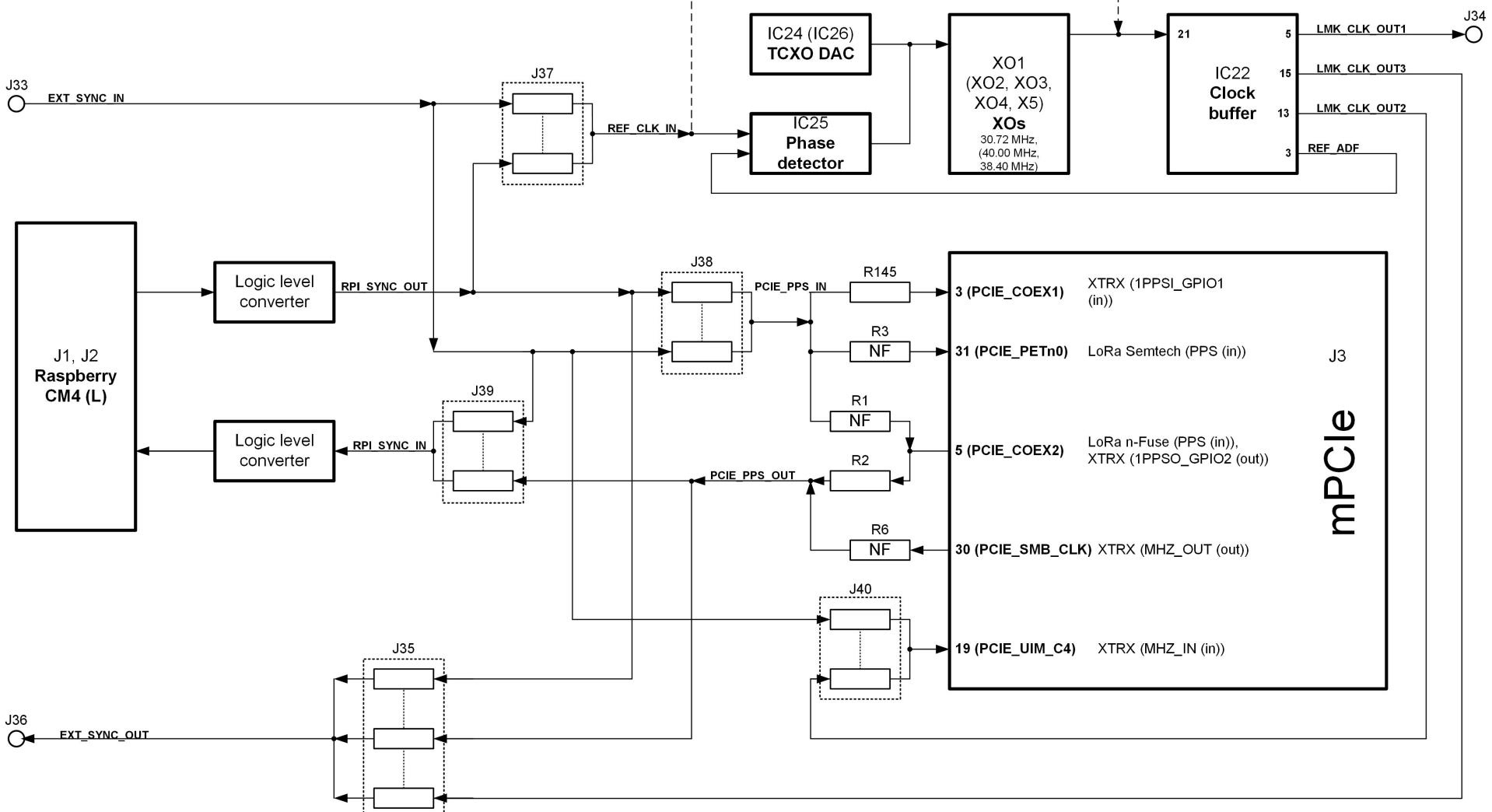
Date: **2022-10-11** Time: **15:19:10** Sheet**2** of **12**

