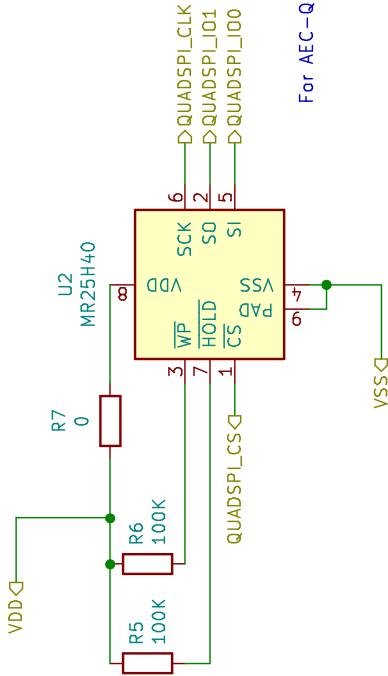


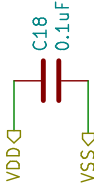
WP is write protect. Low active
HOLD suspends operation. Low active.
CS is chip select. Low active
SCK is SPI clock
SO is output
SI is input
VDD is from 3.0V to 3.6V
Connect pad only to VSS

<https://www.cypress.com/file/196526/download> for layout guide

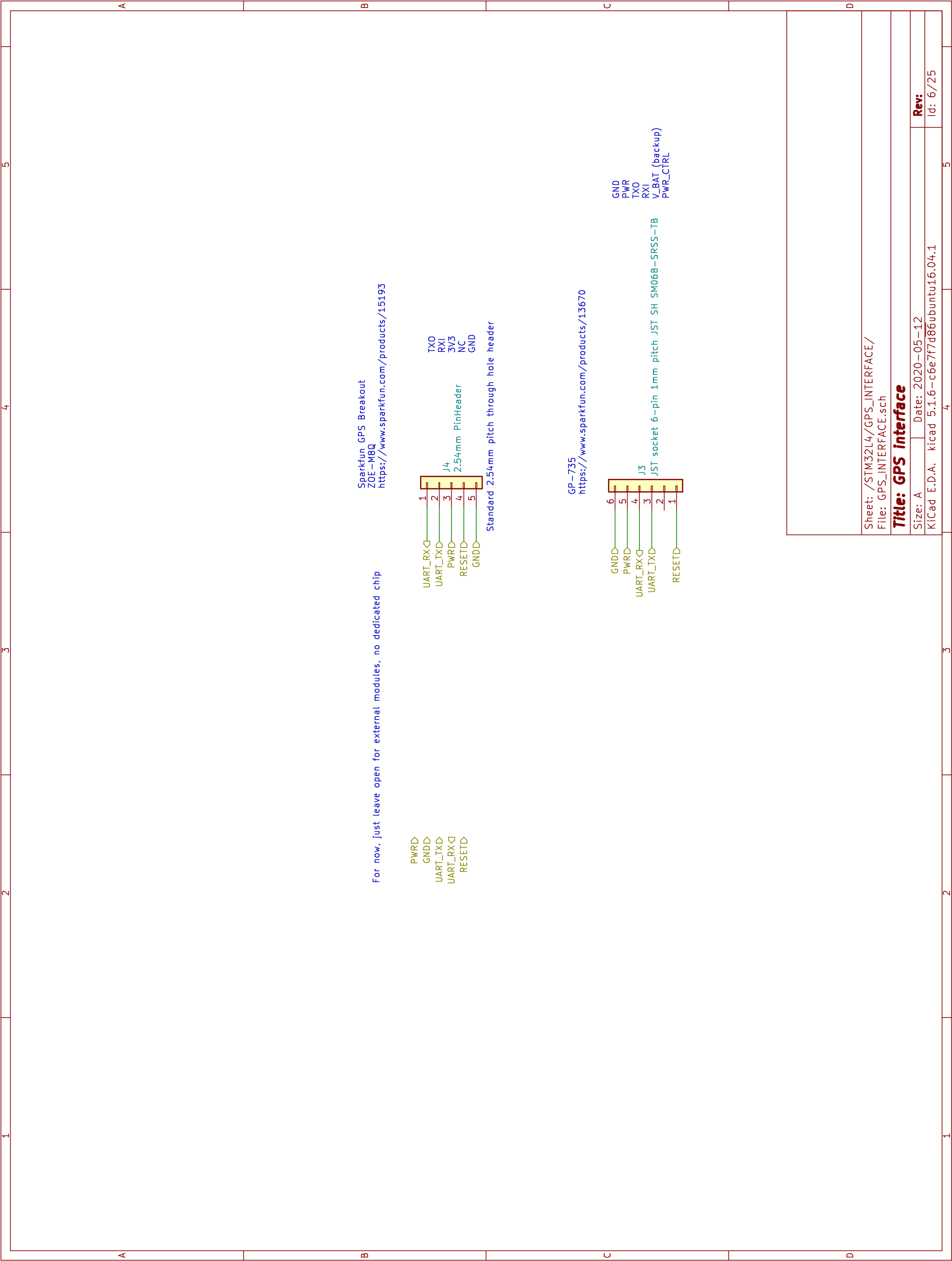
0.1 μ F decoupling cap

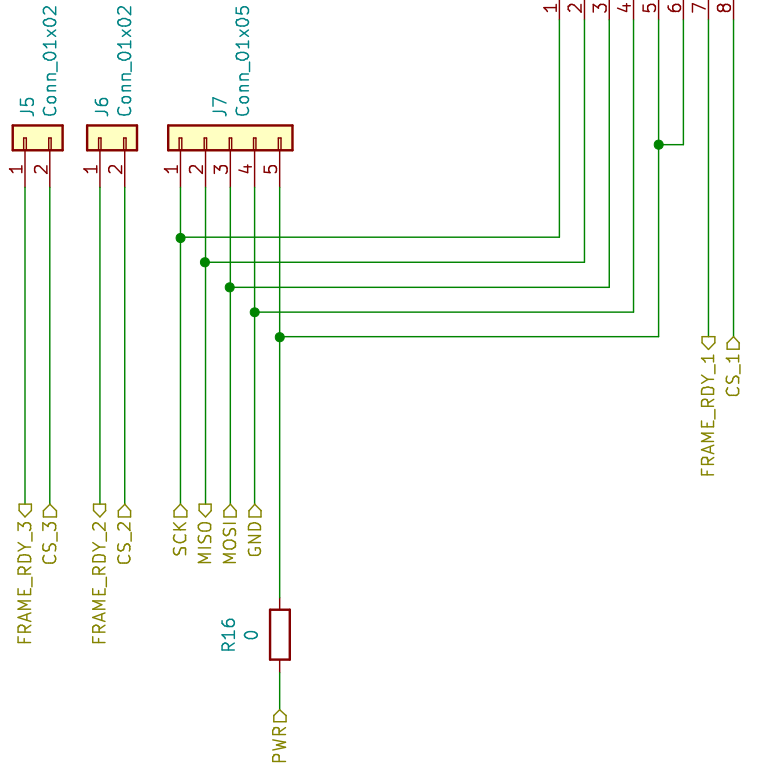


Layout Note: Decoupling



Sheet: /STM32L4/MRAM_2/	
File: MRAM_2.sch	
Title: MRAM	
Size: A	Date: 2020-05-03
KiCad E.D.A.	Rev: Id: 3/25
kicad 5.1.6-c6e7f7d86ubunt	16.04.1



