



# Koruza-CM

## CONTENTS:

PAGE1 - CONTENTS

PAGE2 - POWER, MODULE, KORUZA CONNECTORS

PAGE3 - HUB, USB, ETHERNET

PAGE4 - SFP

## Version Revision:

v0.3 - 30.03.2017.

### DESIGN CONSIDERATIONS

DESIGN NOTE:  
Example text for informational  
design notes.

DESIGN NOTE:  
Example text for critical  
design notes.

LAYOUT NOTE:  
Example text for critical  
layout guidelines.

Koruza [www.koruza.net](http://www.koruza.net)

Title: **koruza-compute-module-board.PrjPcb**

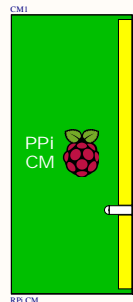
Page Contents: **PAGE1 - CONTENTS.SchDoc**

Size: DWG NO Revision: **v0.3**

Date: \* Sheet **1** of **4**

# KORUZA-CM

www.koruzacm.com



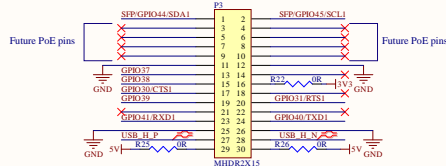
DESIGN NOTE:  
Route red ringed signals as matched length 100R differential pair

DESIGN NOTE:  
For USB to be connected to the header zero ohm resistors need to be soldered.

DESIGN NOTE:  
Route red bold ringed signals as matched length 90R differential pair.

DESIGN NOTE:  
VDD\_CORE used for module test only (do not use in normal operation, do not draw current from this pin)

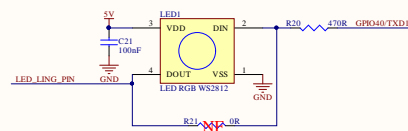
## Koruzo GPIO connector



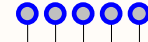
## IR Link connector



## RGB Status LED



## Mounting holes



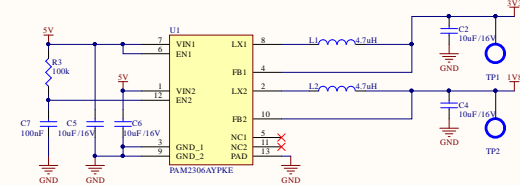
## Fiducials



DESIGN NOTE:  
If RGB LED is soldered, zero ohm resistor should not be fixed.

LAYOUT NOTE:  
LED Ring connector need to be placed on the front edge of the board, to be easy accessible.

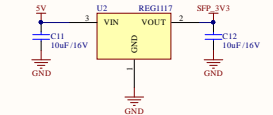
## Power



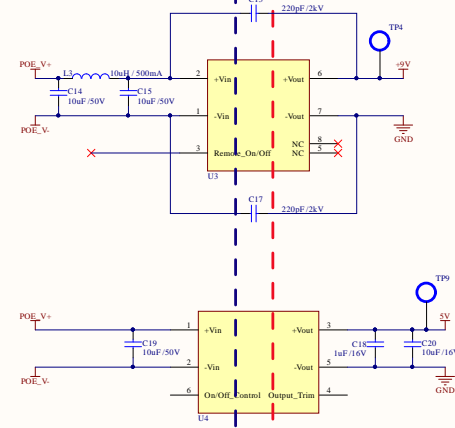
DESIGN NOTE:  
Jumper position:  
3-2 = USB BOOT ENABLED  
2-1 = USB BOOT DISABLED

LAYOUT NOTE:  
Data right angle header,  
place on the edge.

## SFP Power supply

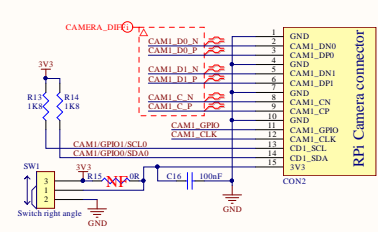


## Galvanically isolated

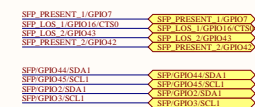
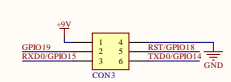


