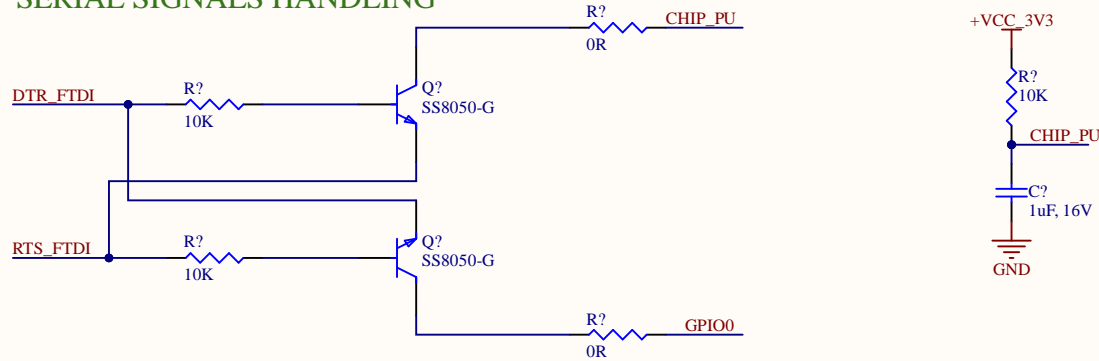
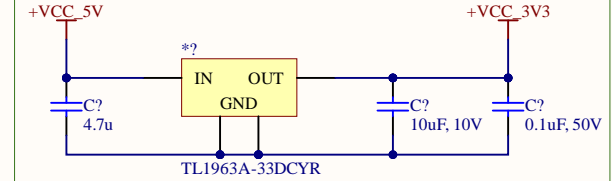


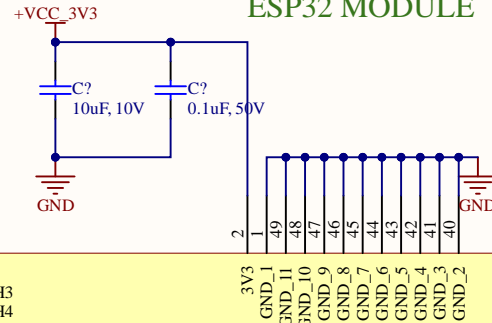
SERIAL SIGNALS HANDLING



5V to 3V3



ESP32 MODULE



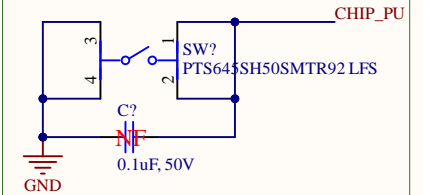
ESP32-S3

CHIP_PU	3	EN
GPIO4	4	GPIO4/RTC_GPIO4/TOUCH4/ADC1_CH3
GPIO5	5	GPIO5/RTC_GPIO5/TOUCH5/ADC1_CH4
GPIO6	6	GPIO6/RTC_GPIO6/TOUCH6/ADC1_CH5
GPIO7	7	GPIO7/RTC_GPIO7/TOUCH7/ADC1_CH6
GPIO15	8	GPIO15/RTC_GPIO15/U0RTS/ADC2_CH4/XTAL_32K_P
GPIO16	9	GPIO16/RTC_GPIO16/U0CTS/ADC2_CH5/XTAL_32K_N
GPIO17	10	GPIO17/RTC_GPIO17/U1TXD/ADC2_CH6
GPIO18	11	GPIO18/RTC_GPIO18/U1RXD/ADC2_CH7/CLK_OUT3
GPIO8	12	GPIO8/RTC_GPIO8/TOUCH8/ADC1_CH7/SUBSPICS1
ESP_USB_N	13	USB_D/RTC_GPIO19/GPIO19/U1RTS/ADC2_CH8/CLK_OUT2
ESP_USB_P	14	USB_D+/RTC_GPIO20/GPIO20/U1CTS/ADC2_CH9/CLK_OUT1
GPIO3	15	GPIO3/RTC_GPIO3/TOUCH3/ADC1_CH2
GPIO46	16	GPIO46
GPIO9	17	GPIO9/RTC_GPIO9/TOUCH9/ADC1_CH8/FSPIHD/SUBSPIHD
GPIO10	18	GPIO10/RTC_GPIO10/TOUCH10/ADC1_CH9/FSPICS0/FSPIO4/SUBSPICS0
GPIO11	19	GPIO11/RTC_GPIO11/TOUCH11/ADC2_CH0/FSPI0/FSPI05/SUBSPID
GPIO12	20	GPIO12/RTC_GPIO12/TOUCH12/ADC2_CH1/FSPI06/SUBSPICLK