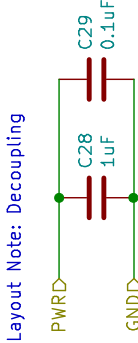


One sensor to test functionality, and the ability to add external sensors

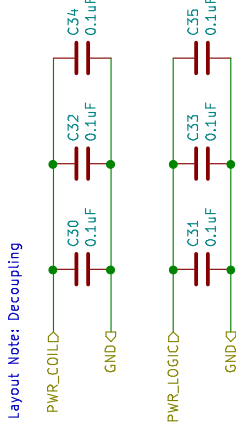
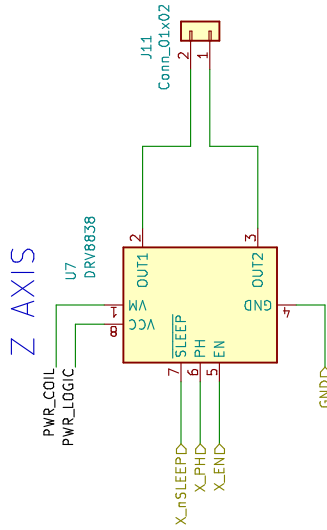
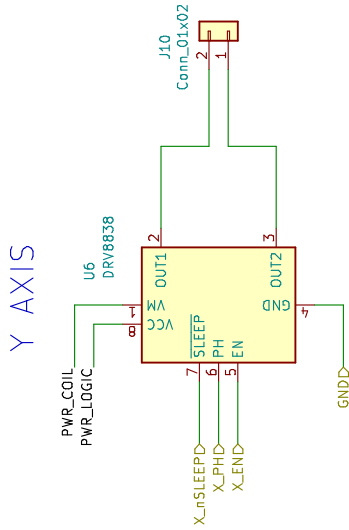
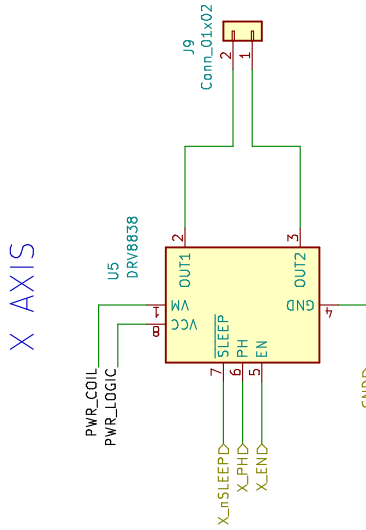
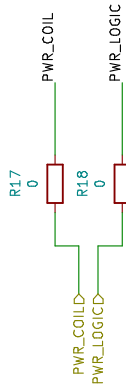
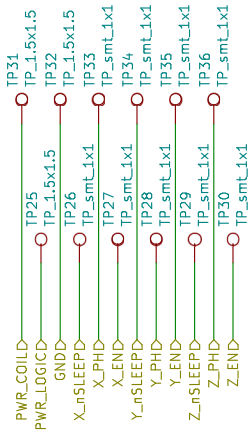
142 Pixel linear optical array
Pixels are 100 μ m (H) by 47 μ m (W) with a 50 μ m pitch

U4
MLX75306

PWR: 3.0 to 3.6V, 3.3V typical

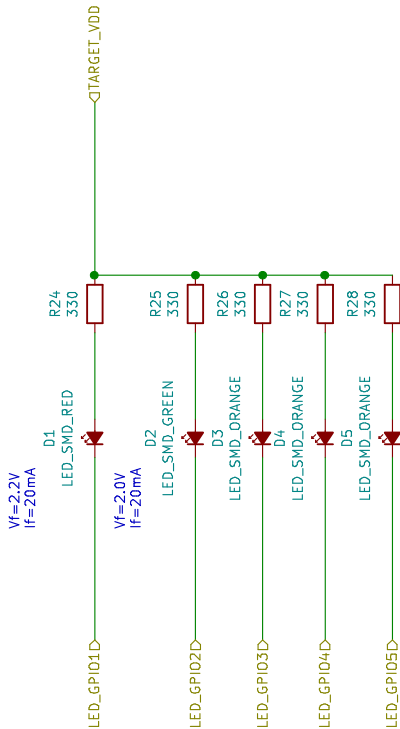


Sheet: /STM32L4/SUNSENSOR_INTERFACE/ File: SUNSENSOR.sch	
Title: Sun Sensor Interface	
Size: A	Date: 2020-05-17
KiCad E.D.A. kicad	5.1.6 - c6e7f7d86ubuntu16.04.1
Rev:	
Id: 7/25	