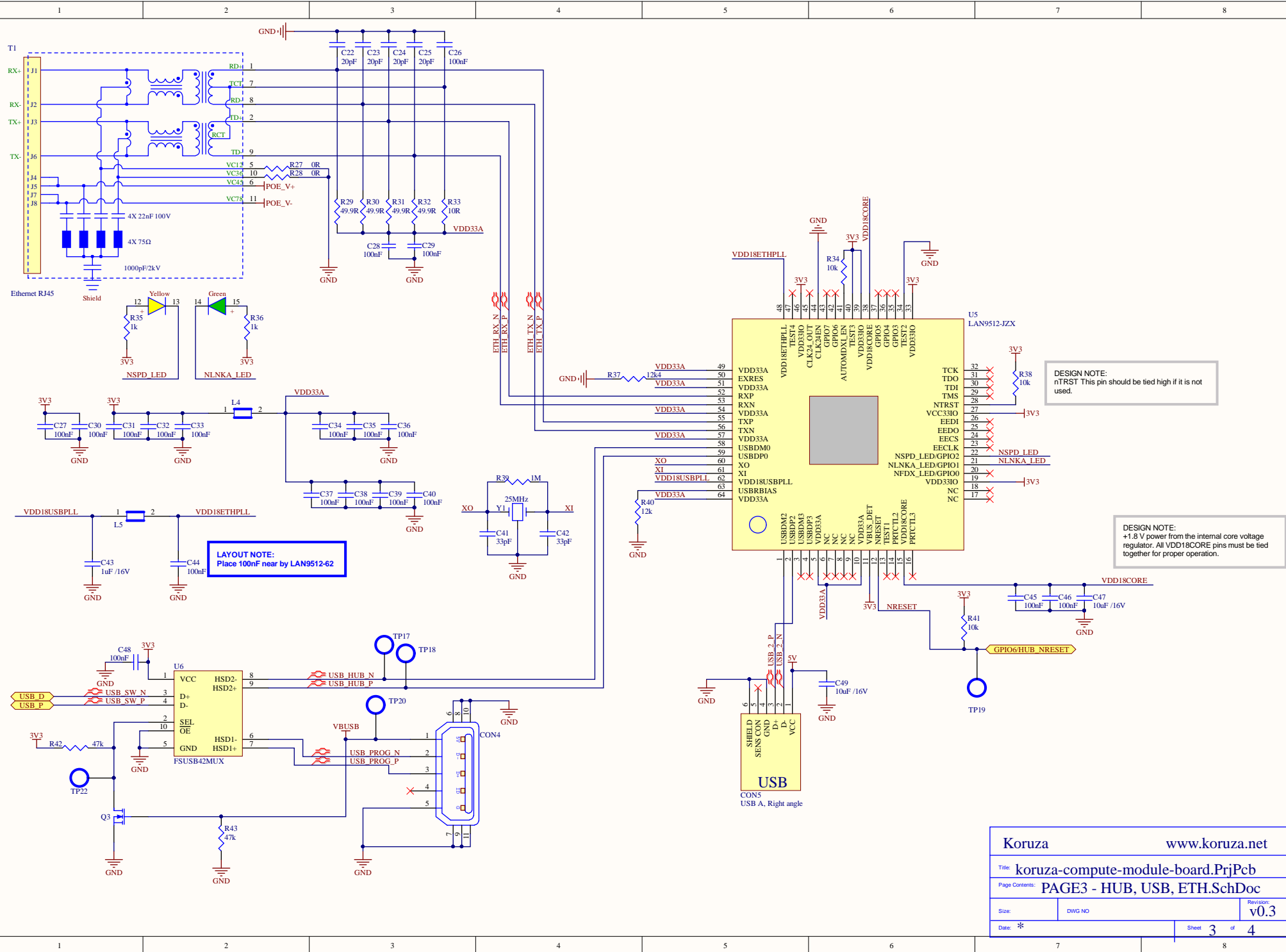
DESIGN NOTE:  
This board supports 3V3 voltage level on the IO pins.  
It is powered with passive PoE, +5V and it is galvanically isolated,  
due to two isolated DC-DC converters.