File: **02\_Power\_diag.SchDoc**

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United Kingdom



## Clock diagram



Project name: **LimeKEY-RPCM\_Iv0.PrjPcb**

Title: **Clock diagram**

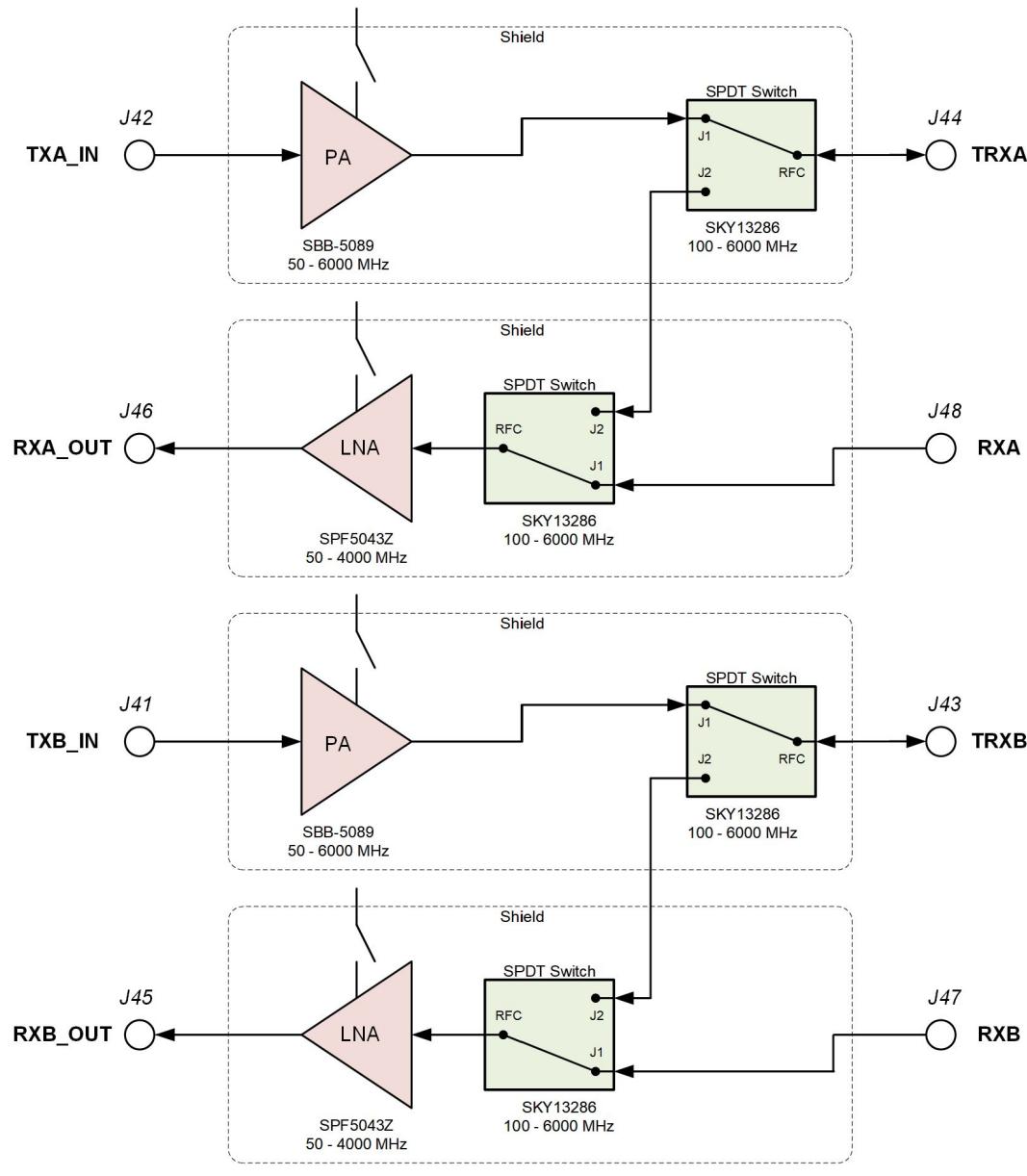
Size: **A4** Revision: **v1.0**

Date: **2022-10-11** Time: **15:19:13** Sheet**3** of **12**

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## RF diagram



Project name: LimeKEY-RPCM\_Iv0.PrbPcb

Title: RF diagram

Size: A4 Revision: v1.0

Date: 2022-10-11 Time: 15:19:18 Sheet 4 of 12

File: 04\_RFFE diag.SchDoc

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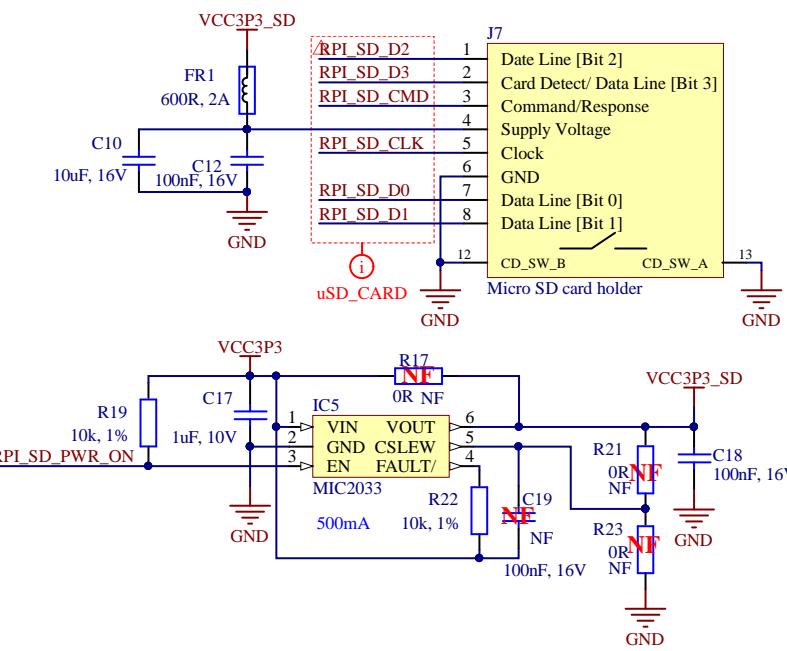


NF elements on sheet: R13, R14, R17, R18, R20, R21, R23, C19, J11, R26, J15, R33, R35, R37, C30, J19  
Number of NF elements on sheet: 16

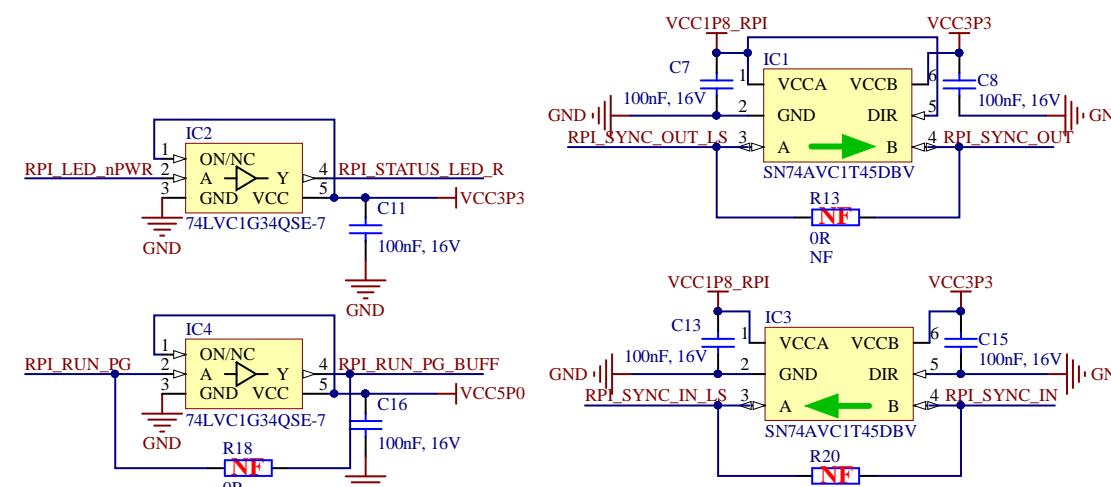
## Misc 1

### uSD card

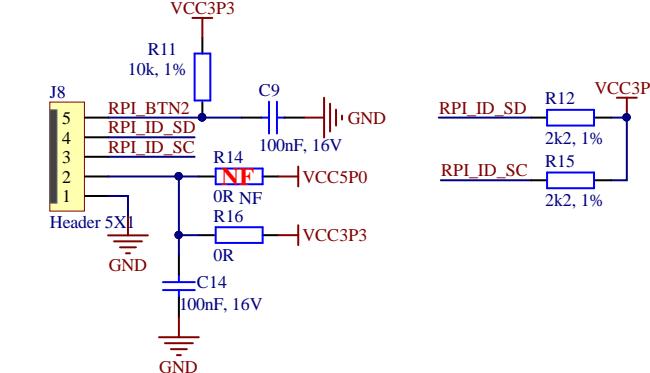
Only for CM4L with no on-board Flash (eMMC)