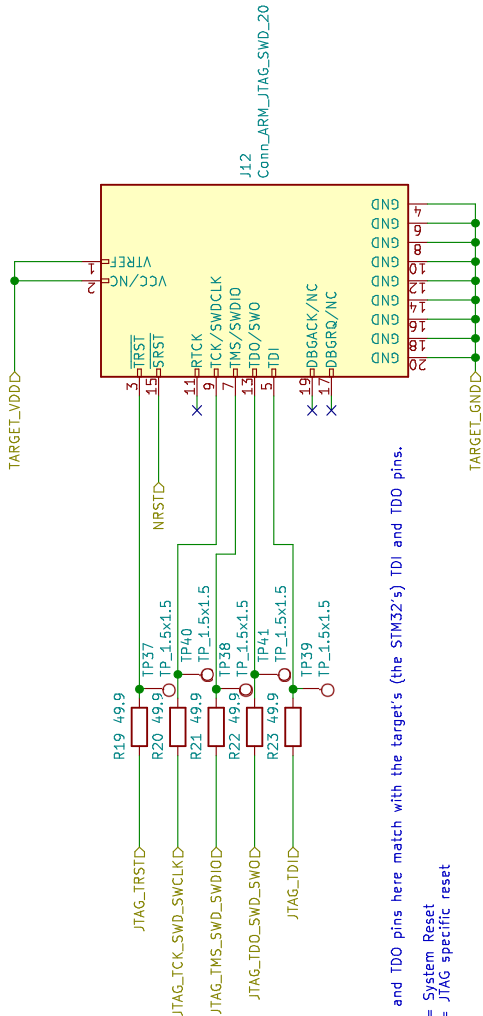


nSLEEP	PH	EN	OUT1	OUT2	Function
0	X	X	Z	Z	Coast
1	X	0	L	L	Brake
1	1	1	L	H	Reverse
1	0	1	H	L	Forward

DEBUG LED



JTAG / SWD

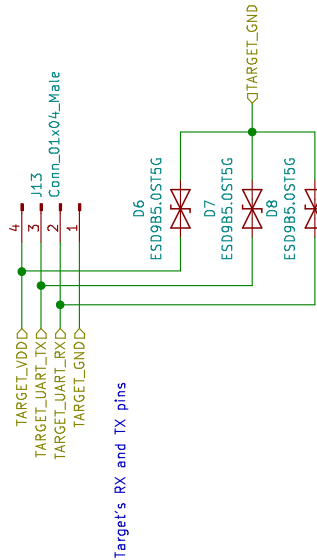


The TDI and TDO pins here match with the target's (the STM32's) TDI and TDO pins.
SRST = System Reset
TRST = JTAG specific reset

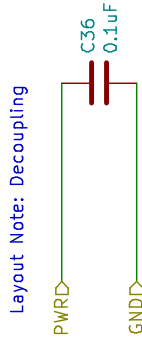
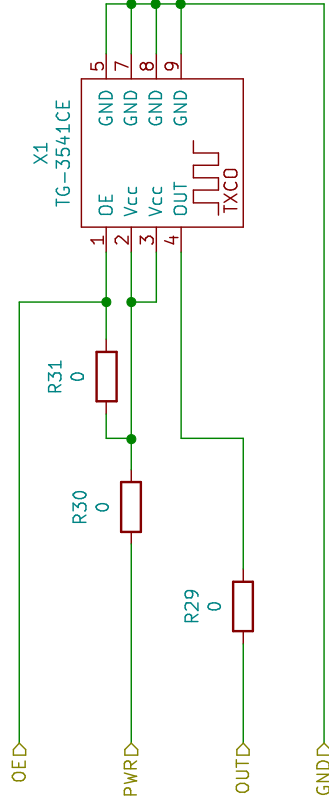
The series resistors are useful on high-speed traces.
<https://electronics.stackexchange.com/questions/7709/why-put-a-resistor-in-series-with-signal-line>
So I'm going with 50 ohm

- JTAG
 - TDI (Test Data In)
 - TDO (Test Data Out)
 - TCK (Test Clock)
 - TMS (Test Mode Select)
 - TRST (Test Reset) optional
- SWD
 - SWCLK (Clock signal to target CPU)
 - SWDIO (Bi-directional data pin)
 - SWO (Serial Wire output) optional

