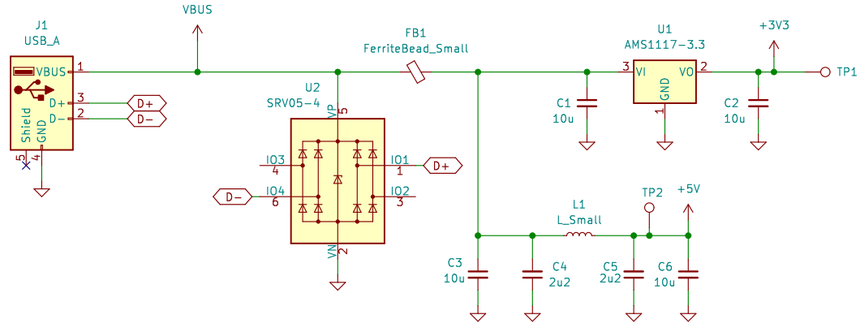
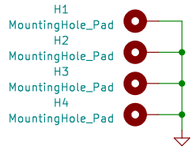


GAS_Measurements

MCU



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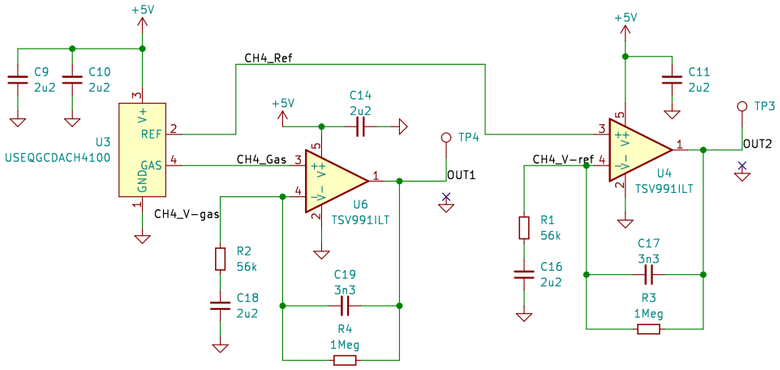
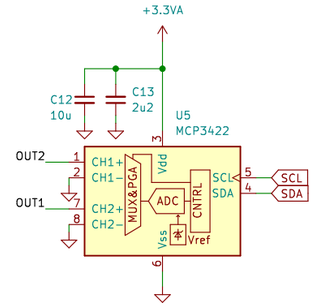
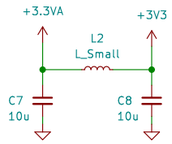
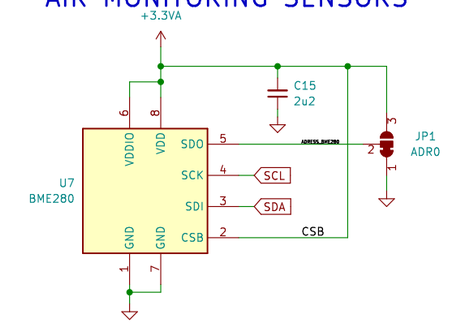
CH4 sensor

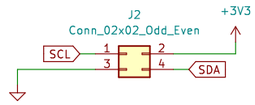




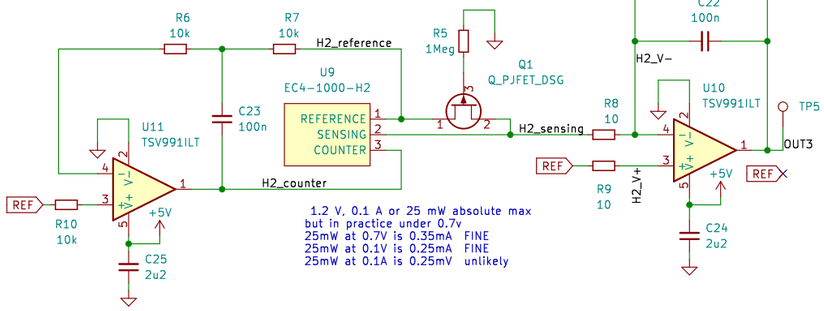


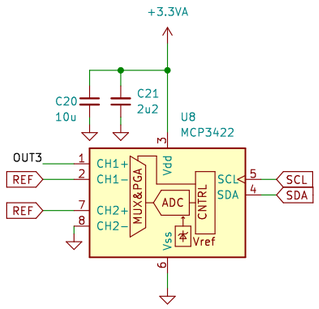
AIR MONITORING SENSORS



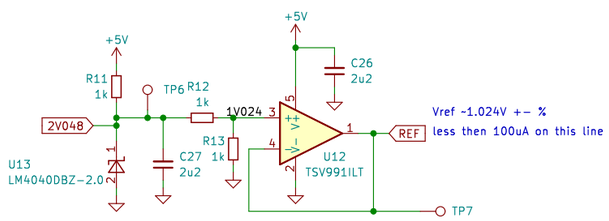


H2 sensor





GAIN MATH:
Transimpedance gain is RG in ohm
H2 10-30nA/ppm so (1-3)*10^-8 0-1000ppm with 2000ppm Maximum overload
Then :
IF RG =10k then (10^4)*(10^-8) V/ppm => 0.1-0.3 mV/ppm with 1-3V@ 1000ppm & 2-6v@ 2000ppm