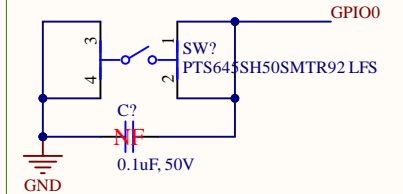
ESP?
ESP32-S3-WROOM-1U-N16R8

GPIO1/RTC_GPIO1/TOUCH1/ADC1_CH0	39	GPIO1
GPIO2/RTC_GPIO2/TOUCH2/ADC1_CH1	38	GPIO2
U0TXD/GPIO43/CLK_OUT1	37	U0TXD
U0RXD/GPIO44/CLK_OUT2	36	U0RXD
MTMS/GPIO42	35	GPIO42
MTDI/GPIO41/CLK_OUT1	34	GPIO41
MTDO/GPIO40/CLK_OUT2	33	GPIO40
MTCK/GPIO39/CLK_OUT3/SUBSPICS1	32	GPIO39
GPIO38/FSPIWP/SUBSPIWP	31	GPIO38
GPIO37/SPIDQS/FSPIQ/SUBSPIQ	30	GPIO37
GPIO36/SPIIO7/FSPI06/SUBSPICLK	29	GPIO36
GPIO35/SPIIO6/FSPI05/SUBSPID	28	GPIO35
GPIO0/RTC_GPIO0	27	GPIO0
GPIO45	26	GPIO45
GPIO48/SPICLK_N_DIFF/SUBSPICLK_N_DIFF	25	GPIO48
GPIO47/SPICLK_P_DIFF/SUBSPICLK_P_DIFF	24	GPIO47
GPIO21/RTC_GPIO21	23	GPIO21
GPIO14/RTC_GPIO14/TOUCH14/ADC2_CH3/FSPIWP/FSPI07/SUBSPIQ	22	GPIO14
GPIO13/RTC_GPIO13/TOUCH13/ADC2_CH2/FSPIQ/FSPI07/SUBSPIQ	21	GPIO13

RESET BUTTON



BOOT BUTTON



ESP32-S3 microcontroler unit

ESP32-S3: Dual-core Xtensa® LX7 MCU with 2.4 GHz Wi-Fi & Bluetooth 5 LE.

