

1 COVER PAGE

COVER PAGE.SchDoc

21/04/2022

Variation: [No Variations]

Board dimension: 110x 90mm

PCB Color: Green

Thickness: 1.6mm

Layer: 2

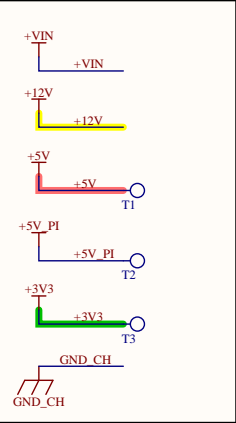
Version

v2.0	Raspberry PI	02-2017	AnhHH
v2.1	Relay thường	09-2017	AnhHH
v2.2	Relay Latching	12-2018	AnhHH
v2.3	IPM 2.3 Thay đổi so với IPMS 2.2	02/2022	AnhHH
Nâng cấp NTC và cổng RS485			
Thêm cổng RS485, IPMS 2.3 hỗ trợ 3 cổng RS485			
Thêm 4 sensor nhiệt độ, IPMS 2.3 hỗ trợ 6 cảm biến nhiệt độ NTC10k			
Thay đổi chân cảm biến độ ẩm IPMS 2.2 (HS1101 PE14), IPMS 2.3 (SHT30-ARP PB1)			
19/04/2022 bỏ điện trở R25, điện trở output 1.65V			

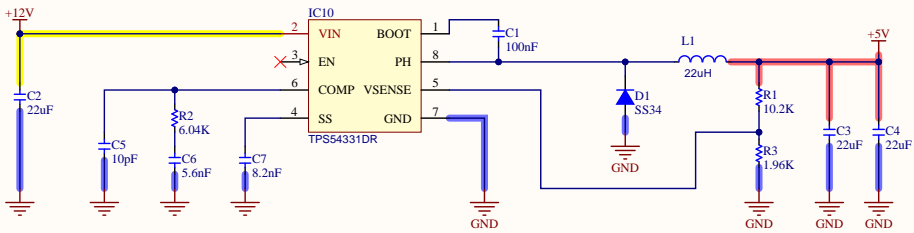
POP MONITORING SYSTEM			
Title: IPMS 2.3 Slave Board.PrjPcb			
Page Contents: COVER PAGE.SchDoc			
Size:	DWG NO		Revision: IPMS 2.2
Date: 21/04/2022	Ho Hoang Anh		Sheet 1 of 8