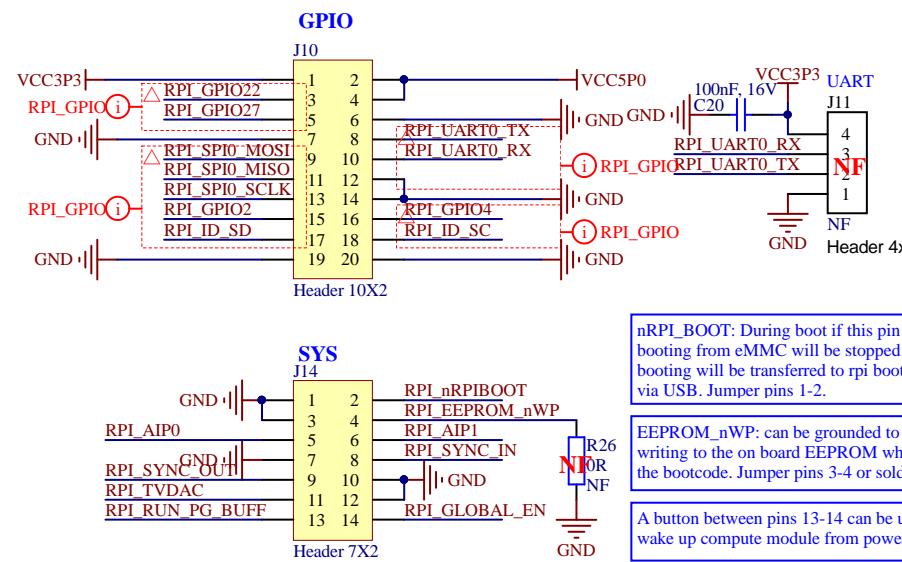
### Buffers, level converters



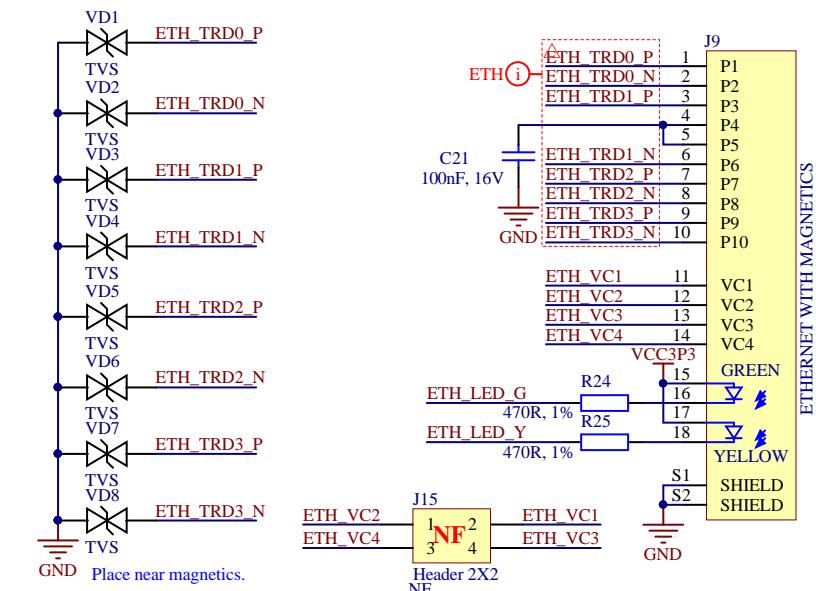
### Front screen I2C + BTN



### GPIO ans SYS headers

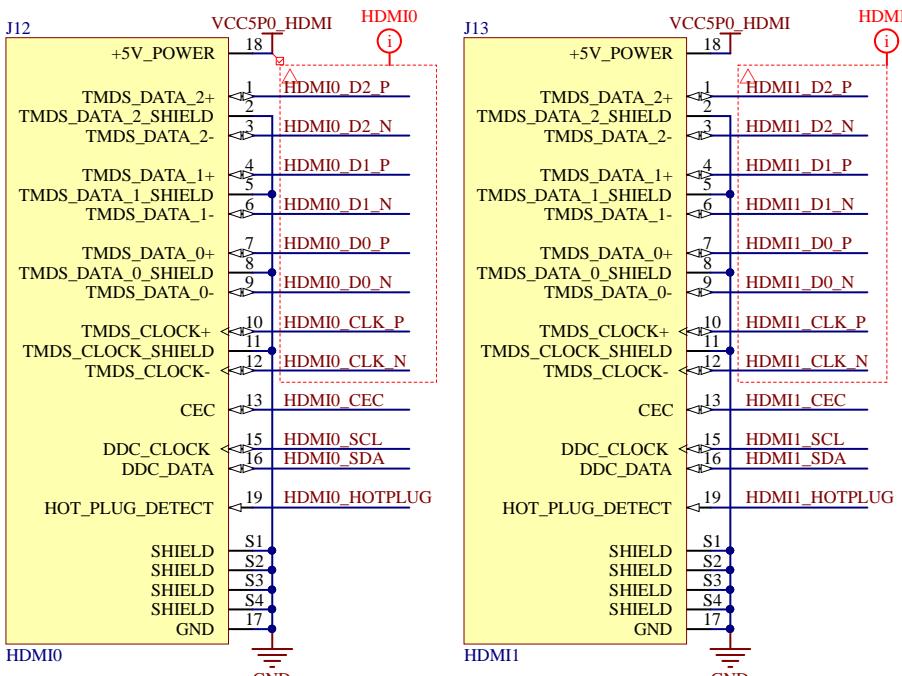


### RJ45 (Ethernet) connector

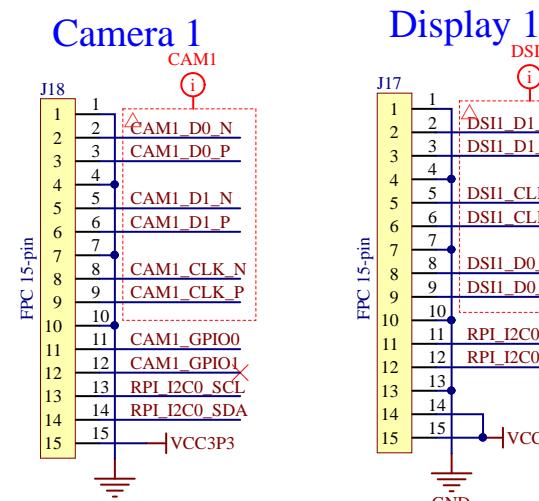