Sheet title: Microcontroller_Unit.SchDoc

Project title: RadiationDetector.PjPcb

Author: Pablo Morán Peña

Size: A4

Date: 22/07/2025

Revision: 1

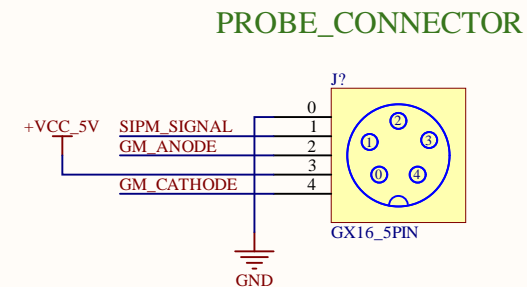
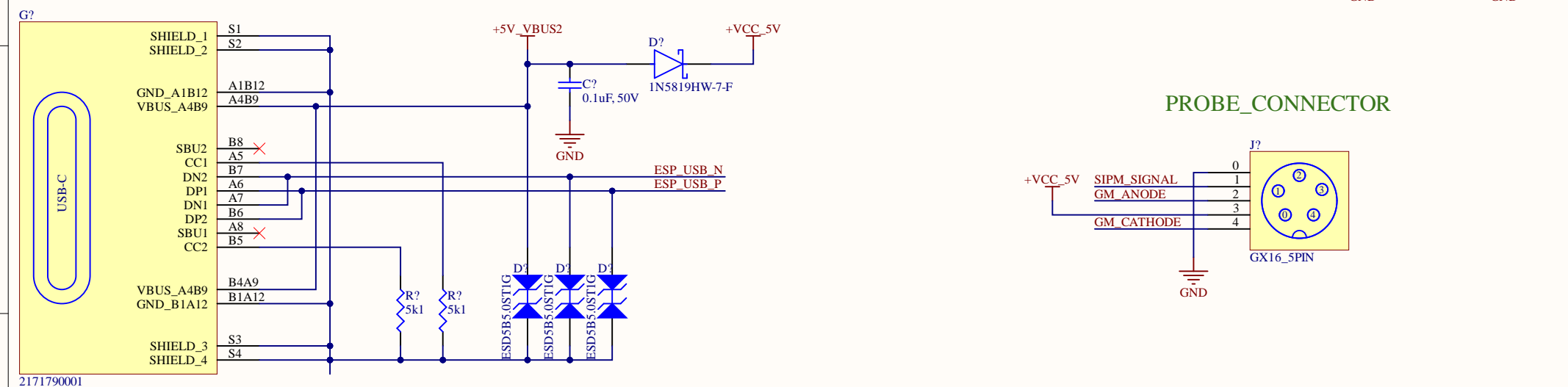
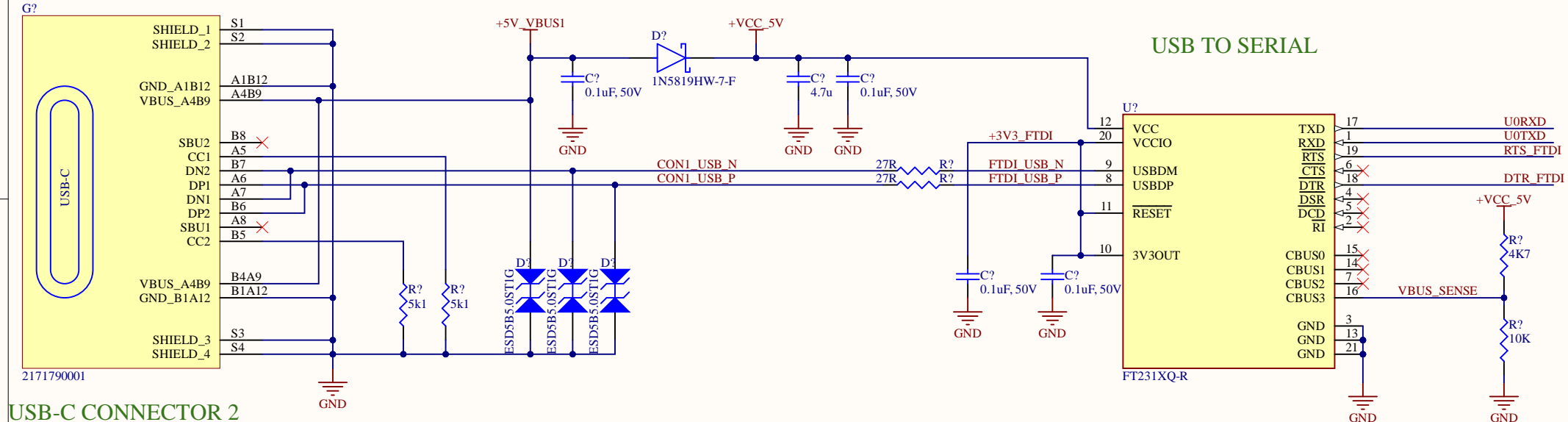
Sheet: 1 of 4

