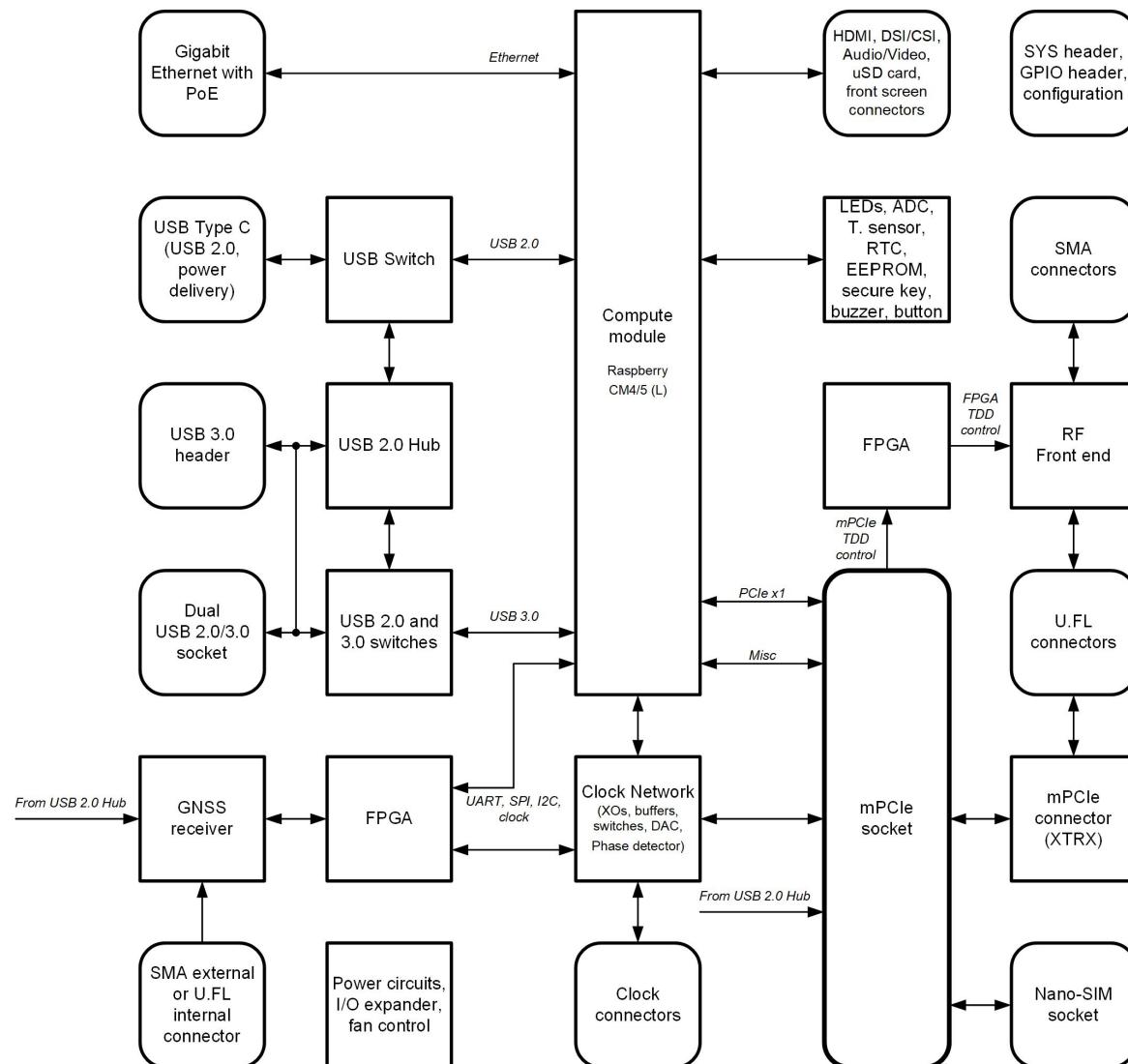


Block diagram



Project name: **LimePSB-RPCM_1v4.PrbPcb**

Title: **Block diagram**

Version: 1.4

Variant: Default

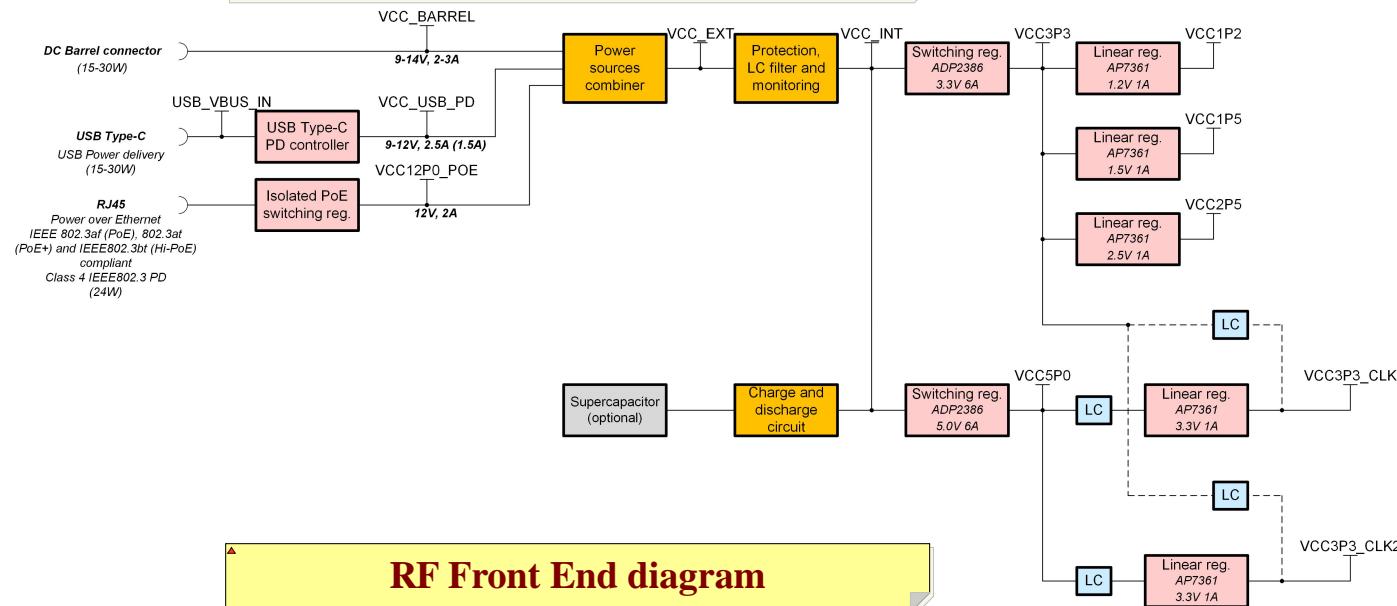
Date: 2025-03-25 Time: 15:13:24 Sheet 1 of 15

File: 01_Block_diag.SchDoc

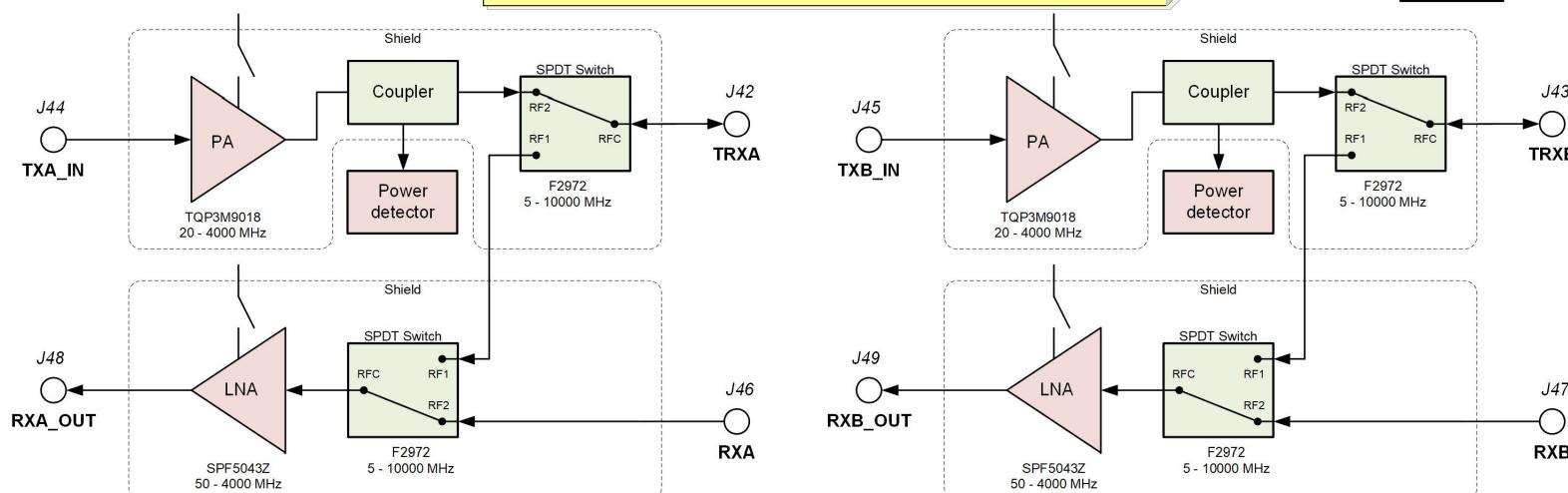
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Guildford GU2 7YG
Surrey
United Kingdom