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Size: A3	Date:	**Rev:**
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DANGER PINS

GPIO_3
GPIO_45
GPIO_46

U14
ESP32-S3-WROOM-1

ESP_BOOT 27 GPIO0/BOOT
ESP_EN 3 EN

GPIO_1 39 GPIO1/TOUCH1/ADC1_CH0
GPIO_2 38 GPIO2/TOUCH2/ADC1_CH1
GPIO_3 15 GPIO3/TOUCH3/ADC1_CH2
GPIO_4 4 GPIO4/TOUCH4/ADC1_CH3
GPIO_5 5 GPIO5/TOUCH5/ADC1_CH4
GPIO_6 6 GPIO6/TOUCH6/ADC1_CH5
GPIO_7 7 GPIO7/TOUCH7/ADC1_CH6
GPIO_8 12 GPIO8/TOUCH8/ADC1_CH7/SUBSPICS1
GPIO_9 17 GPIO9/TOUCH9/ADC1_CH8/FSPIHD/SUBSPIHD
GPIO_10 18 GPIO10/TOUCH10/ADC1_CH9/FSPICS0/FSPIIO4/SUBSPICS0
GPIO_11 19 GPIO11/TOUCH11/ADC2_CH0/FSPID/FSPIIO5/SUBSPID
GPIO_12 20 GPIO12/TOUCH12/ADC2_CH1/FSPICLK/FSPIIO6/SUBSPICLK
GPIO_13 21 GPIO13/TOUCH13/ADC2_CH2/FSPIQ/FSPIIO7/SUBSPIQ
GPIO_14 22 GPIO14/TOUCH14/ADC2_CH3/FSPIWP/FSPIDQS/SUBSPIWP
GPIO_15 8 GPIO15/U0RTS/ADC2_CH4/XTAL_32K_P
GPIO_16 9 GPIO16/U0CTS/ADC2_CH5/XTAL_32K_NH5
GPIO_17 10 GPIO17/U1TXD/ADC2_CH6
GPIO_18 11 GPIO18/U1RXD/ADC2_CH7/CLK_OUT3

2 3V3

GPIO20/U1CTS/ADC2_CH9/CLK_OUT1/USB_D+ 14 D+
GPIO19/U1RTS/ADC2_CH8/CLK_OUT2/USB_D- 13 D-

U0TXD/GPIO43/CLK_OUT1 37 GPIO_43
U0RXD/GPIO44/CLK_OUT2 36 GPIO_44
GPIO21 23 GPIO_21
GPIO45 26 GPIO_45
GPIO46 16 GPIO_46
GPIO48/SPICLK_N/SUBSPICLK_N_DIFF 25 GPIO_48
GPIO47/SPICLK_P/SUBSPICLK_P_DIFF 24 GPIO_47

SPIIO6/GPIO35/FSPID/SUBSPID 28 GPIO_35
SPIIO7/GPIO36/FSPICLK/SUBSPICLK 29 GPIO_36
SPIDQS/GPIO37/FSPIQ/SUBSPIQ 30 GPIO_37
GPIO38/FSPIWP/SUBSPIWP 31 GPIO_38
MTCK/GPIO39/CLK_OUT3/SUBSPICS1 32 GPIO_39
MTDO/GPIO40/CLK_OUT2 33 GPIO_40
MTDI/GPIO41/CLK_OUT1 34 GPIO_41
MTMS/GPIO42 35 GPIO_42

ESP32-S3-WROOM-1

GND 1

+3V3
C30 10u
C31 10u
C32 10u

+3V3 R14 10k
ESP_EN
C28 100n
SW1 MCU_RESET

+3V3 R15 10k
ESP_BOOT
C29 2u2
SW2 MCU_RESET

+3V3
R16 DNP
R17 10k
R18 10k
R19 DNP
SCL
SDA

J3
Conn_01x10
10
9
8
7
6 +3V3
5
4 SCL
3 SDA
2
1 VBUS

+3V3

GPIO_5 SCL
GPIO_6 SDA

J4
Micro_SD_Card_Det

+3V3
C33 10u
C34 100n

DATA_2 1 DAT2
DATA_3 2 DAT3/CD
CMD 3 CMD
4 VDD
CLK 5 CLK
6 VSS
DATA_0 7 DAT0
DATA_1 8 DAT1
CARD_DETECT 10 DET_A
9 DET_B
SHIELD 11

+3V3
R20 10k
R21 10k
R22 10k
R23 10k
R24 10k
R25 10k
R26 10k

GPIO_42 10 R27 DATA_0
GPIO_41 10 R28 DATA_1
GPIO_1 10 R29 DATA_2
GPIO_2 10 R30 DATA_3
GPIO_43 10 R31 CMD
GPIO_44 10 R32 CLK
GPIO_40 CARD_DETECT

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Title:
Size: A3 Date: Rev:
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