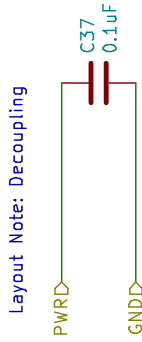
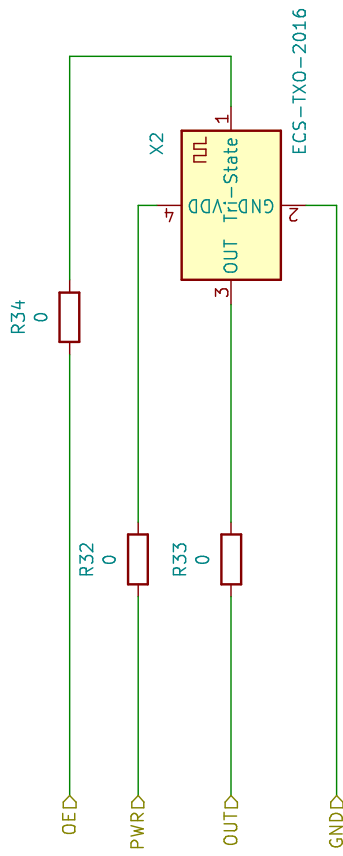
DEBUG UART



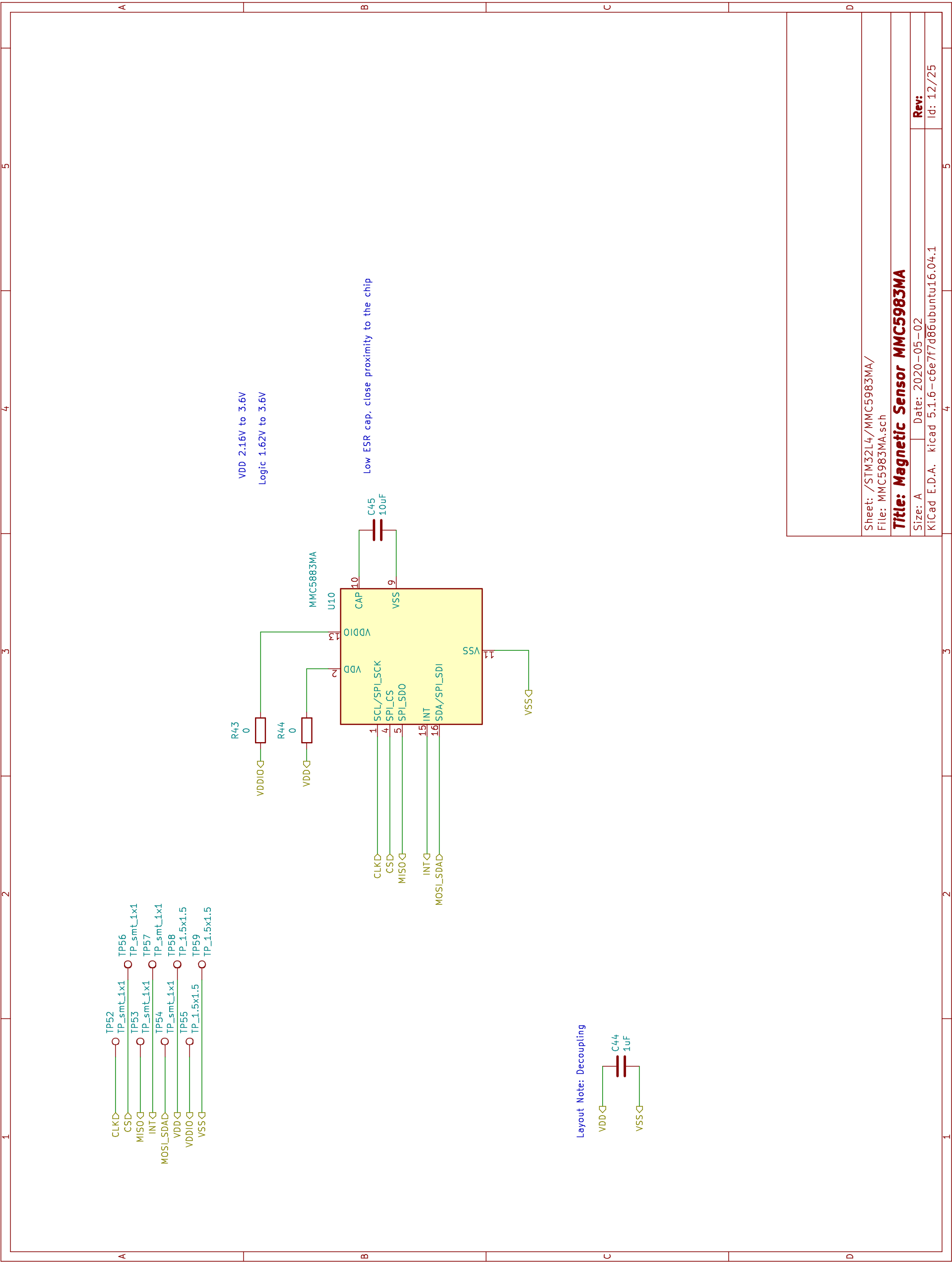
Target's RX and TX pins



Sheet: /STM32L4/OSC32_TCX0/ File: OSC32_TCX0.sch	
Title: 32kHz TCX0	
Size: A	Date: 2020-05-25
KiCad E.D.A.	Id: 10/25



Sheet: /STM32L4/OSC_HSE_TCXO/ File: OSC_HSE_TCXO.sch	
Title: 10MHz TCXO	
Size: A	Date: 2020-05-25
KiCad E.D.A. kicad 5.1.6 -c6e7f7d86ubuntu16.04.1	Rev: Id: 11/25



VDD

TP_1.5x1.5

VDDIO

TP_1.5x1.5

VSS

TP_1.5x1.5

VDDIO

R43

0

VDD

R44

0

VDDIO

MMC5883MA

U10

VDDIO

13

VDD

2

CLKD

1

CSD

4

MISO

5

INT

15

MOSI_SDAD

16

VSS

11

VSS

9

CAP

10

C45

10uF

Low ESR cap, close proximity to the chip

VDD

2.16V to 3.6V

Logic

1.62V to 3.6V

Layout Note: Decoupling

VDD

C44

1uF

VSS

Sheet: /STM32L4/MMC5983MA/
File: MMC5983MA.sch

Title: **Magnetic Sensor MMC5983MA**

Size: A

Date: 2020-05-02

KiCad E.D.A.

kicad 5.1.6-c6e7fd86ubuntu16.04.1

Rev:

Id: 12/25

1	2	3	4	5
A	VDDD VSSD			
	OUT1< OUT2< OUT3< OUT4< OUT5< OUT6< OUT7< OUT8<	Sheet: NTC_THERMISTOR <div>1</div> <div><div>VDDD</div><div>VSSD</div><div>OUT1<</div><div>QVOUT</div></div> File: NTC_THERMISTOR.sch		