Power diagram



RF Front End diagram



* All RF switches are controlled by the same signal RF_SW_TDD

Project name: LimePSB-RPCM_1v4.PnjPcb

Title: Power + RF Front End diagram

Version: 1.4 Variant: Default

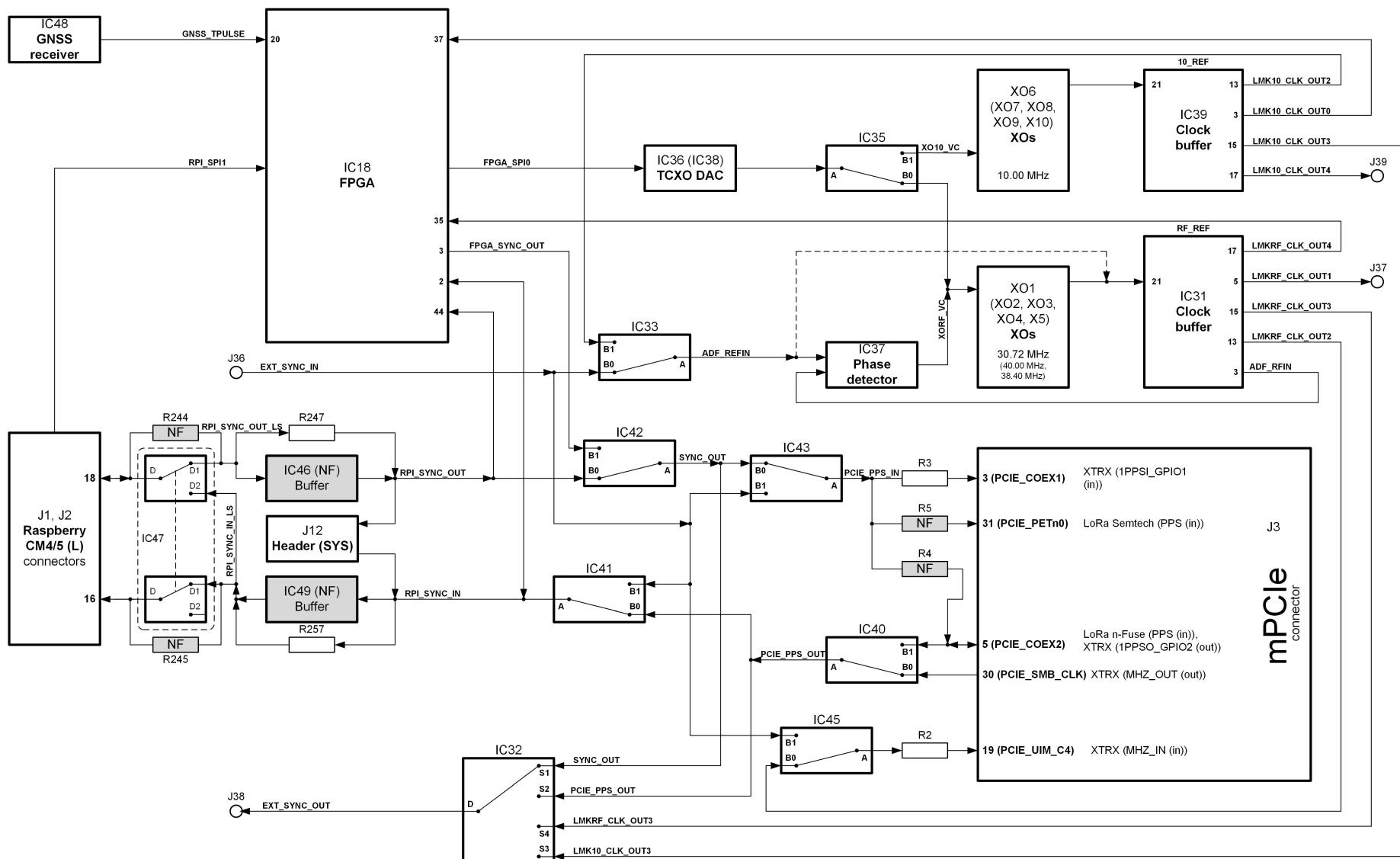
Date: 2025-03-25 Time: 15:13:24 Sheet 2 of 15

File: 02_Power_RFFE_diag.SchDoc Size: A4

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Surrey
United Kingdom



Clock diagram

Project name: **LimePSB-RPCM_1v4.PrbPcb**Title: **Clock diagram**

Version: 1.4 Variant: Default

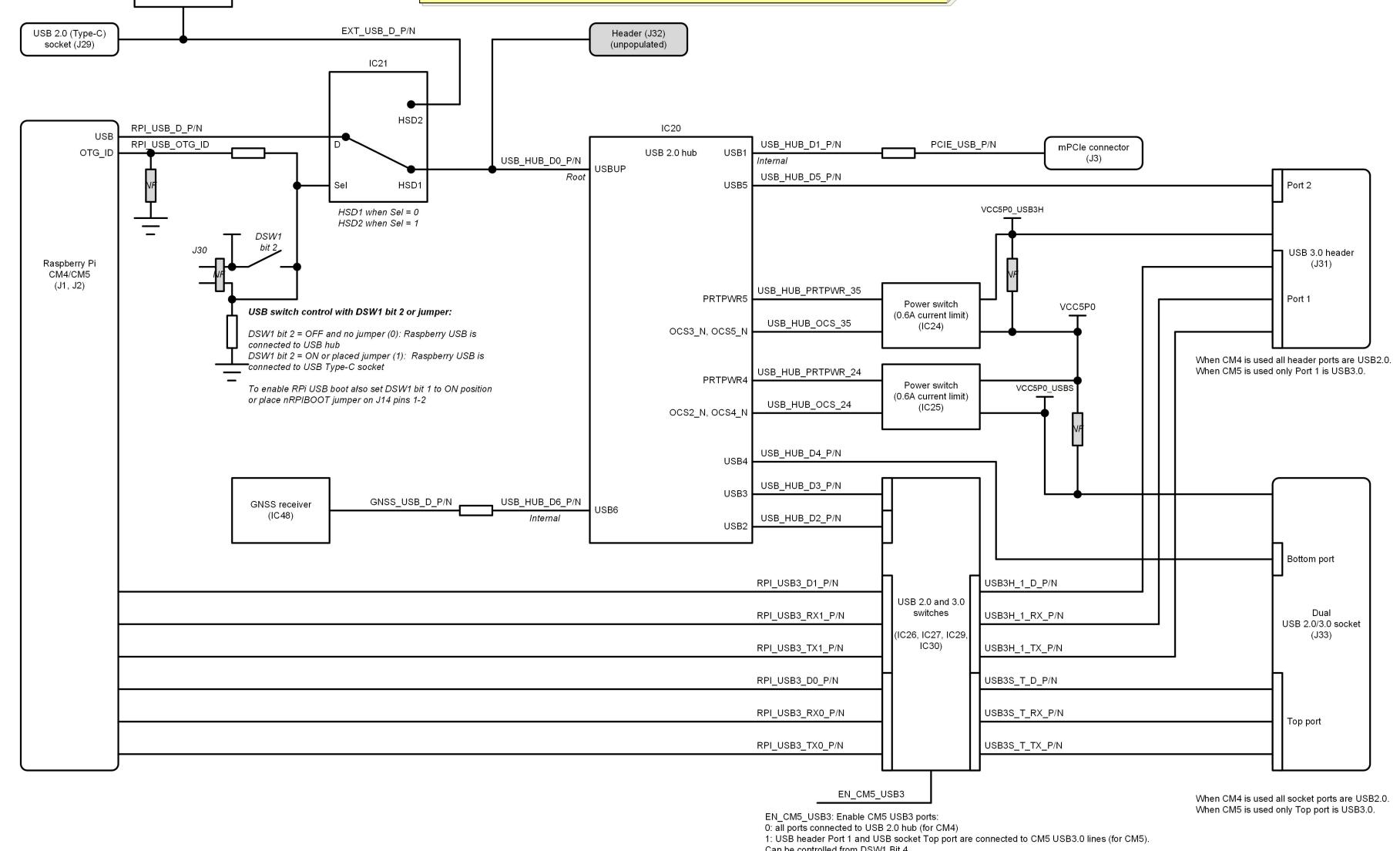
Date: 2025-03-25 Time: 15:13:24 Sheet 3 of 15