2 POWER

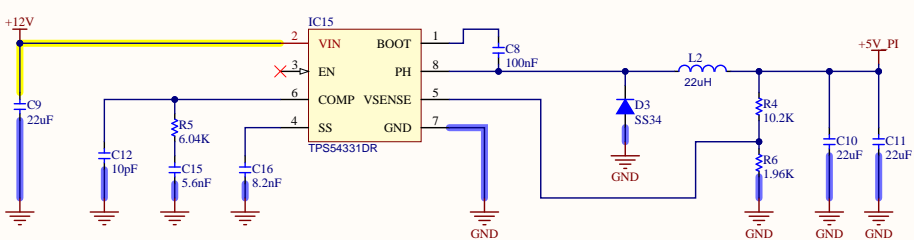
POWER.SchDoc



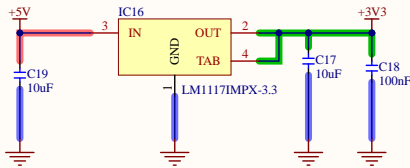
12V to 5V



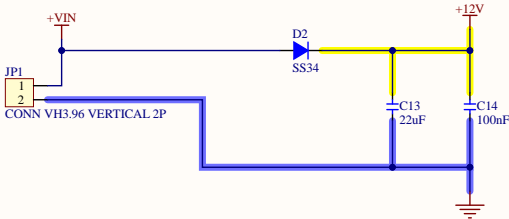
5V 1A for Orange PI



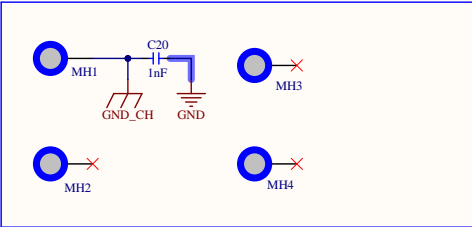
+3V3 LDO MCU



+12V VIN



Mouting hole



QC Check Button

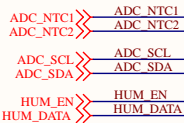
Lead-Free

POP MONITORING SYSTEM

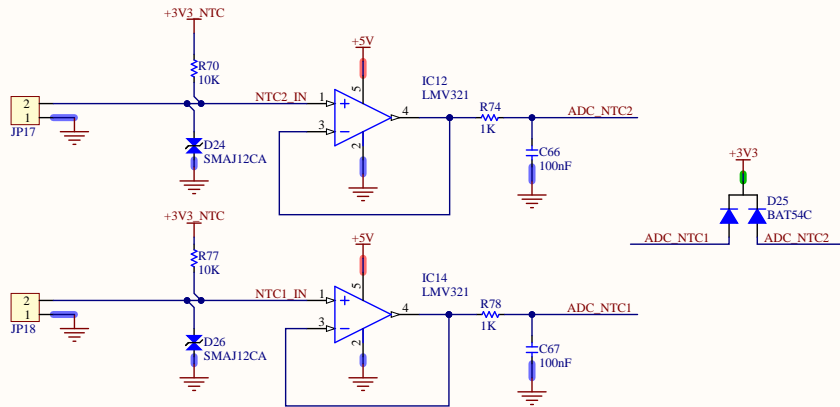
Title: IPMS 2.3 Slave Board.PrjPcb			
Page Contents: POWER.SchDoc			
Size:	DWGNO		Revision: IPMS 2.2
Date: 21/04/2022	Ho Hoang Anh		Sheet 2 of 8

3 NTC and RHT Sensor

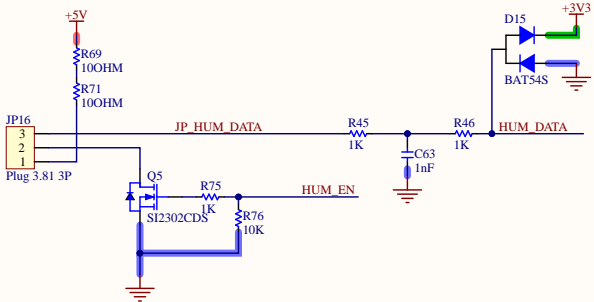
NTC and RH Sensor.SchDoc



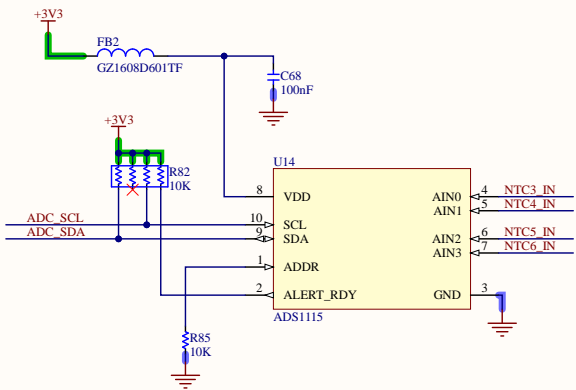
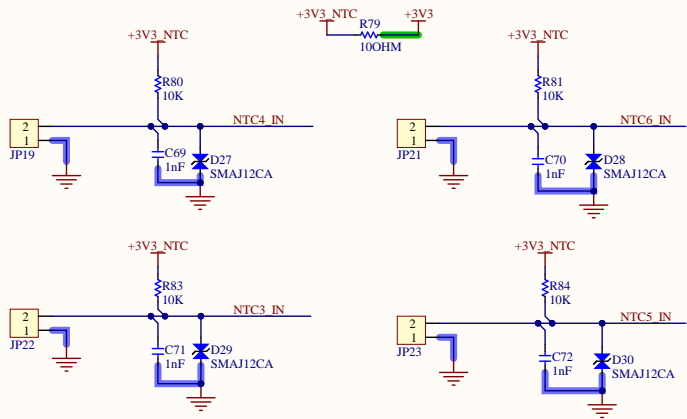
THERMISTOR NTC1, NTC2