ETHERNET WITH MAGNETICS

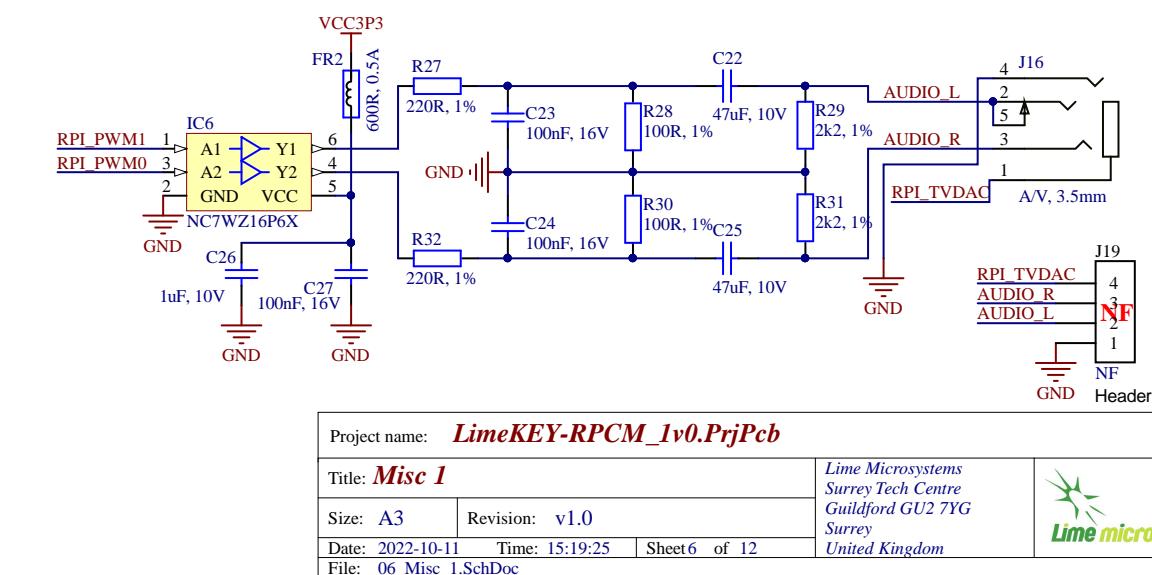
### HDMI



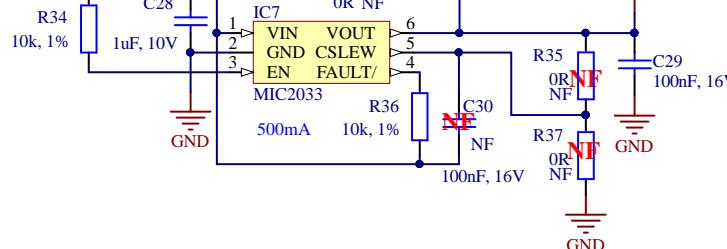
### LVDS (Camera + Display)



### Display 1

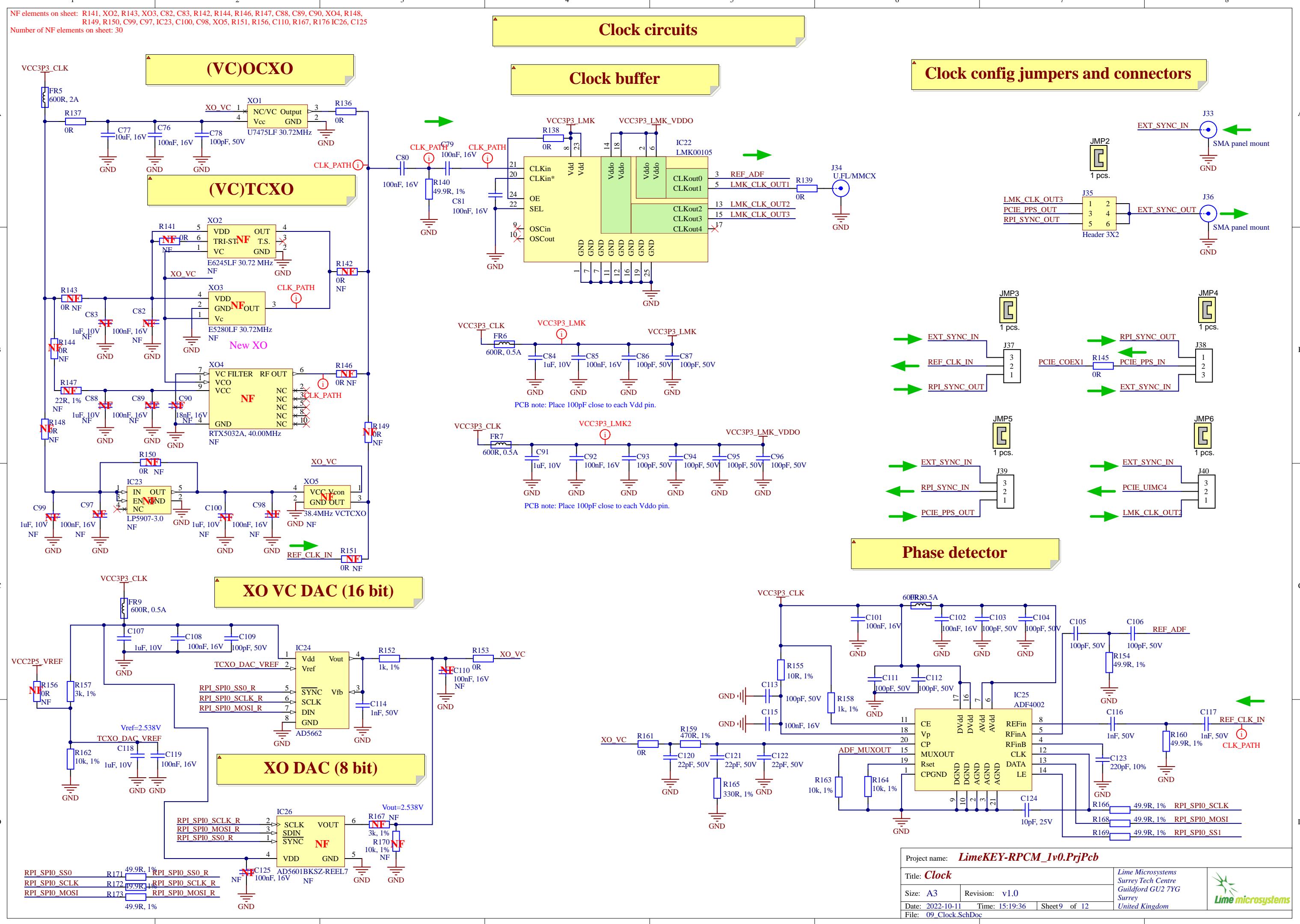


PCB note: make each HDMI group differential traces lenght equal and impedance of 100Ω