File: 03_Clock_diag.SchDoc

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United Kingdom



USB diagram



Project name: **LimePSB-RPCM_1v4.PpjPcb**

Title: **USB diagram**

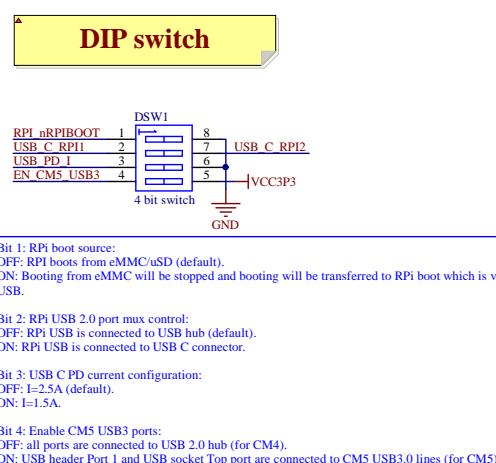
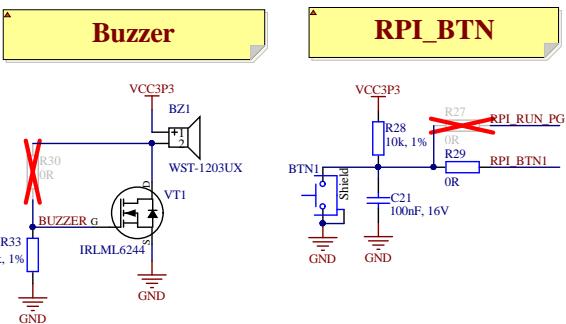
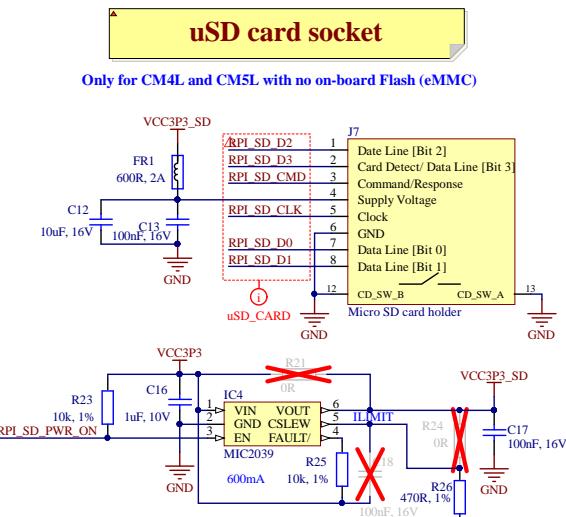
Version: 1.4 Variant: Default

Date: 2025-03-25 Time: 15:13:24 Sheet 4 of 15

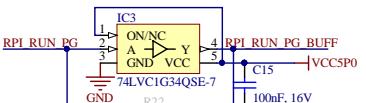
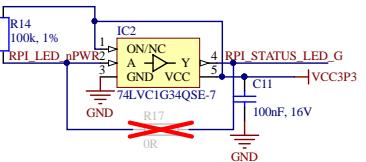
File: 04_USB_diag.SchDoc Size: A4

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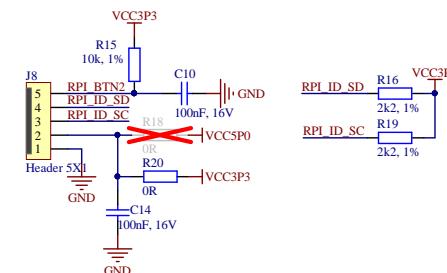




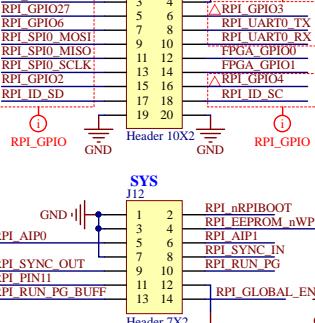
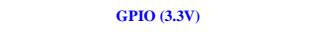
Misc 1



Front screen I2C + BTN



Gigabit Ethernet (RJ45) connector



nRPI_BOOT: During boot if this pin is low booting from eMMC will be stopped and booting will be transferred to rpboot which is via USB. Place jumper on pins 1-2.

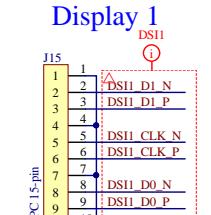
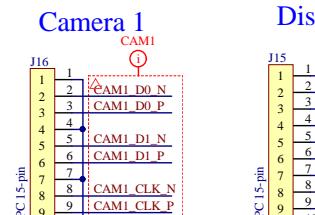
EEPROM_nWP: can be grounded to prevent writing to the on-board EEPROM which stores the bootcode. Place jumper on pins pins 3-4 or solder R32.

A button between pins 13-14 can be used to wake up computer

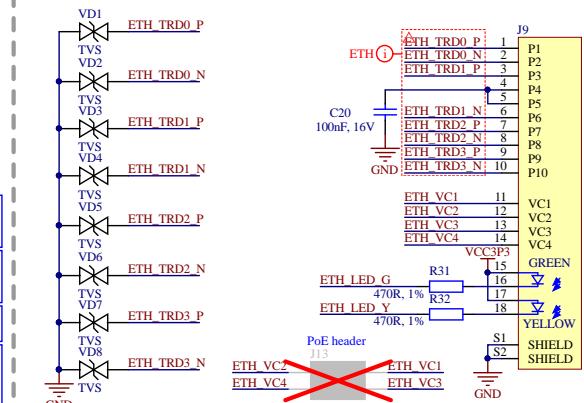
RUN_PG pin when high signals that the CM4 has started.
Driving this pin low resets the module.

A button between pins 10-12 replicates the power button on Raspberry Pi 5. A short press signals that the device should shutdown.

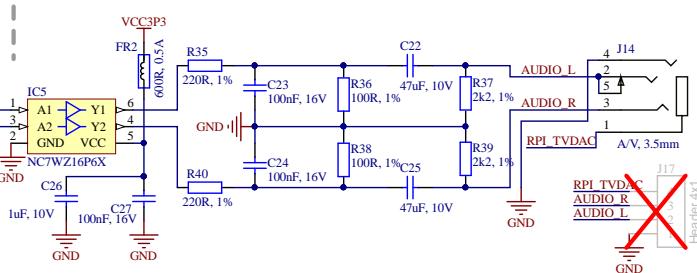
LVDS (Camera + Display)



For CM5 CAM1 and DSI1 signals become dual-purpose and can be used for either a CSI camera or a DSI display.



Analog audio + Composite video out

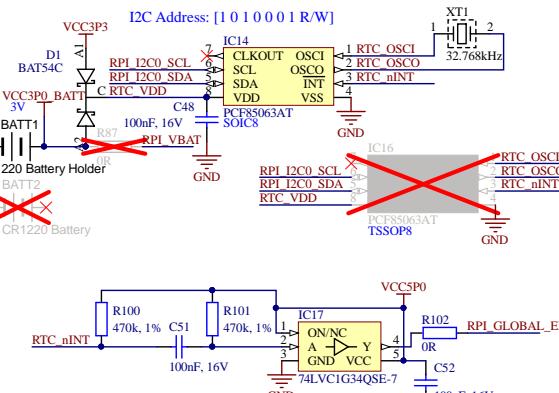
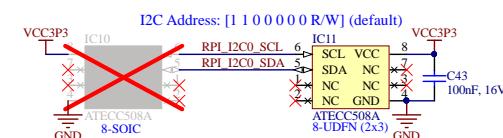
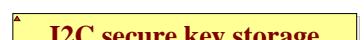
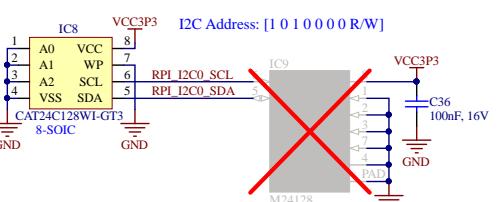
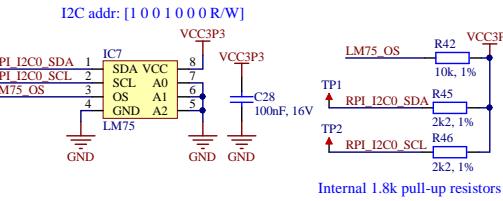