## Koruzo Camera connector



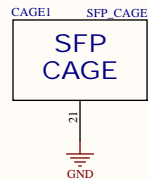
## Koruzo move driver connector



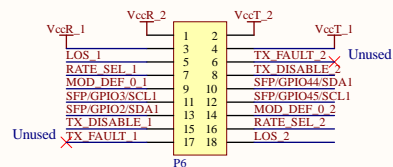


# Rigid to Flex PCB connection

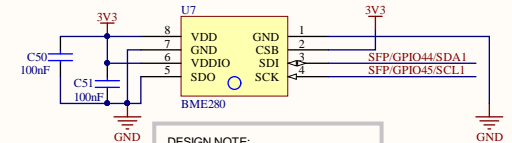
SFP Cage Rigid to flex connector



Koruza SFP rigid to flex GPIO connector

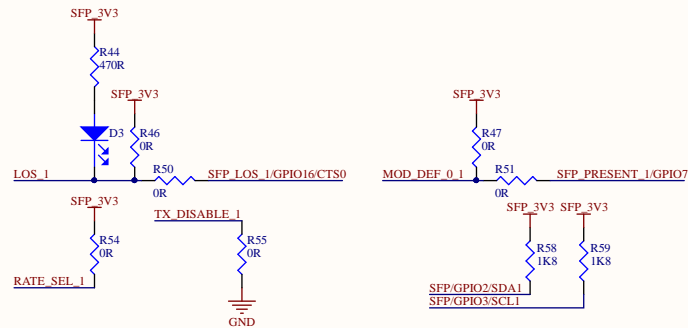


Environment sensor  
Temperature, humidity, presure

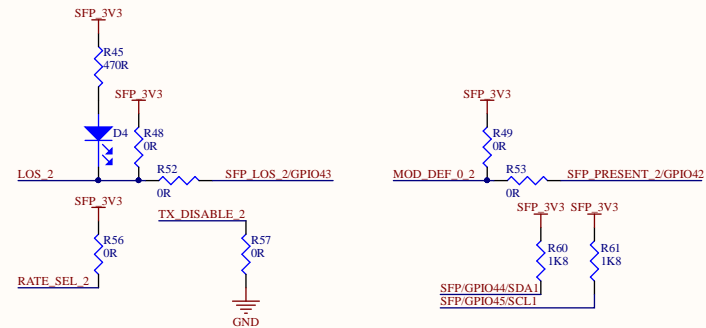


DESIGN NOTE:  
I2C address bit 0 GND: '0', VDDIO: '1'.  
BME280 I2C address: 1110110 (0x76)

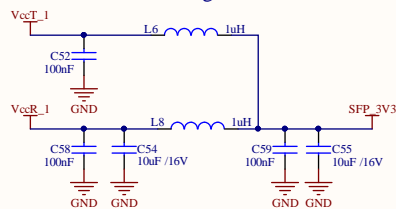
SFP1 GPIO config



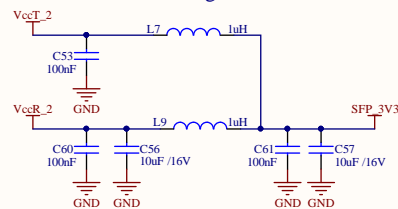
SFP2 GPIO config



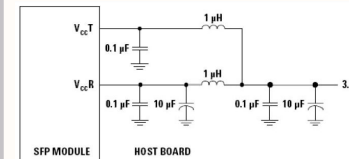
SFP1 Power filtering network



SFP2 Power filtering network



DESIGN NOTE:  
Note: Inductors with DC resistance of less than 1  $\Omega$  should be used in order to maintain the required voltage at the SFP input pin at 3.3V. When the recommended supply filtering circuit is used, hot plugging of the SFP transceiver module will result in an inrush current of no more than 30 mA greater than the steady state value.





Layer	Name	Material	Thickness	Constant	Board Layer Stack
1	Top Overlay				
2	Top Solder	Solder Resist	0.40mil	3.5	
3	Component Side	Copper	1.57mil		
4	Dielectric 1	FR-4	9.45mil	4.6	
5	Ground Plane	Copper	1.38mil		
6	Dielectric 3	R-175M	15.75mil	4.6	
7	Power Plane	Copper	1.38mil		
8	Dielectric 4		10.00mil	4.2	
9	Solder Side	Copper	1.57mil		
10	Bottom Solder	Solder Resist	0.40mil	3.5	
11	Bottom Overlay				