NF elements on sheet: ESD1, ESD2, ESD3, ESD4, R176, R179, R183, R191, C174, R177, R182, R190, C175, R174, R180, R188, R178, C172, R175, R181, R189, C173

Number of NF elements on sheet: 22

## RF front end

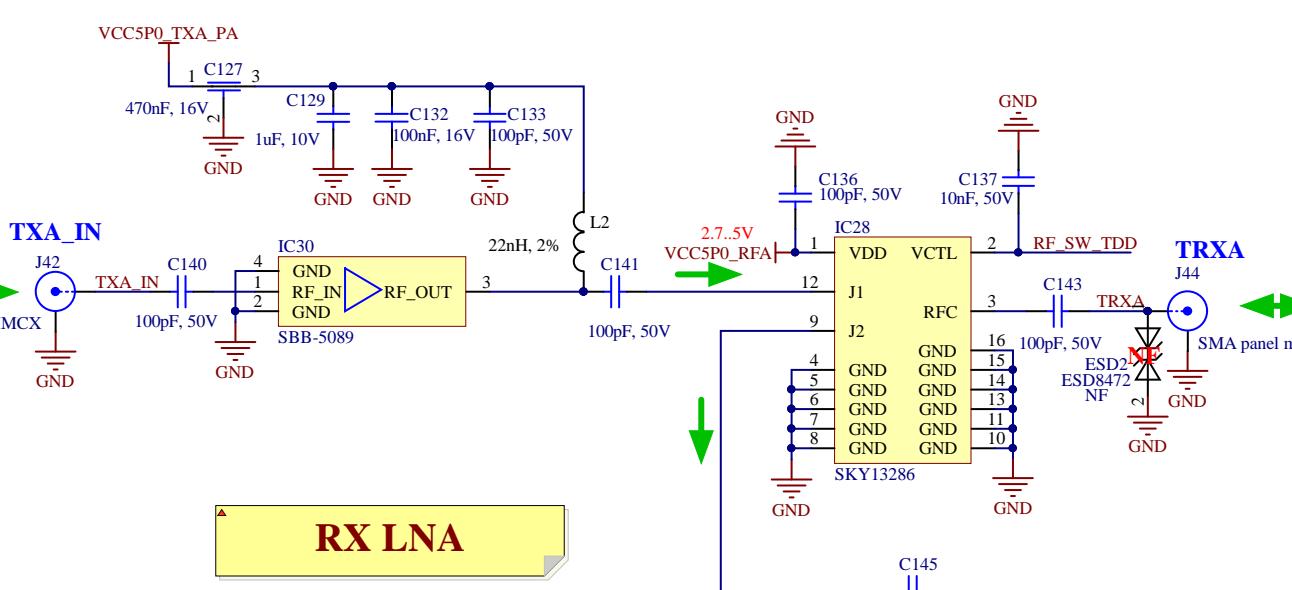
### Channel A

All RF switches are controlled together

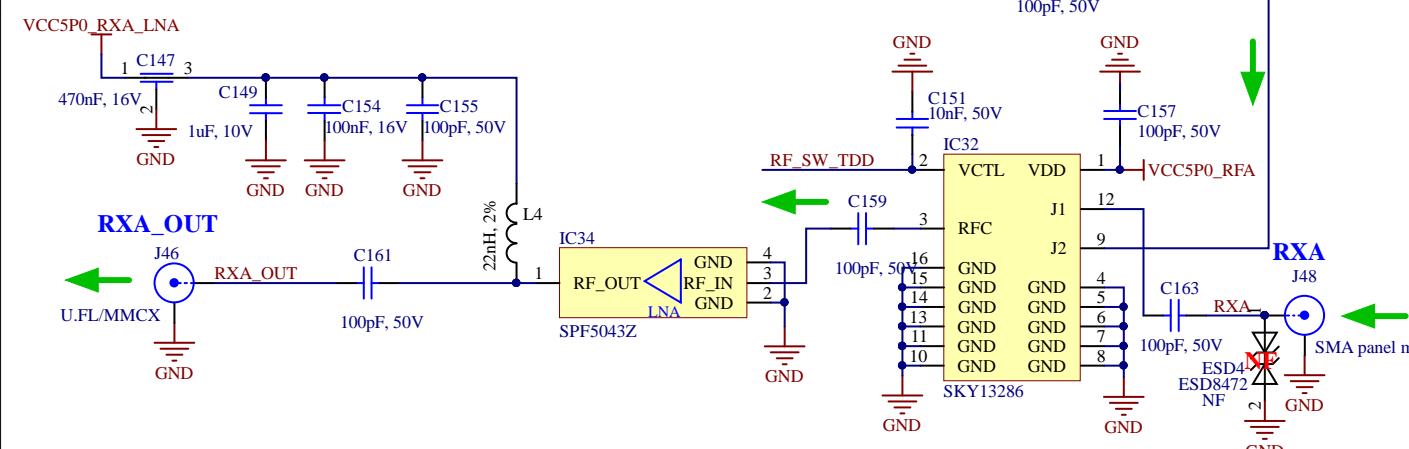
### Channel B

#### TX PA

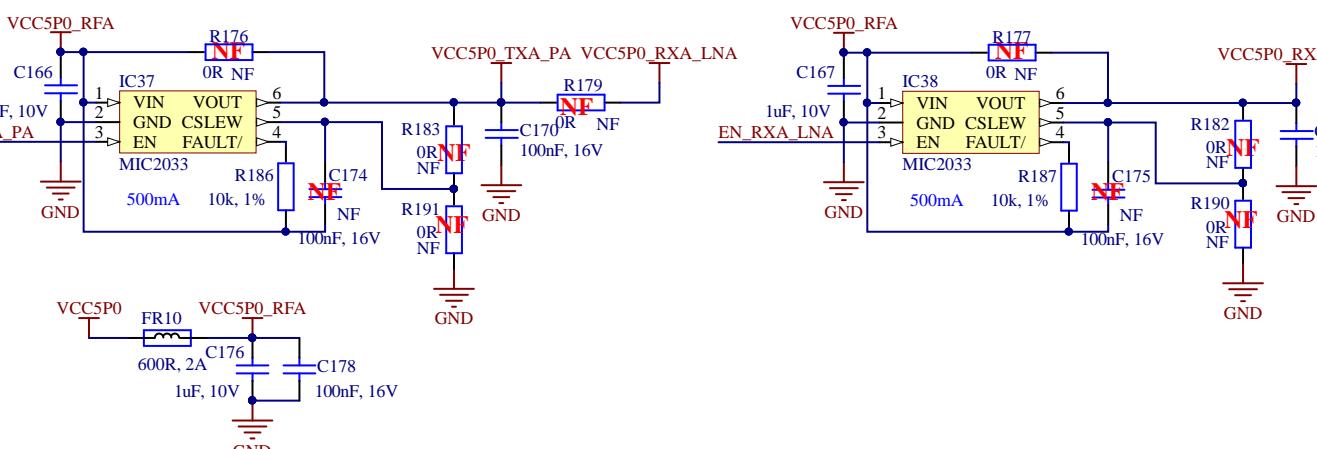