Project name: LimePSB-RPCM_1v4 PriPo

Title: *Misc 1*

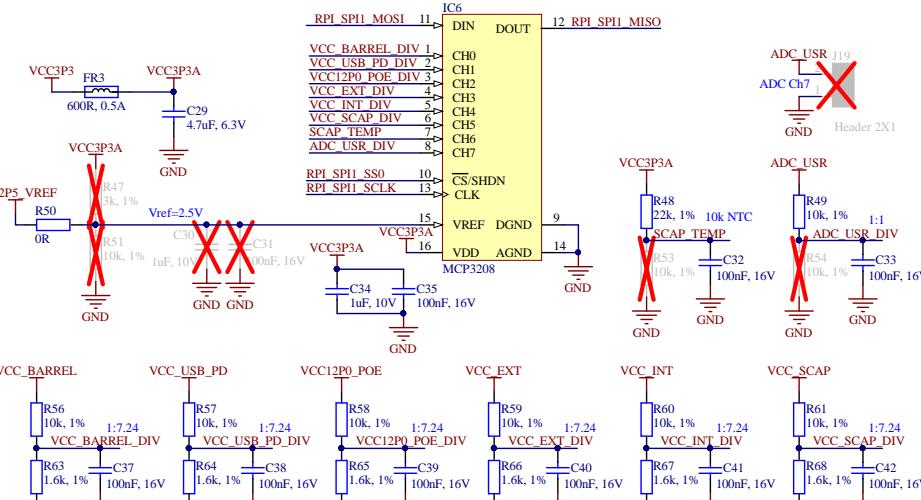
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United Kingdom



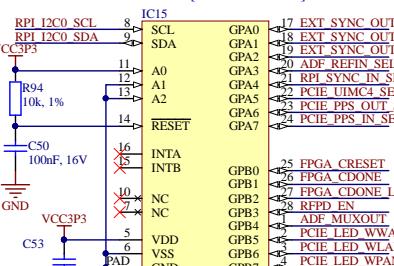
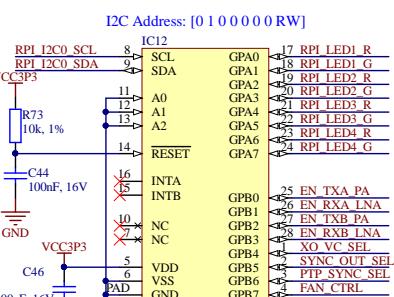


Misc 2

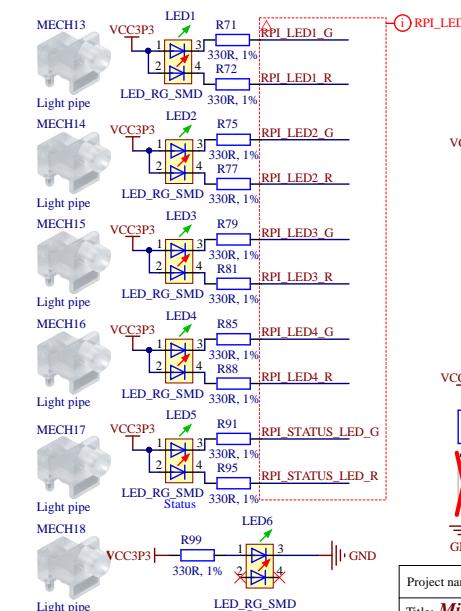
SPI ADC



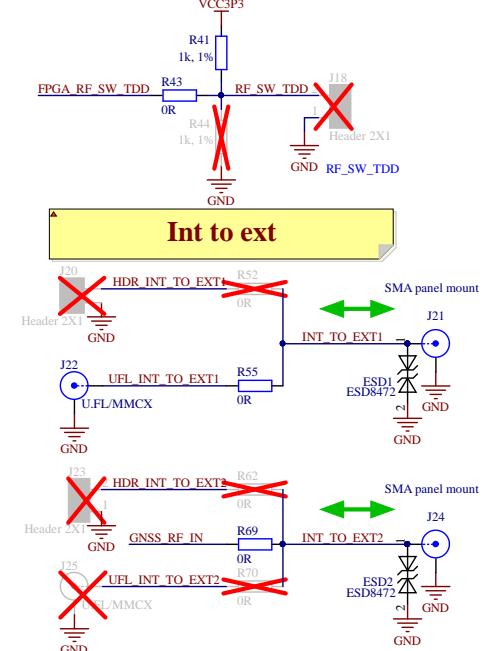
I2C I/O expanders



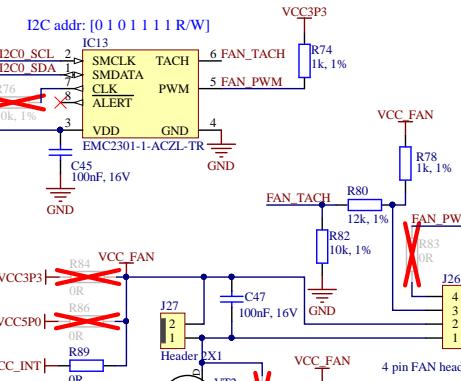
Raspberry Pi LEDs



RFFE TDD control



FAN control



Project name: LimePSB-RPCM_1v4_PriPci

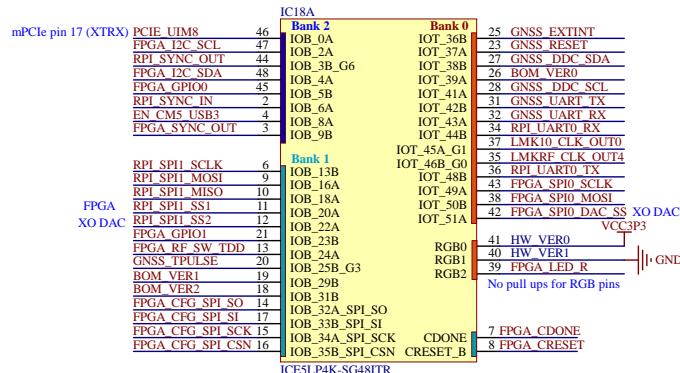
Title: *Misc 2*

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Guildford GU2 7YG
Surrey
United Kingdom*

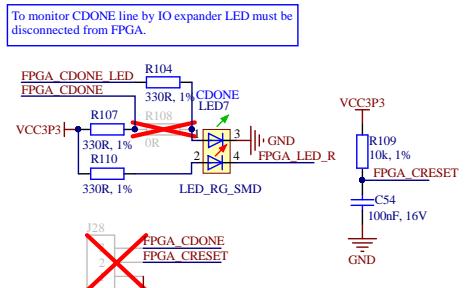


FPGA

FPGA

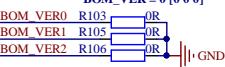


FPGA misc



HW_VER, BOM_VER

HW_VER = 1 [0 1]
BOM_VER = 0 [0 0 0]

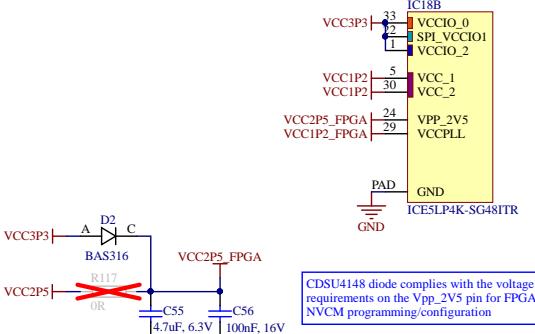


I2C interconnections

Raspberry I2C0 and FPGA I2C interconnections

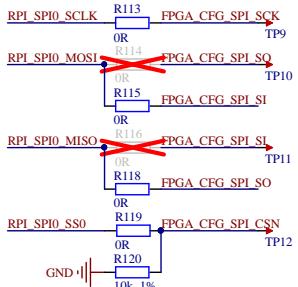


FPGA power

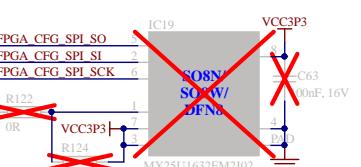
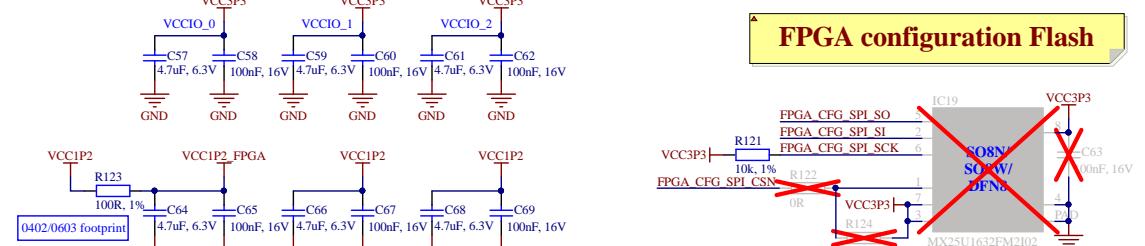


FPGA configuration modes

Slave SPI (default):	R113 fit
	R114 NF
	R115 NF
	R116 NF
	R117 fit
	R118 fit
	R119 fit
	R120 fit
Master SPI:	R122, R124, IC19, C63 fit
	R122, R124, IC19, C63 fit

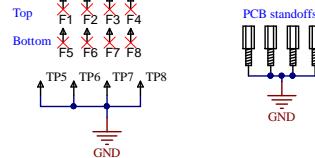


FPGA configuration Flash



Misc

Fiducials



Misc for FAN



12V DC FAN



2-pin header



Crimp



Crimp



Screw (M3, 20 mm)



Screw (M3, 20 mm)



Screw (M3, 20 mm)



Spacer (M3, 12mm)



Spacer (M3, 12mm)



Spacer (M3, 12mm)



Screw (M3, 6 mm)



Screw (M3, 6 mm)



Screw (M3, 6 mm)

Buy packs of 100 pcs. by dividing the required amount by 100 and rounding the resulting number to whole packs.