HUMIDITY SENSOR



EXTENDED TEMPERATURE SENSOR NTC3, NTC4, NTC5, NTC6



POP MONITORING SYSTEM

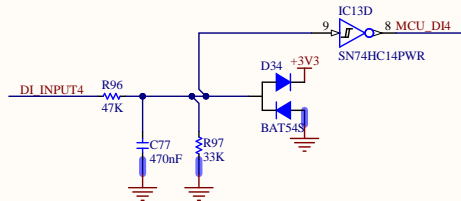
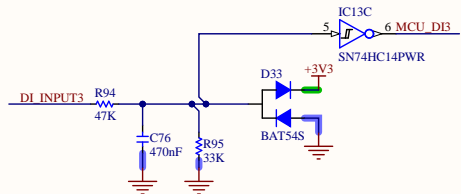
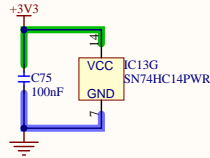
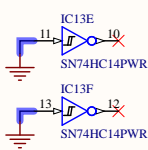
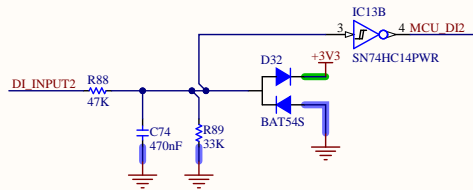
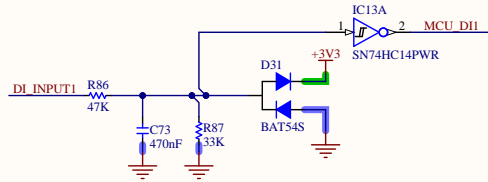
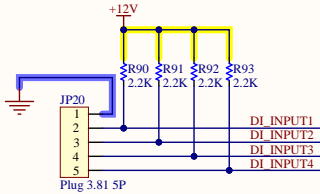
Title: IPMS 2.3 Slave Board.PrjPcb			
Page Contents: NTC and RH Sensor.SchDoc			
Size:	DWGNO	Revision: #	
Date: 21/04/2022	Ho Hoang Anh	Sheet 3	of 8