Supervisor: Sr. Andrés Roldán

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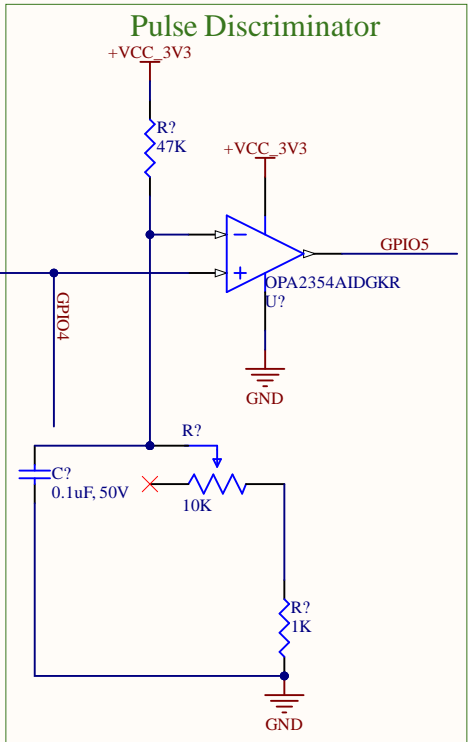
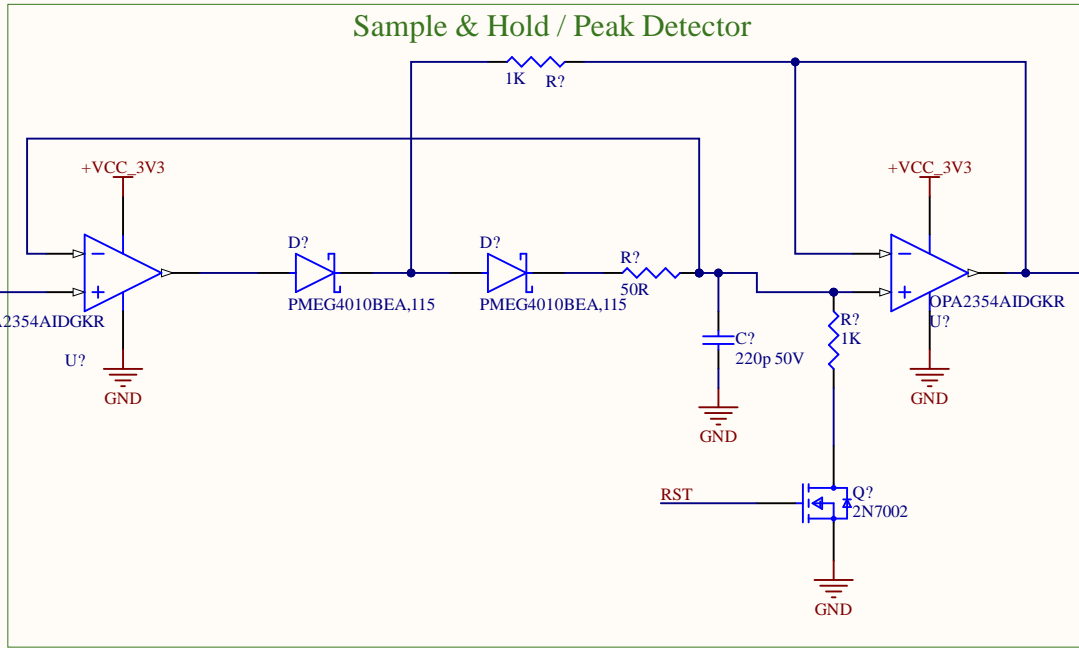
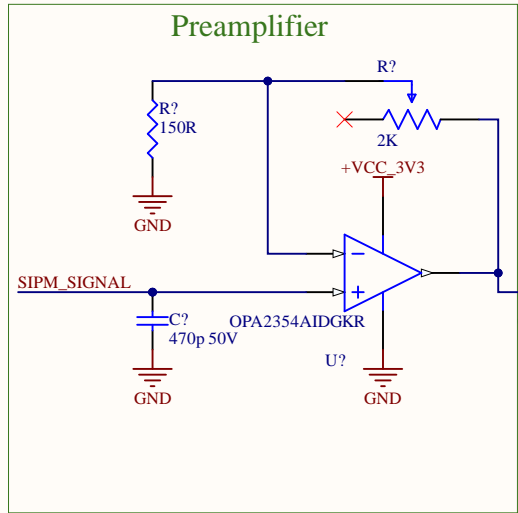