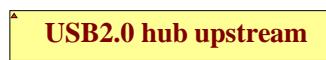
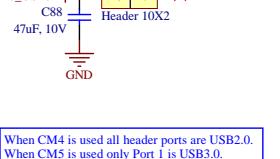
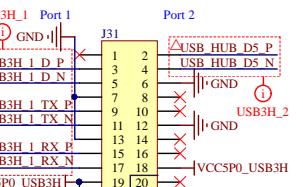
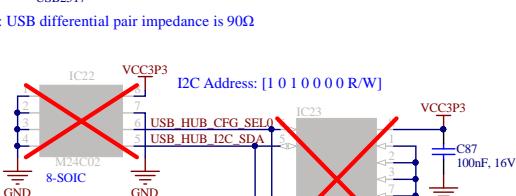
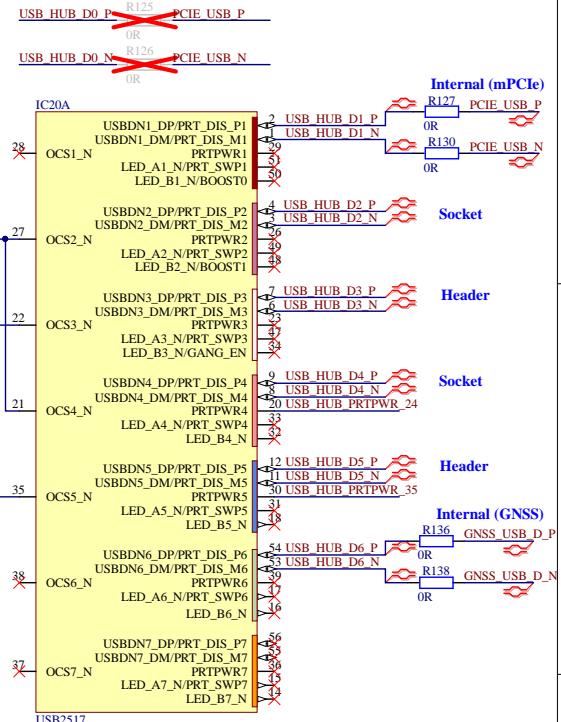
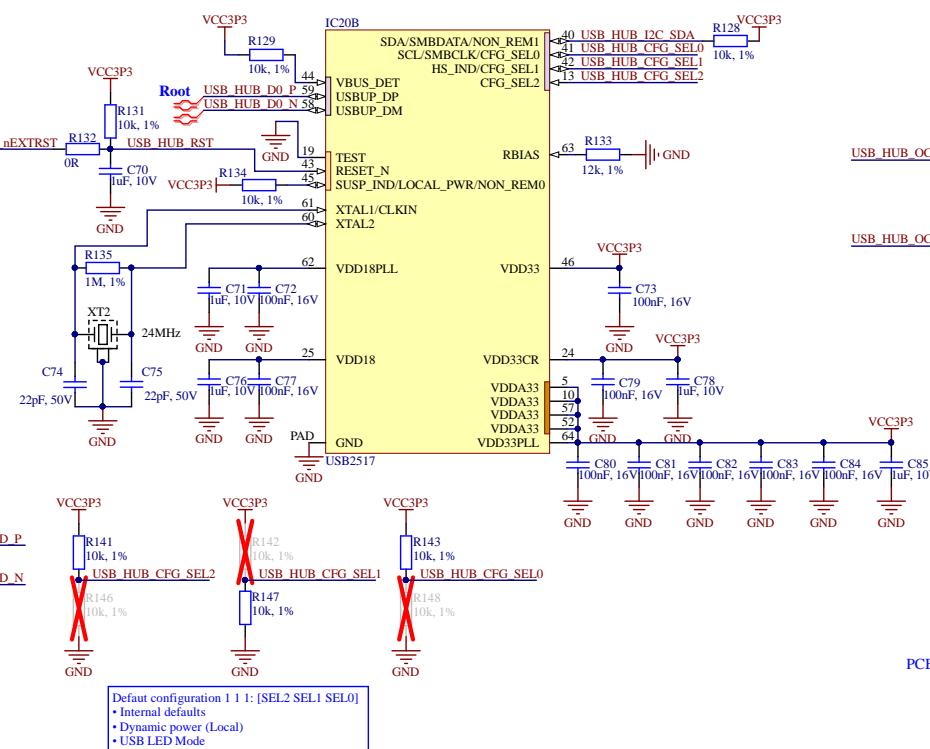
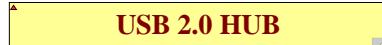
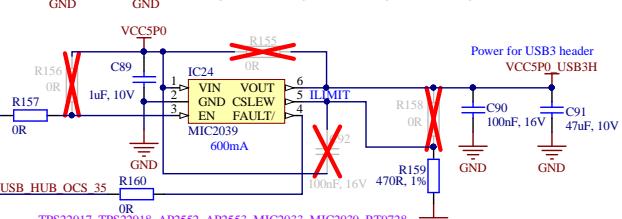
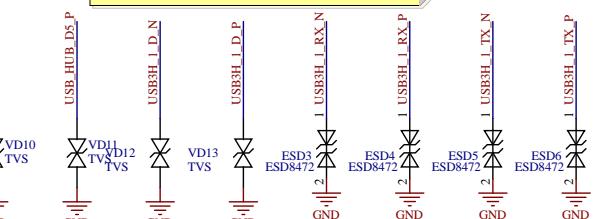
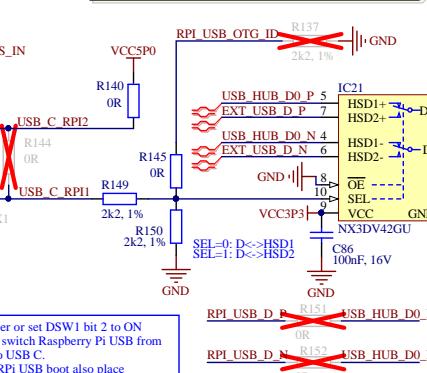
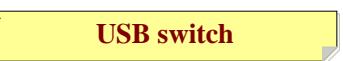
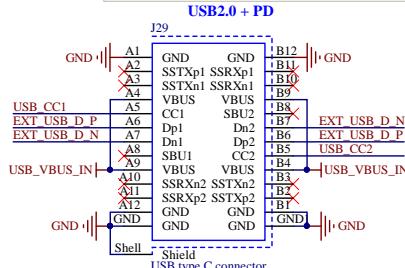
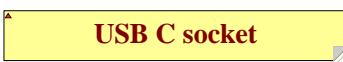
Project name: LimePSB-RPCM_Jv4.PrfPcb

Title: **FPGA**

Version: 1.4 Variant: Default

Date: 2025-03-25 Time: 15:13:26 Sheet 8 of 15

File: 08_FPGA.SchDoc Size: A3

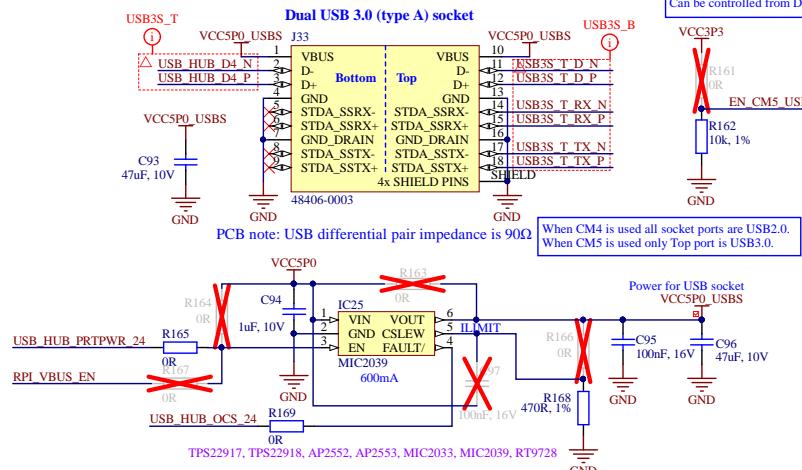


卷之三

Project name:	LimePSB-RPCM_Iv4.PnjPcb		
Title:	USB 2.0 hub		
Version:	1.4	Variant:	Default
Date:	2023-05-25	Time:	15:13:26
File:	LimePSB_RPCM_Iv4_Sch_Schematic	Sheet:	9 of 15
		Sig	3.2