4 INPUT
INPUT.SchDoc

Alarm sensor and CT sensor

MCU_D11>> MCU_D11
MCU_D12>> MCU_D12
MCU_D13>> MCU_D13
MCU_D14>> MCU_D14

Low-pass filter cut off 7.2hz



Title:			
Page Contents:			
Size:	DWG NO	Revision:	
Date:	Sheet		of

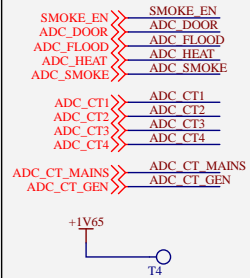
POP MONITORING SYSTEM

IPMS 2.3 Slave Board.PrjPcb

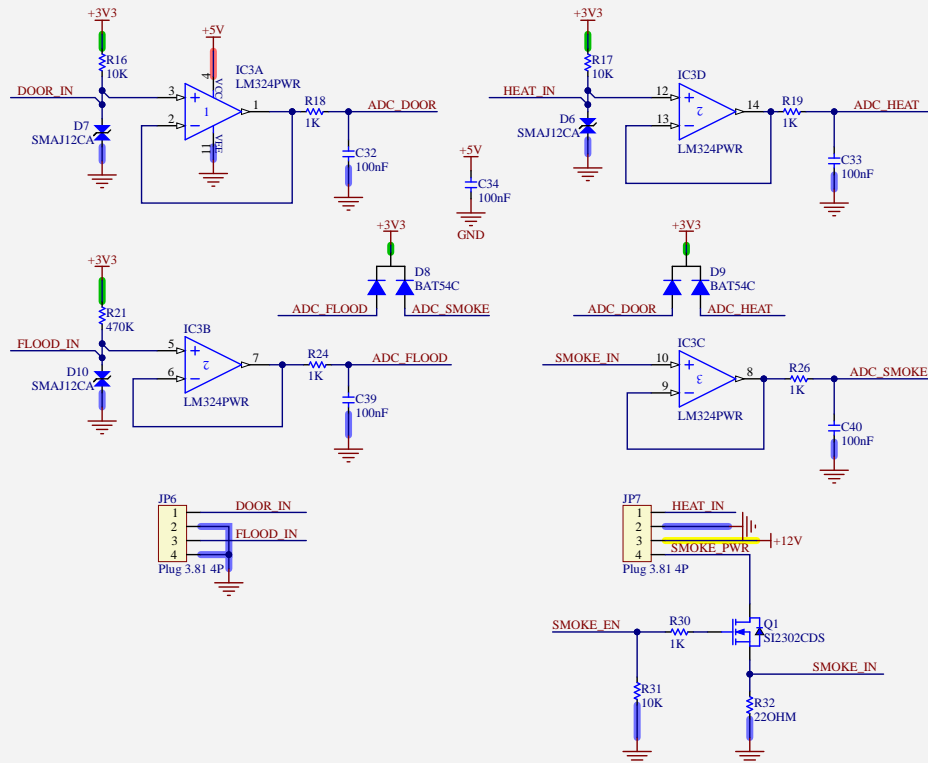
INPUT.SchDoc

5 ALARM SENSOR and CT Sensor

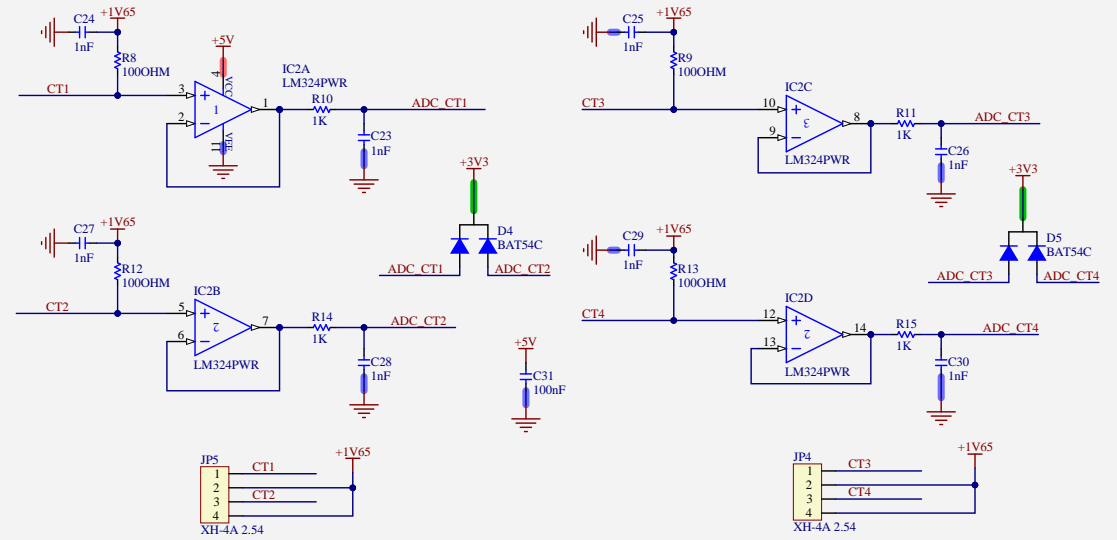
ALARM SENSOR and CT SENSOR.SchDoc