		Sheet: sheet5EC0237A <div>2</div> <div><div>VDDD</div><div>VSSD</div><div>OUT2<</div><div>QVOUT</div></div> File: NTC_THERMISTOR.sch		
		Sheet: sheet5EC02640 <div>3</div> <div><div>VDDD</div><div>VSSD</div><div>OUT3<</div><div>QVOUT</div></div> File: NTC_THERMISTOR.sch		
		Sheet: sheet5EC02641 <div>4</div> <div><div>VDDD</div><div>VSSD</div><div>OUT4<</div><div>QVOUT</div></div> File: NTC_THERMISTOR.sch		
B		Sheet: sheet5EC02E2C <div>5</div> <div><div>VDDD</div><div>VSSD</div><div>OUT5<</div><div>QVOUT</div></div> File: NTC_THERMISTOR.sch		
		Sheet: sheet5EC02E2D <div>6</div> <div><div>VDDD</div><div>VSSD</div><div>OUT6<</div><div>QVOUT</div></div> File: NTC_THERMISTOR.sch		
		Sheet: sheet5EC02E2E <div>7</div> <div><div>VDDD</div><div>VSSD</div><div>OUT7<</div><div>QVOUT</div></div> File: NTC_THERMISTOR.sch		
C		Sheet: sheet5EC02E2F <div>8</div> <div><div>VDDD</div><div>VSSD</div><div>OUT8<</div><div>QVOUT</div></div> File: NTC_THERMISTOR.sch		
D				
Sheet: /STM32L4/TEMPERATURE_ADC/ File: TEMPERATURE_ADC.sch				
Title: Temperature Sensors				
Size: A		Date: 2020-05-05	Rev:	
KiCad E.D.A.		kiCad 5.1.6-c6e7fd86ubuntu16.04.1	Id: 13/25	
1	2	3	4	5