USB and HDMI sockets

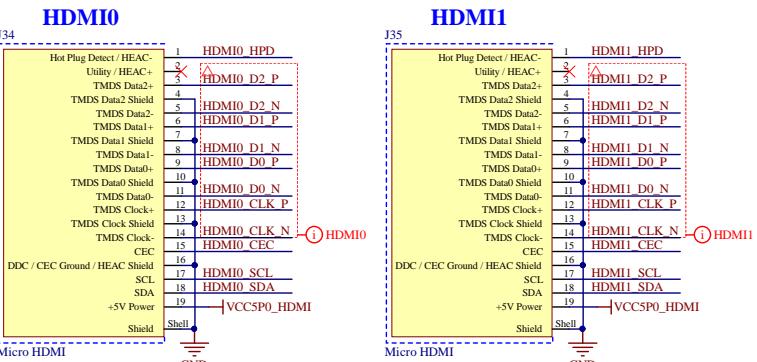
Dual USB 3.0 (type A) socket



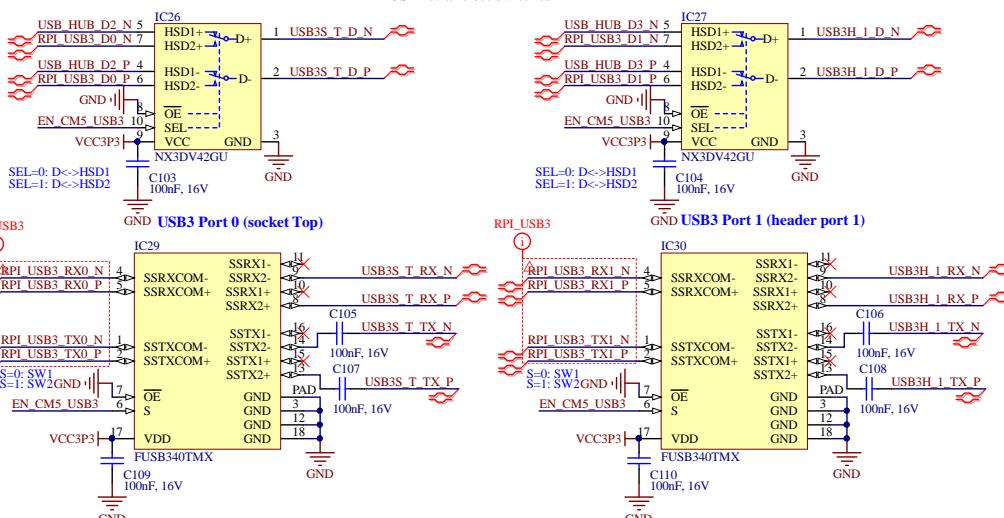
EN_CM5_USB3: Enable CM5 USB3 ports:
0: all ports connected to USB 2.0 hub (for CM4)
1: USB header Port 1 and USB socket Top port are connected to CM5 USB3.0 lines (for CM5).
Can be controlled from DSW1 Bit 4.

HDMI sockets

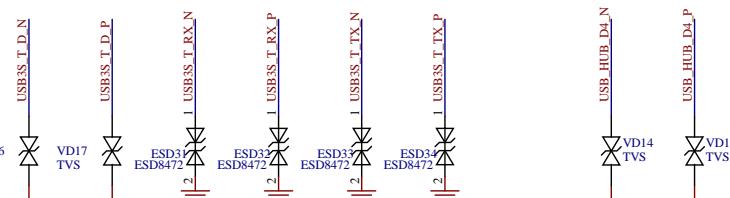
Micro (Type D) HDMI sockets



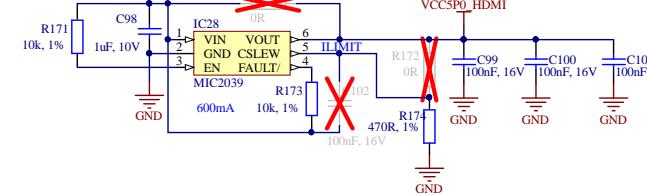
USB 2.0 and 3.0 switches



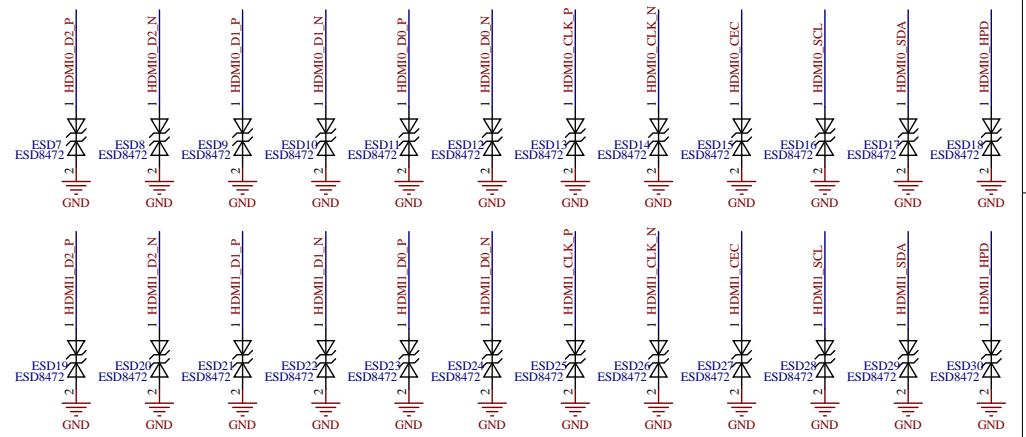
ESD protection



Power for HDMI sockets



ESD protection for CM5



Project name: LimePSB-RPCM_Jv4.PrjPcb

Title: USB and HDMI sockets

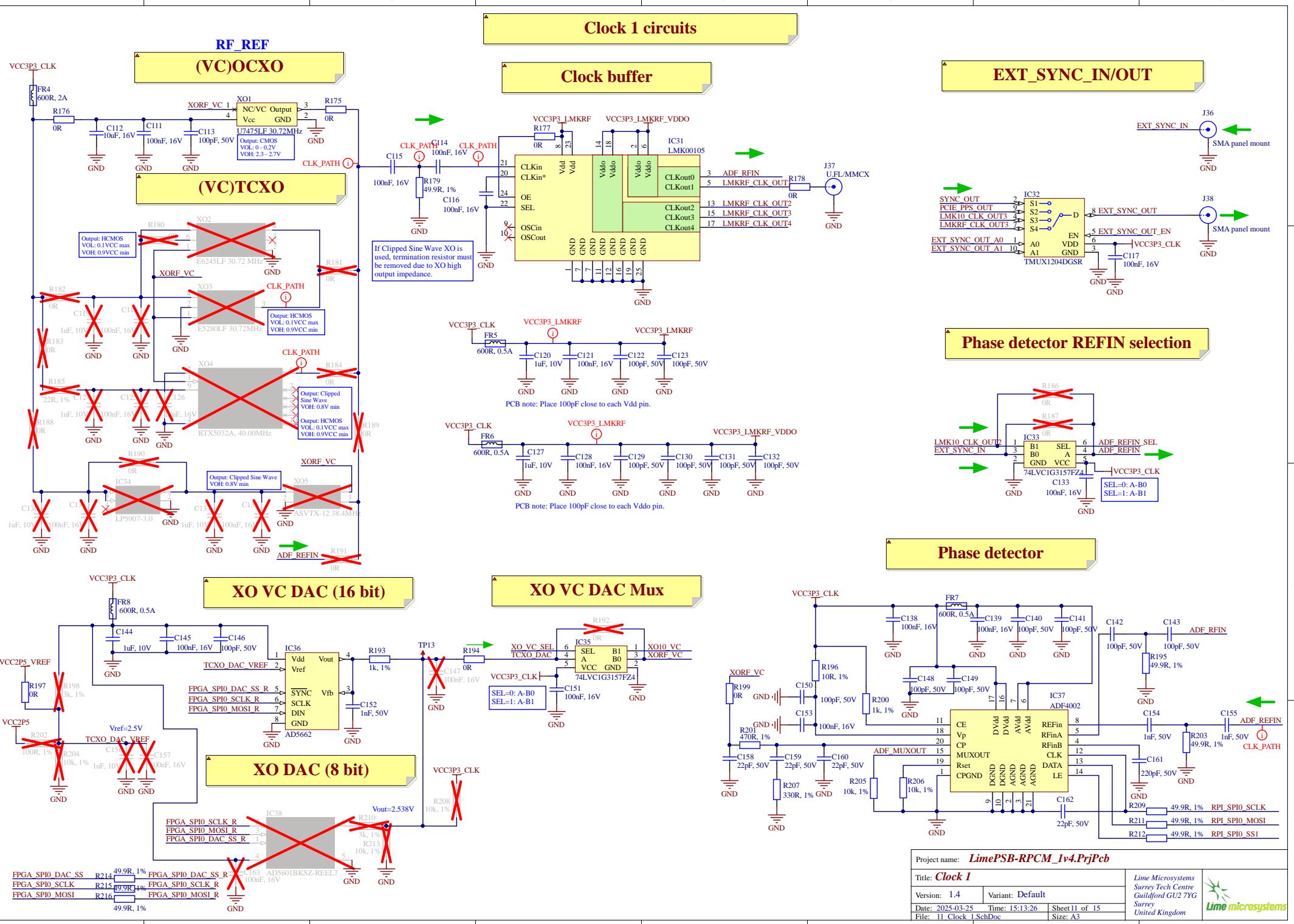
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Surve Tech Centre
Guildford GU2 7IG
Surve
United Kingdom