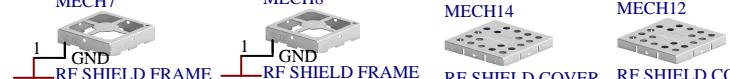
#### RF switches



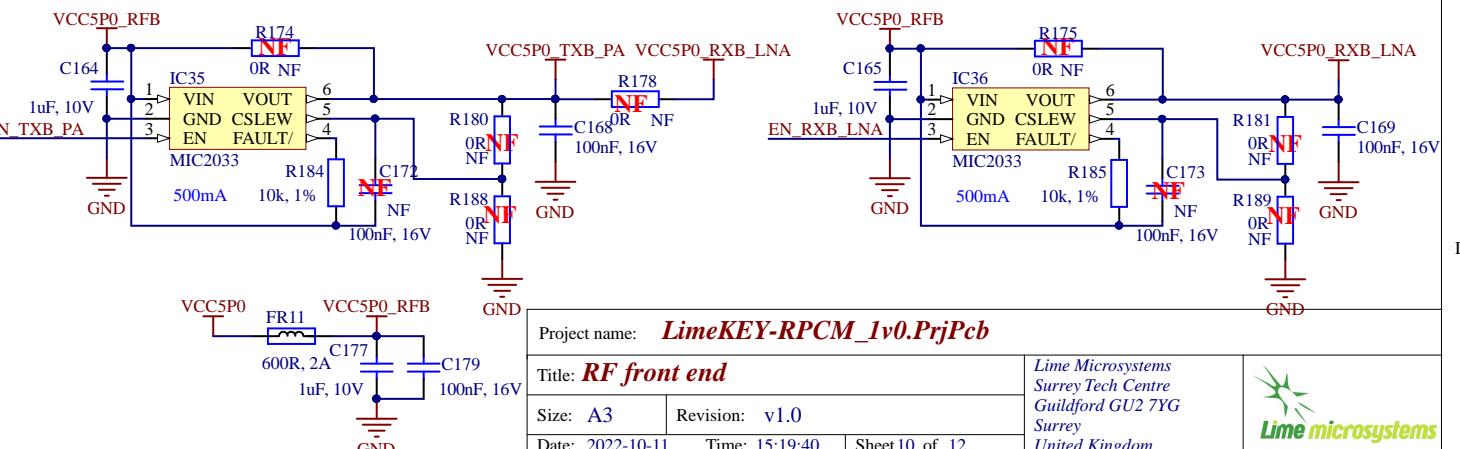
#### RX LNA



#### Power switches



#### Power switches



Project name: LimeKEY-RPCM\_1v0.PrbPcb

Title: RF front end

Size: A3 Revision: v1.0

Date: 2022-10-11 Time: 15:19:40 Sheet 10 of 12

File: 10\_RFFE.SchDoc

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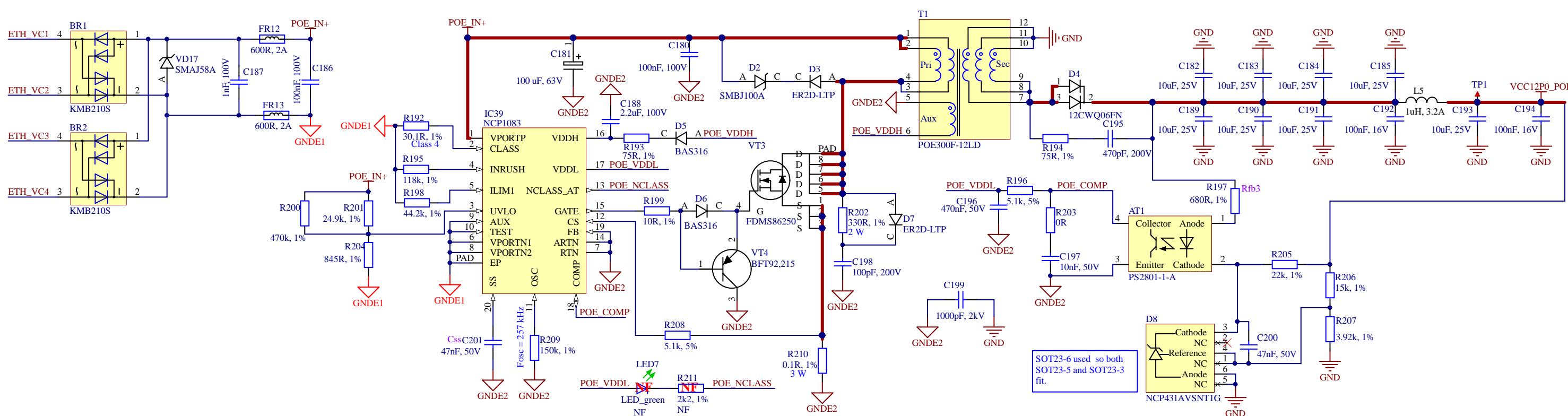