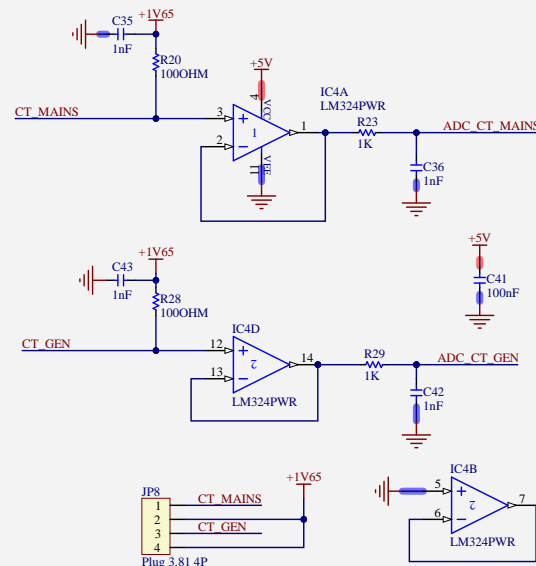
SENSOR DOOR, FLOOD, HEAT, SMOKE



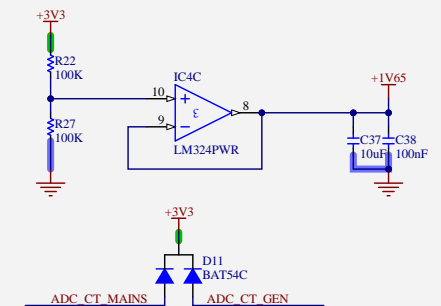
CT SENSOR AIR CONDITIONER



CT Sensor For ATS



+1V65_VREF

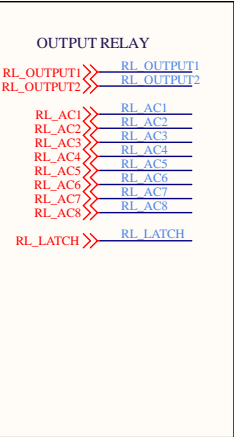


POP MONITORING SYSTEM

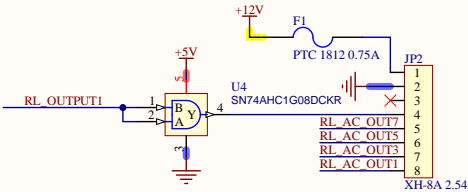
Title: IPMS 2.3 Slave Board.PrjPcb			
Page Contents: ALARM SENSOR and CT SENSOR.SchDoc			
Size:	DWG NO	Revision: IPMS 2.2	
Date:	21/04/2022	Ho Hoang Anh	Sheet 5 of 8