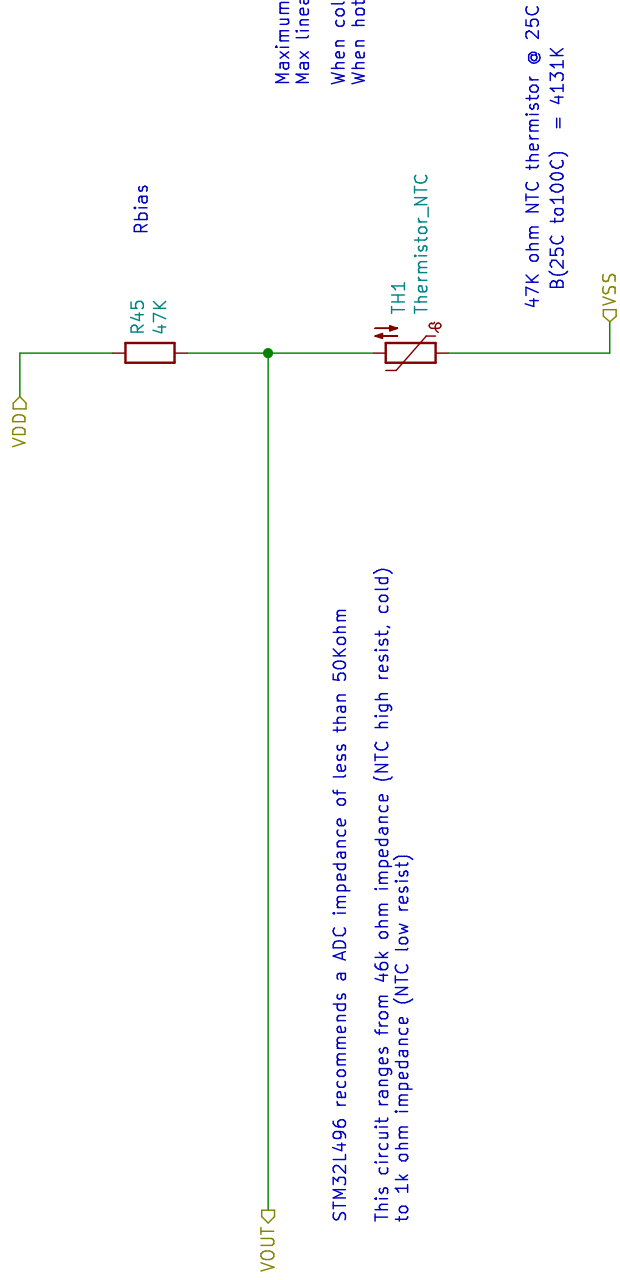


Table 7: User Connector Pin Allocation				
Pin No.	Signal Name	Signal direction (WRT 9603/9603N)	Signal function	Signal level
1	EXT_PWR	Input	Supply	+5 V +/- 0.2 V*
2	EXT_PWR	Input	Supply	+5 V +/- 0.2 V*
3	EXT_GND	Input	Supply return	0 V
4	EXT_GND	Input	Supply return	0 V
5	ON/OFF	Input	On/Off control input	Analog On: >=2.0V Off: <=0.5V
6	DF_S_TX	Input	Data port, serial data input	3.3V Digital
7	DF_S_RX	Output	Data port, serial data output	3.3V Digital
8	SIG_GND	Input	Signal ground	0V
9	DF_DCD	Output	Data port, Data Carrier Detect	3.3V Digital
10	DF_DSR	Output	Data port, Data Set Ready	3.3V Digital
11	DF_CTS	Output	Data port, Clear-to-Send	3.3V Digital
12	DF_RI	Output	Data port, Ring Indicator	3.3V Digital
13	DF_RTS	Input	Data port, Request-to-Send	3.3V Digital
14	DF_DTR	Input	Data port, Data Terminal Ready	3.3V Digital
15	SIG_GND	Input	Signal ground	0V
16	Reserved			
17	Reserved			
18	SIG_GND	Input	Signal ground	0V
19	NETWORK_AVAILABLE	Output	Signals when the 9603/9603N can see an available satellite network	3.3V Digital Available = high Not available= low
20	SUPPLY_OUT	Output	Supply power indicator output	+3.3 V 5mA maximum

* Note: This is the supply voltage range of the 9603; the 9603N has an extended supply voltage range of +5 V +/- 0.5 V

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