NF elements on sheet: LED7, R211, R223, R225, LED8, R226, VT5, R231, JMP7

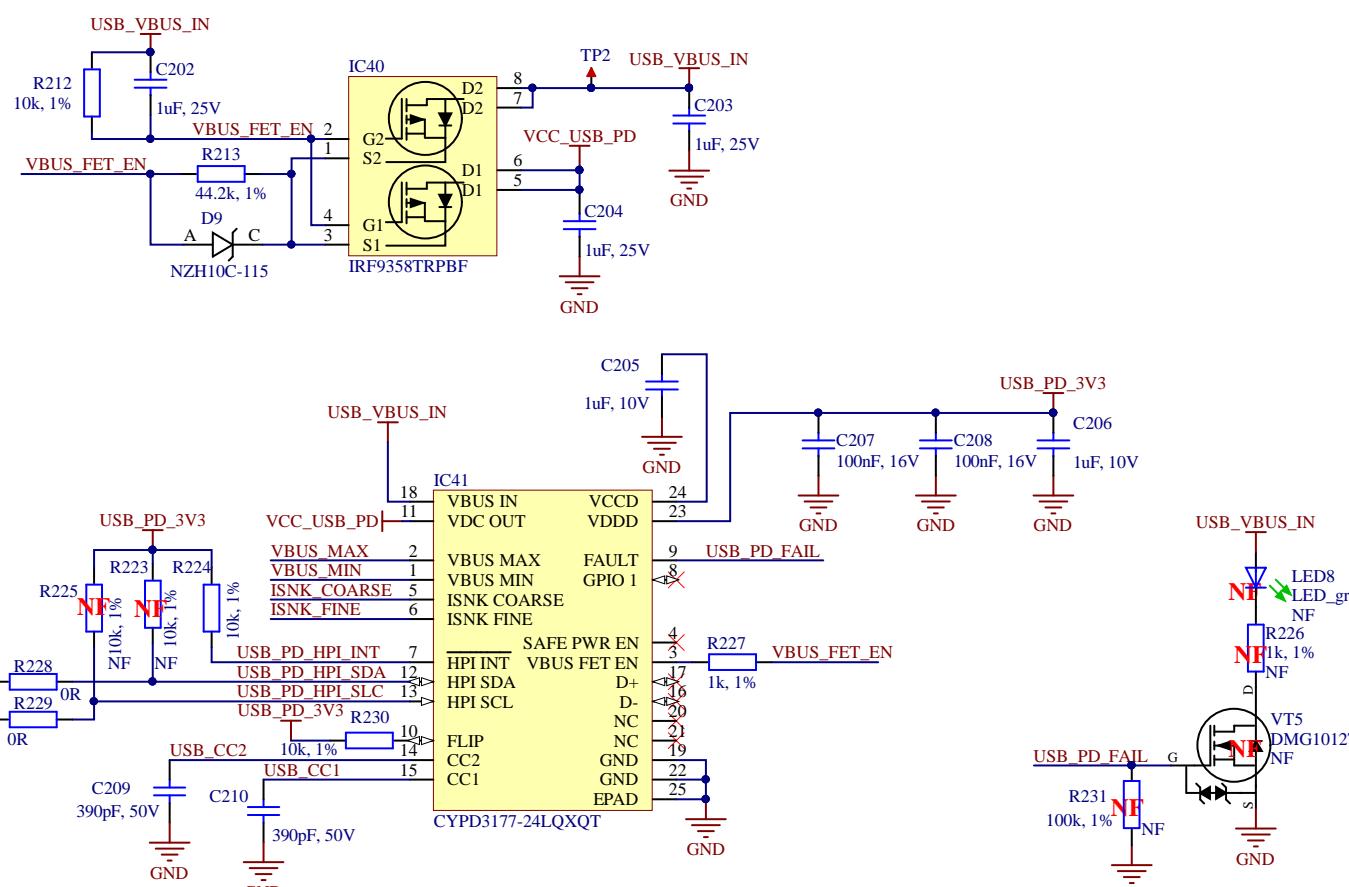
Number of NF elements on sheet: 9

## Power over Ethernet

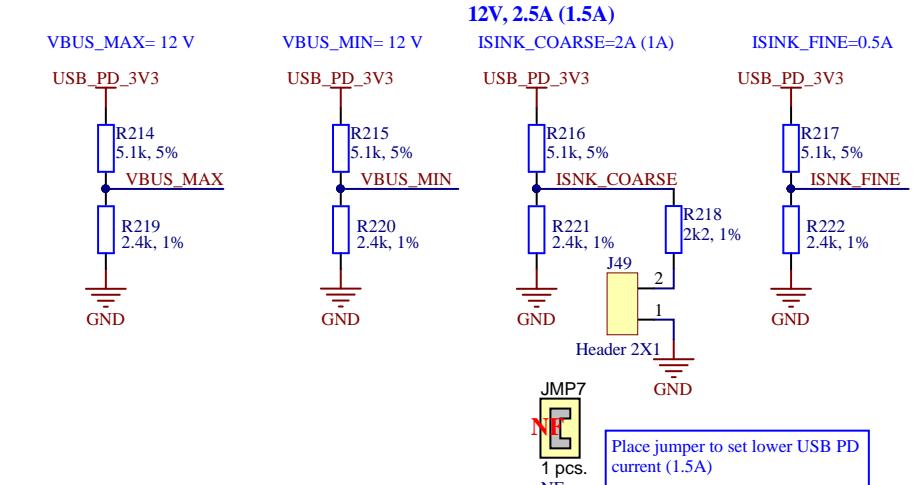
IEEE 802.3af (PoE) and 802.3at (PoE+) compliant Class 4 (25W max)



## USB Power delivery



Four resistor dividers that select VBUS Voltage and Current



Project name: LimeKEY-RPCM\_1v0.PrbPcb

Title: PoE and USB PD

Size: A3

Revision: v1.0

Date: 2022-10-11 Time: 15:19:44 Sheet 11 of 12

File: 11\_PoE\_USB\_PD.SchDoc

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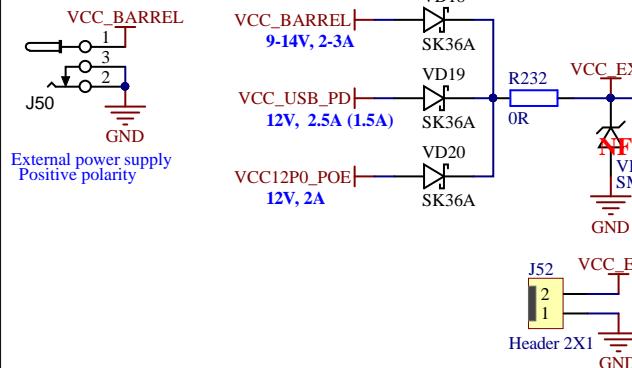
NF elements on sheet: VD21, FR14, R235, C215, R240, C226, C227, FR17, C137, FR15, C230, C228, IC44, C229, R242, J54