6 OUTPUT RELAY

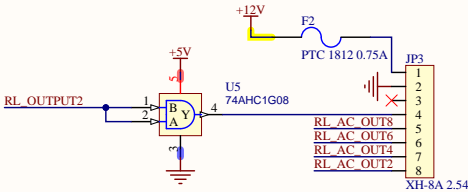
OUTPUT RELAY.SchDoc



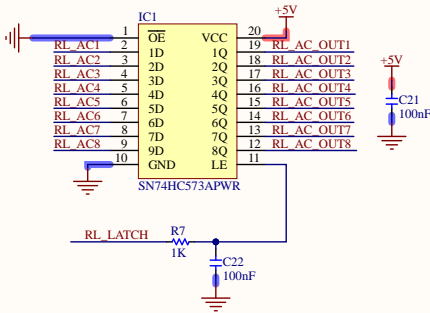
CONNECT TO MODULE RELAY 1



CONNECT TO MODULE RELAY 2

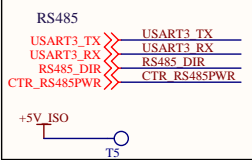


LATCHING 74HC573

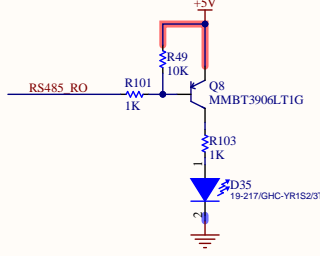


7 RS485

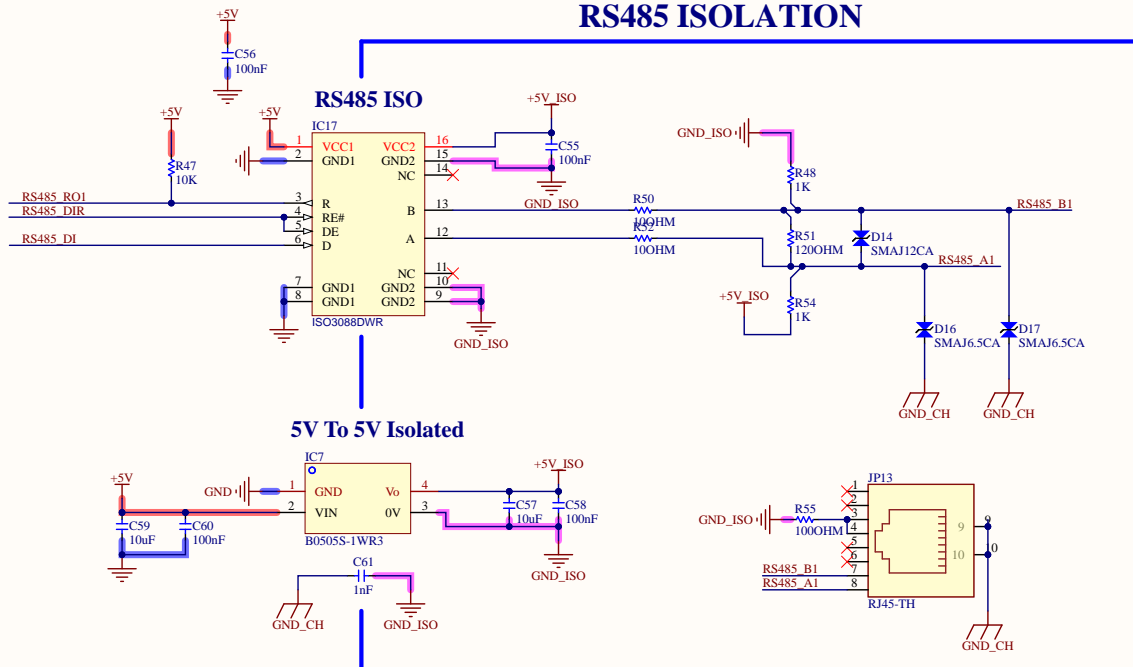
RS485.SchDoc



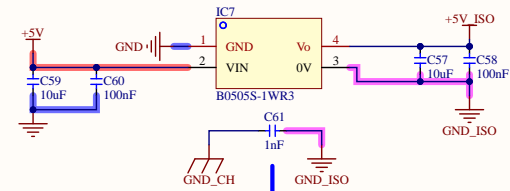
RS485_RX LED Indication



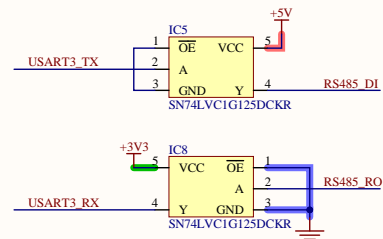
RS485 ISOLATION



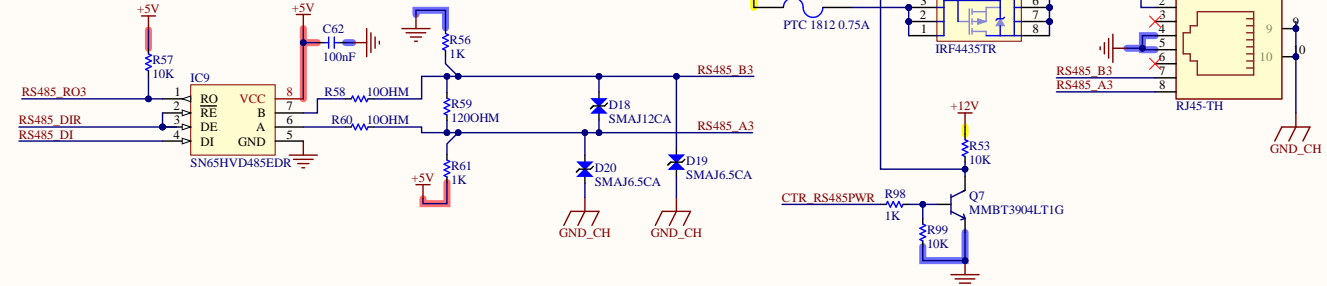
5V To 5V Isolated



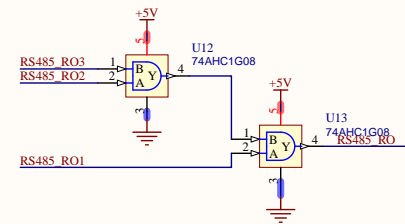
5V 3V3 Buffer



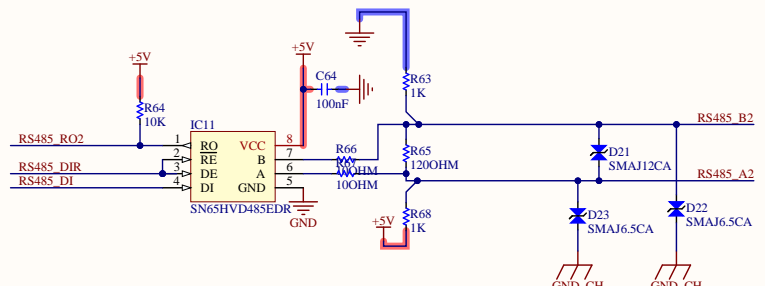
RS485 POWER 12V@0.75A



RS485 RO



RS485 NON ISOLATION



POP MONITORING SYSTEM

Title: IPMS 2.3 Slave Board.PrjPcb		
Page Contents: RS485.SchDoc		
Size:	DWG NO	Revision: IPMS 2.2