It includes two USB-C connectors, one for USB-to-UART and the other for native USB, and a 5-pin GX16 connector for interfacing with probes.

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Scintillator signal conditioning circuit

It amplifies the SiPM signal, holds its value, and generates an interrupt so the ADC can sample it.

Sheet title: Scintillator_Circuit.SchDoc

Project title: RadiationDetector.PrjPcb

Author: Pablo Morán Peña

Size: A4

Date: 22/07/2025

Revision: 1

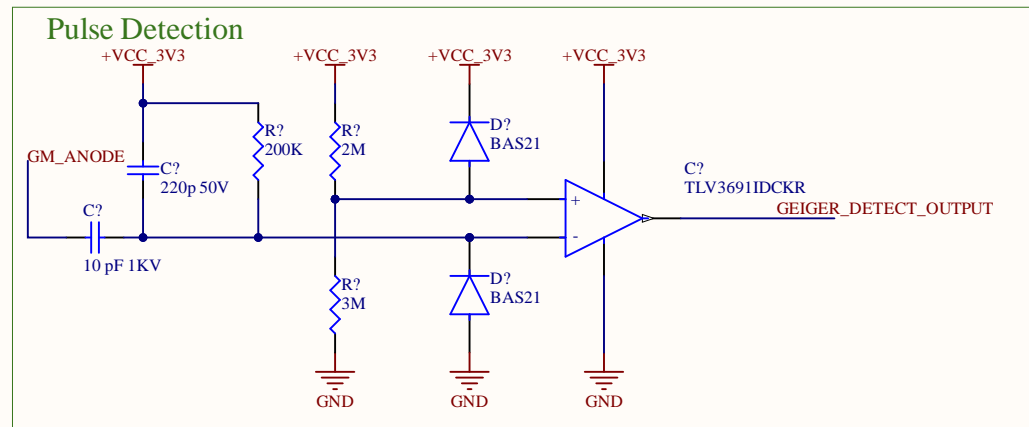