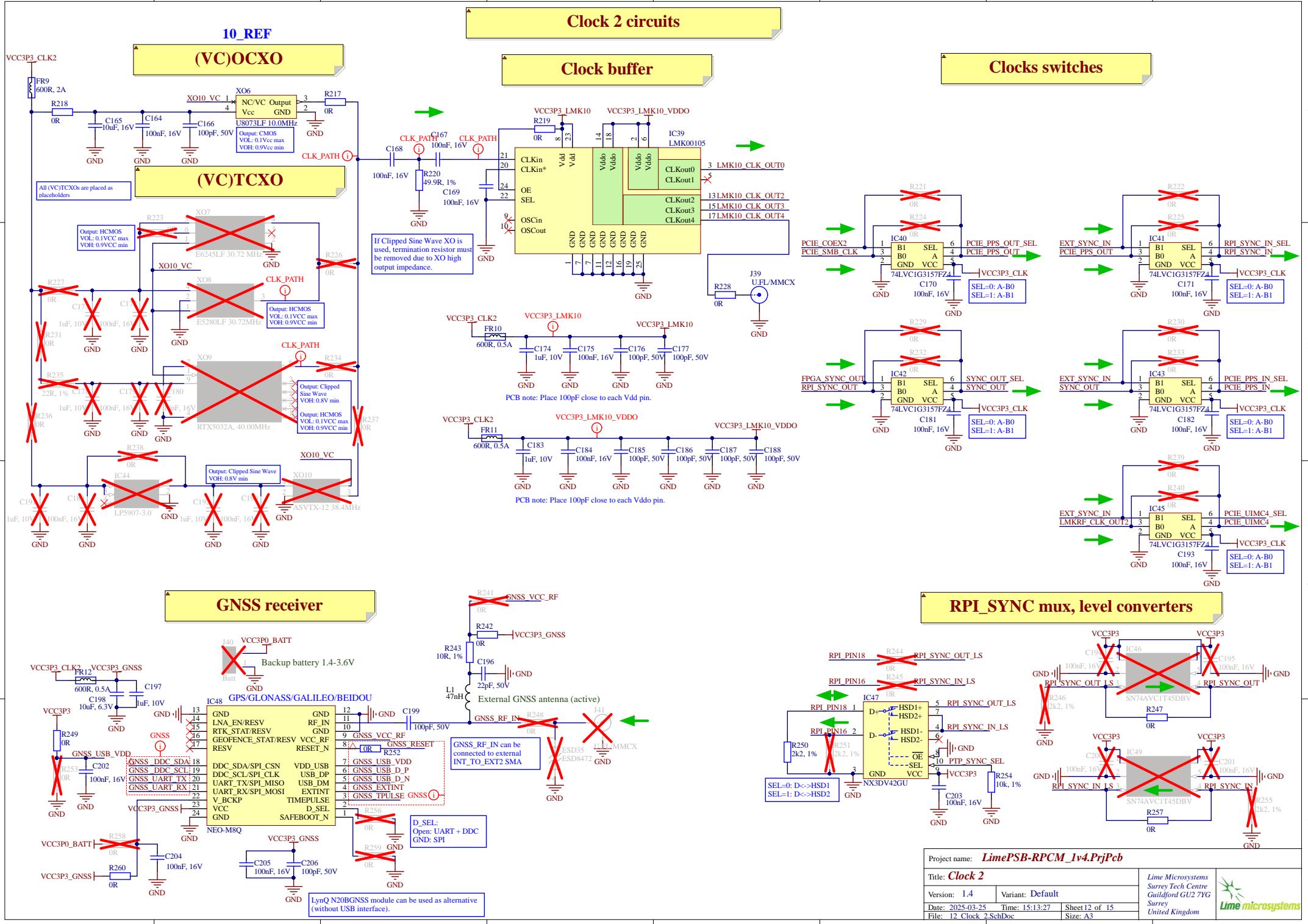


Version: 1.4 Variant: Default

Date: 2025-03-25 Time: 15:13:26 Sheet 10 of 15

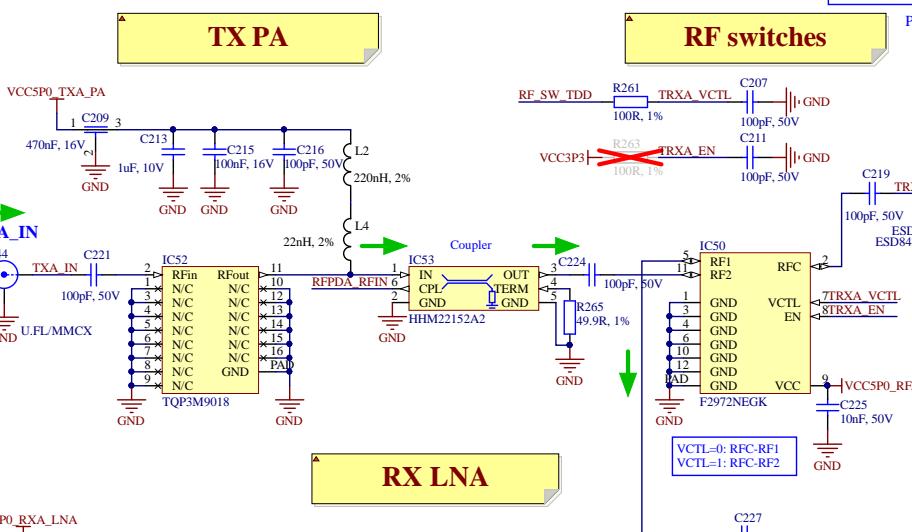
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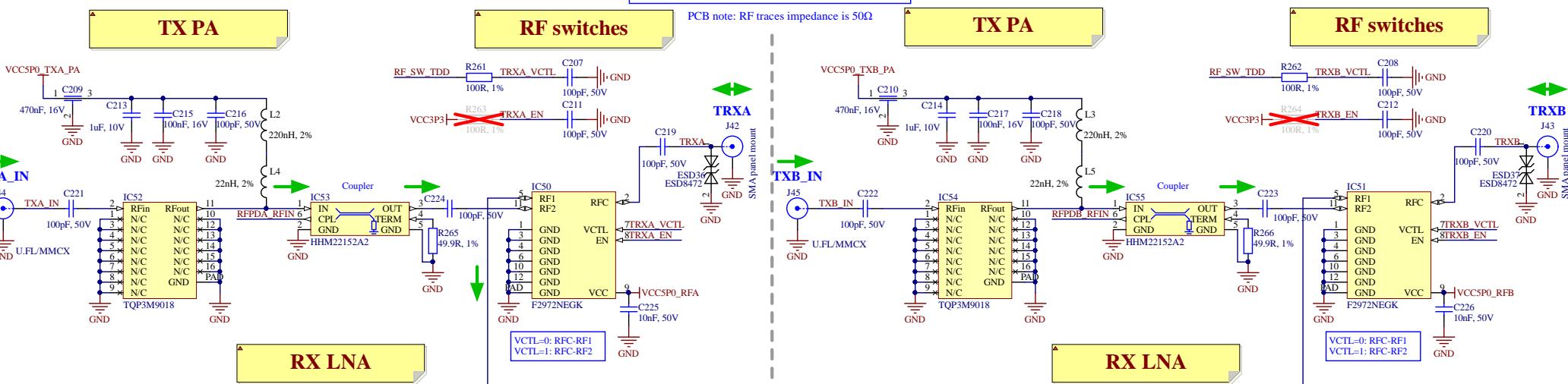