Number of NF elements on sheet: 16

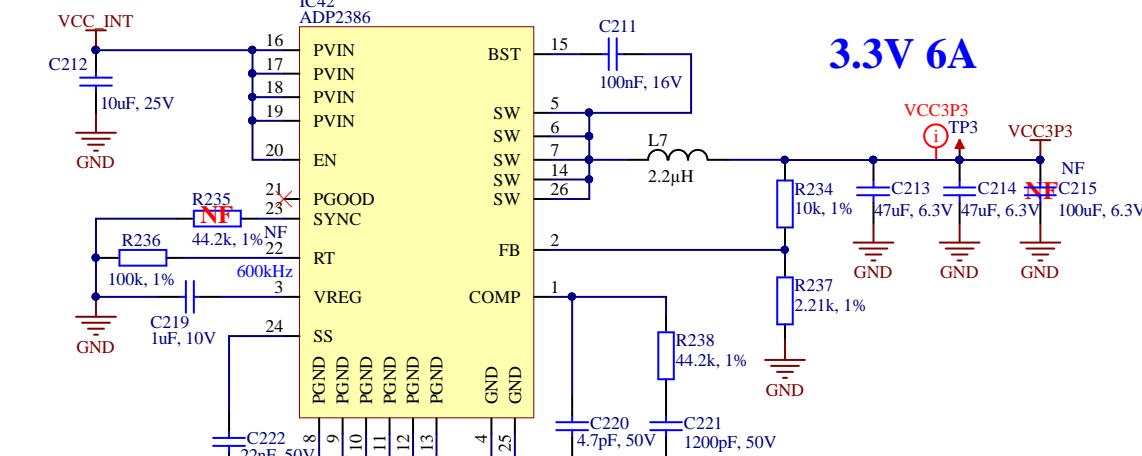
Total number of NF elements on all sheets: 145

## Board power circuits

### Power input

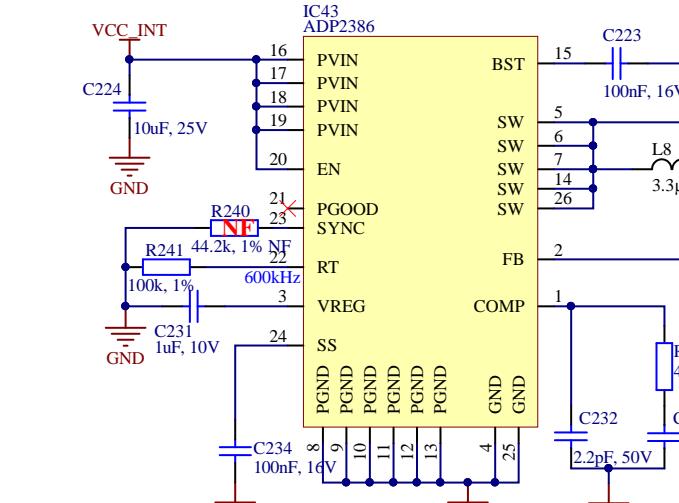
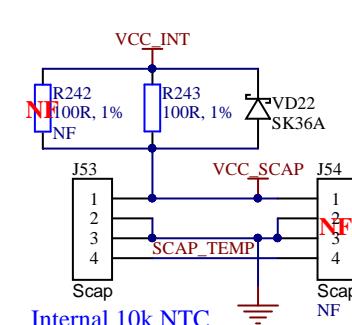


### Switching regulators



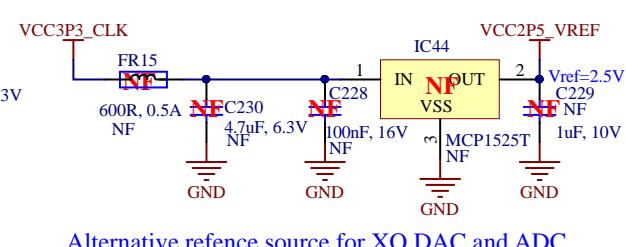
**3.3V 6A**

### Super capacitor



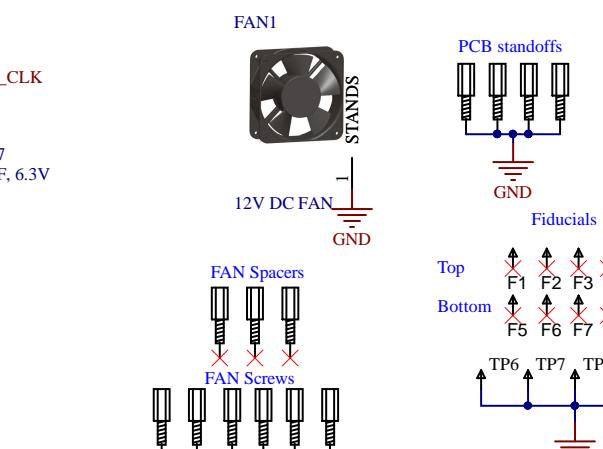
**5.0V 6A**

### Voltage reference (2.5V)

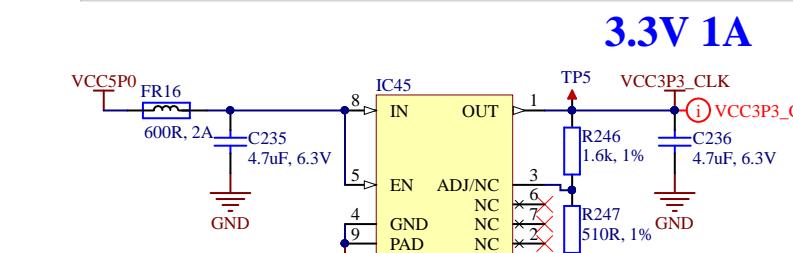


Alternative refence source for XO DAC and ADC

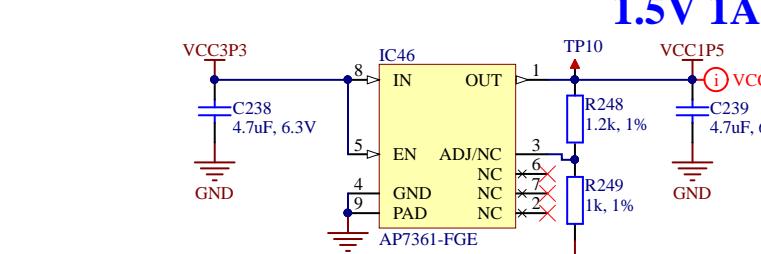
### Misc



### Linear regulators



**3.3V 1A**



**1.5V 1A**

Project name: LimeKEY-RPCM\_1v0.PrbPcb

Title: Power

Size: A3

Revision: v1.0

Date: 2022-10-11 Time: 15:19:47

Sheet 12 of 12

File: 12\_Power.SchDoc

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