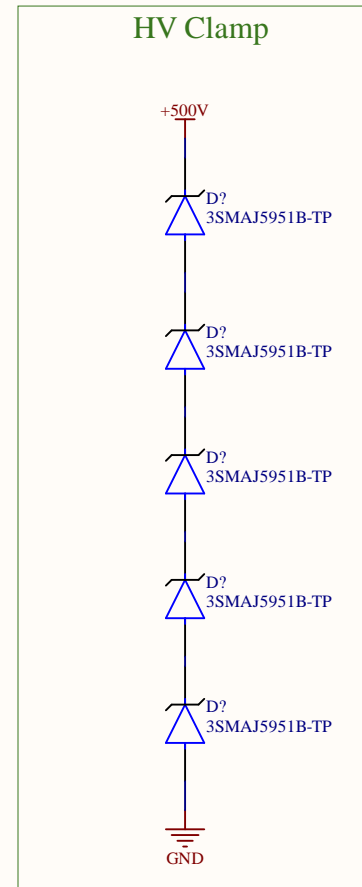
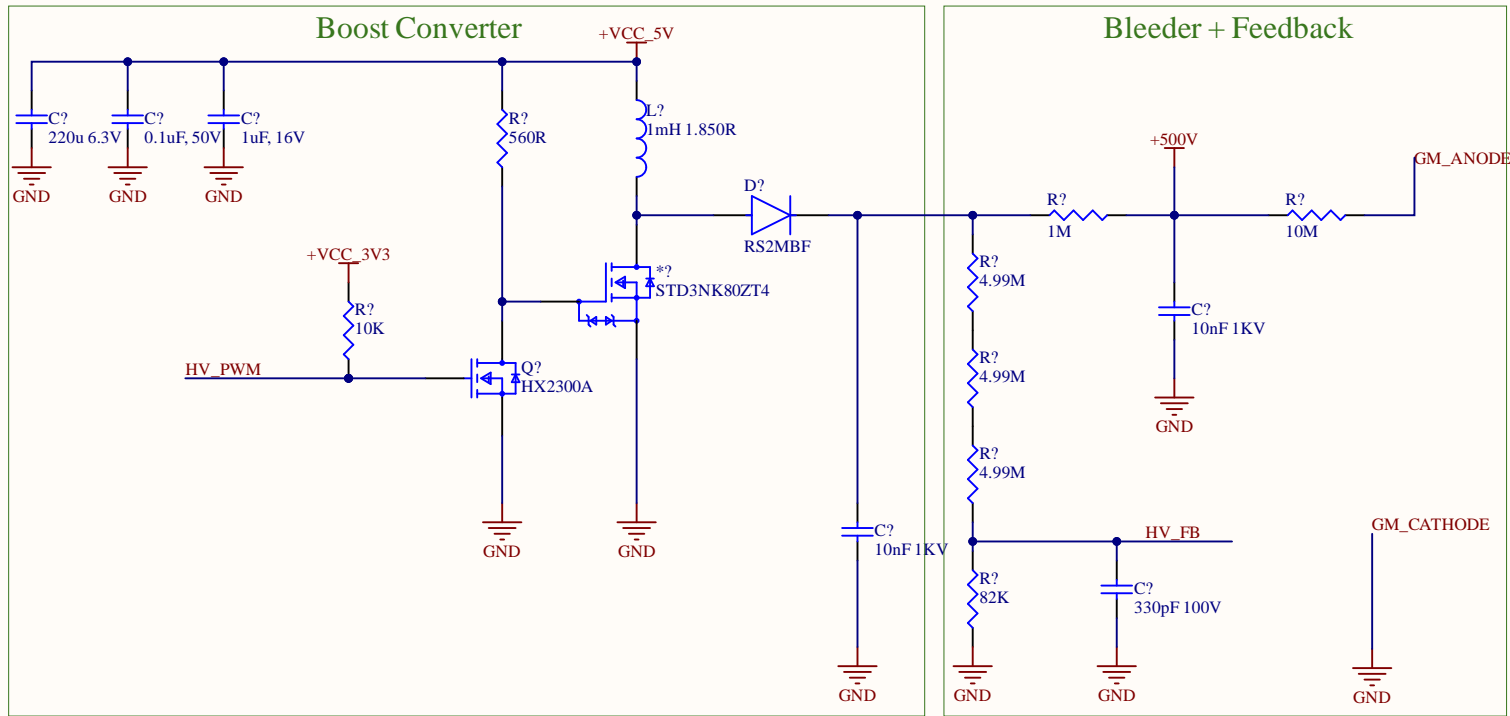
Sheet: 3 of 4

Supervisor: Sr. Andrés Roldán

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GM Tube conditioning circuit

It generates the required 500 V for the GM tube and includes a simple pulse-generating circuit.

Sheet title: Geiger_Circuit.SchDoc

Project title: RadiationDetector.PrjPcb

Author: Pablo Morán Peña

Size: A4

Date: 22/07/2025

Revision: 1

Sheet: 4 of 4

Supervisor: Sr. Andrés Roldán

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