RF front end

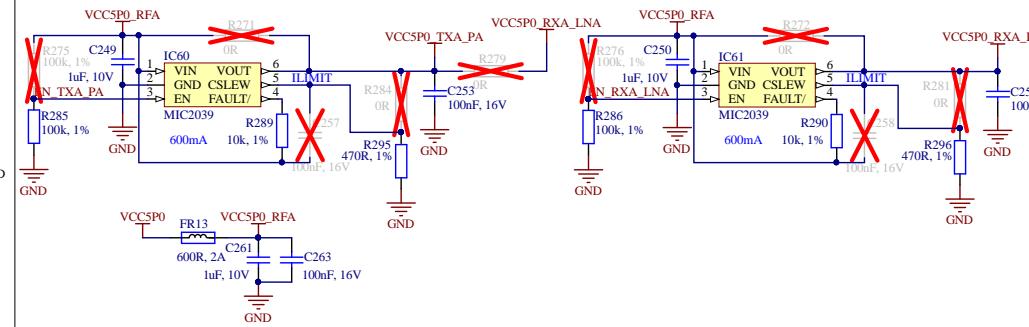
Channel A



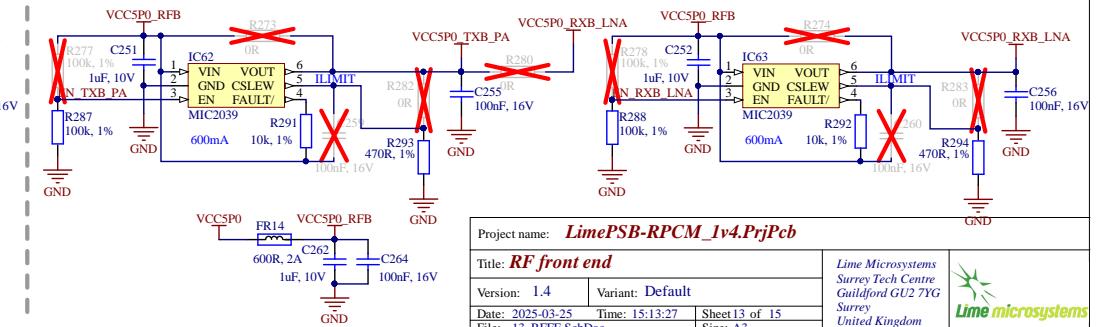
Channel B



Power switches



Power switches



Project name: LimePSB-RPCM_Jv4.PjrPcb

Title: RF front end

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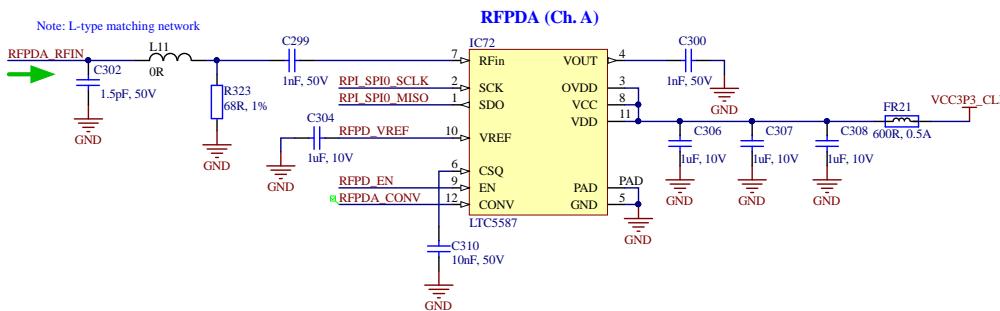
Variant: Default

Version: 1.4
Date: 2025-03-25
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Time: 15:13:27
Sheet 13 of 15
Size: A3

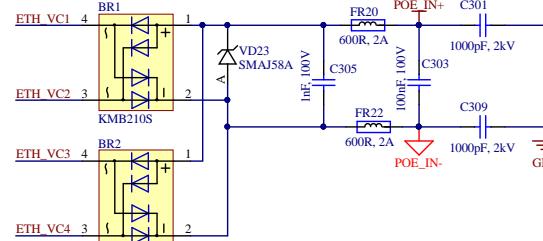


RF power detectors, PoE and USB PD

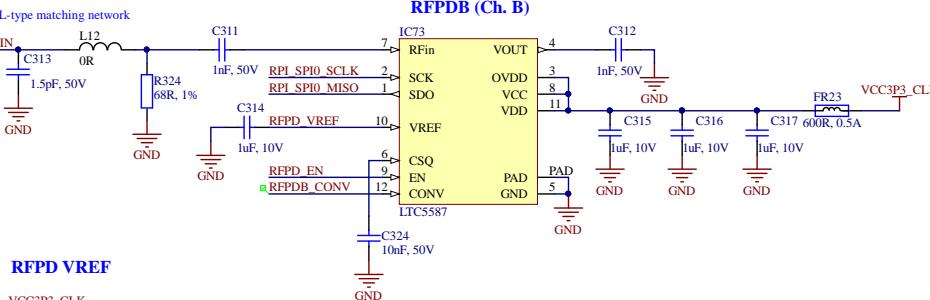
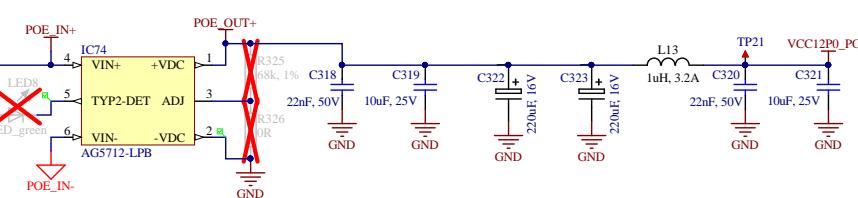
RF power detectors



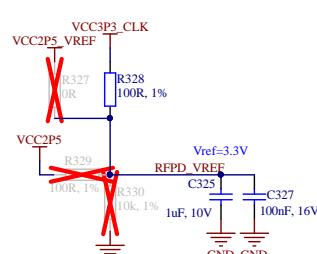
Power over Ethernet



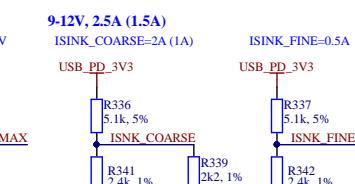
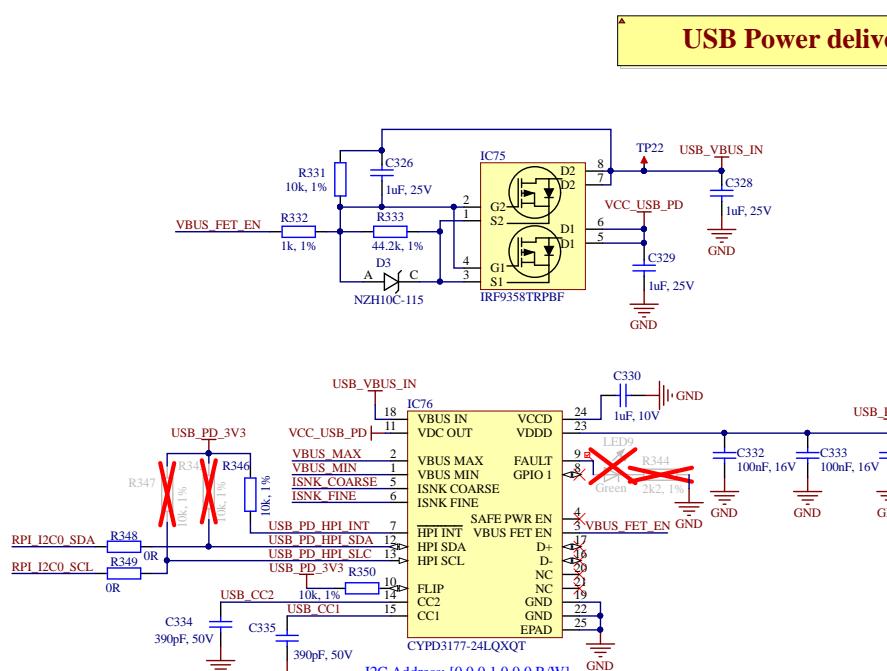
24W continuous output power, 30W peak output power (IEEE802.3at)
Class 4 IEEE802.3 PD
IEEE 802.3af (PoE), 802.3at (PoE+) and IEEE802.3bt (Hi-PoE) compliant



RFPD_VREF



USB Power delivery



Project name: LimePSB-RPCM_Jv4.PnjPcb

Title: RF power detectors, PoE and USB PD

Version: 1.4 Variant: Default

Date: 2025-03-25 Time: 15:13:27 Sheet 14 of 15

File: 14_RFPD_PoE_USB_PD.SchDoc Size: A3

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Board power circuits

Power input

A
External power supply
Positive polarity