Date: 21/04/2022	Ho Hoang Anh	Sheet 7 of 8

8 MCU

MCU.SchDoc

CABLE LCD

NTC AND RH Sensor

ADC_NTC1 >> ADC NTC1
ADC_NTC2 >> ADC NTC2

ADC_SCL >> ADC_SCL
ADC_SDA >> ADC_SDA

HUM_EN >> HUM_EN
HUM_DATA >> HUM_DATA

Input

MCU_DH1 >> MCU_DH1
MCU_DH2 >> MCU_DH2
MCU_DH3 >> MCU_DH3
MCU_DH4 >> MCU_DH4

Alarm sensor and CT sensor

SMOKE_EN >> SMOKE_EN
ADC_DOOR >> ADC_DOOR
ADC_FLOOD >> ADC_FLOOD
ADC_HEAT >> ADC_HEAT
ADC_SMOKE >> ADC_SMOKE

ADC_CT1 >> ADC_CT1
ADC_CT2 >> ADC_CT2
ADC_CT3 >> ADC_CT3
ADC_CT4 >> ADC_CT4

ADC_CT_MAINS >> ADC_CT_MAINS
ADC_CT_GEN >> ADC_CT_GEN

OUTPUT RELAY

RL_OUTPUT1 >> RL_OUTPUT1
RL_OUTPUT2 >> RL_OUTPUT2

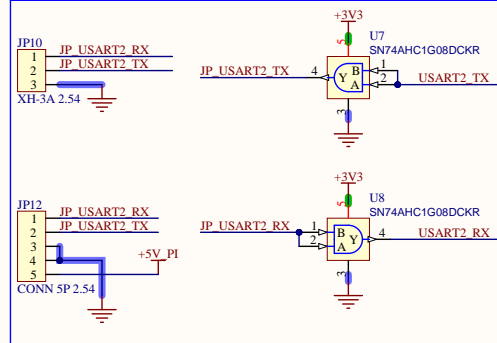
RL_AC1 >> RL_AC1
RL_AC2 >> RL_AC2
RL_AC3 >> RL_AC3
RL_AC4 >> RL_AC4
RL_AC5 >> RL_AC5
RL_AC6 >> RL_AC6
RL_AC7 >> RL_AC7
RL_AC8 >> RL_AC8

RL_LATCH >> RL_LATCH

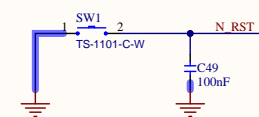
RS485

USART3_TX >> USART3_TX
USART3_RX >> USART3_RX
RS485_DIR >> RS485_DIR
CTR_RS485PWR >> CTR_RS485PWR

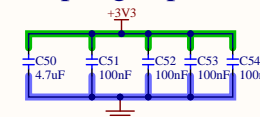
USART2 Connect to Orange PI



RESET STM32F103VCT6

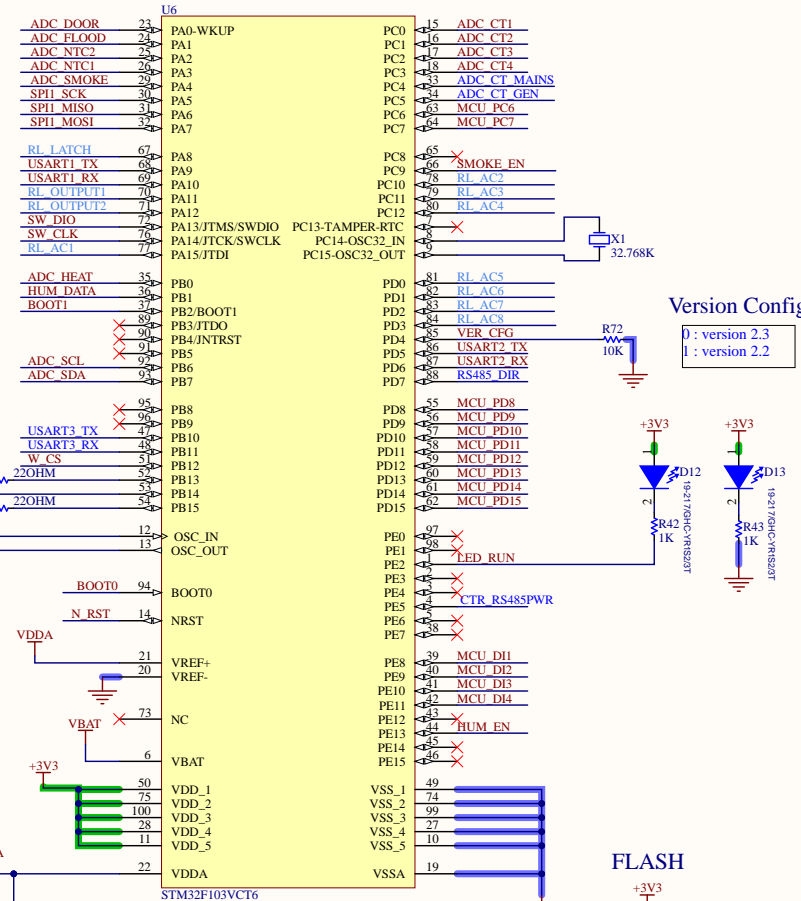


Decoupling capacitor



The 4.7 μ F capacitor must be connected to VDD3

STM32F103VCT6



POP MONITORING SYSTEM

Title: IPMS 2.3 Slave Board.PrjPcb			
Page Contents: MCU.SchDoc			
Size:	DWGNO	Revision: IPMS 2.2	
Date: 21/04/2022	Ho Hoang Anh	Sheet 8	of 8