

Revision	Date	Author	Description
1	20/09/2022	M. Brevi	First Draft
2	11/05/2023	M. Brevi/ M. Gregis	- Reverse Battery connector pinout - Mounted J2 instead of J1. Updated J2 MPN. - Added inrush limit on GPS and Sensor board supplies - Updated SW1 MPN
3	07/07/2023	M. Brevi	Changed R108 and R109 to 100kohm



FAE

TECHNOLOGY

via C. Battisti 136, 24025, Gazzaniga (Bg), Italy

Mail: info@fae.technology Tel: +39 035738130

Project

CITY SCANNER

Board

CITY SCANNER EVO

Designer

M. Brevi

Project Code

2022-0630

Internal Code

<Database>

Data

Friday, July 07, 2023

Page name

00 - REVISION

Approved

Not approved

Customer

MIT

Code

-

Rev.

3

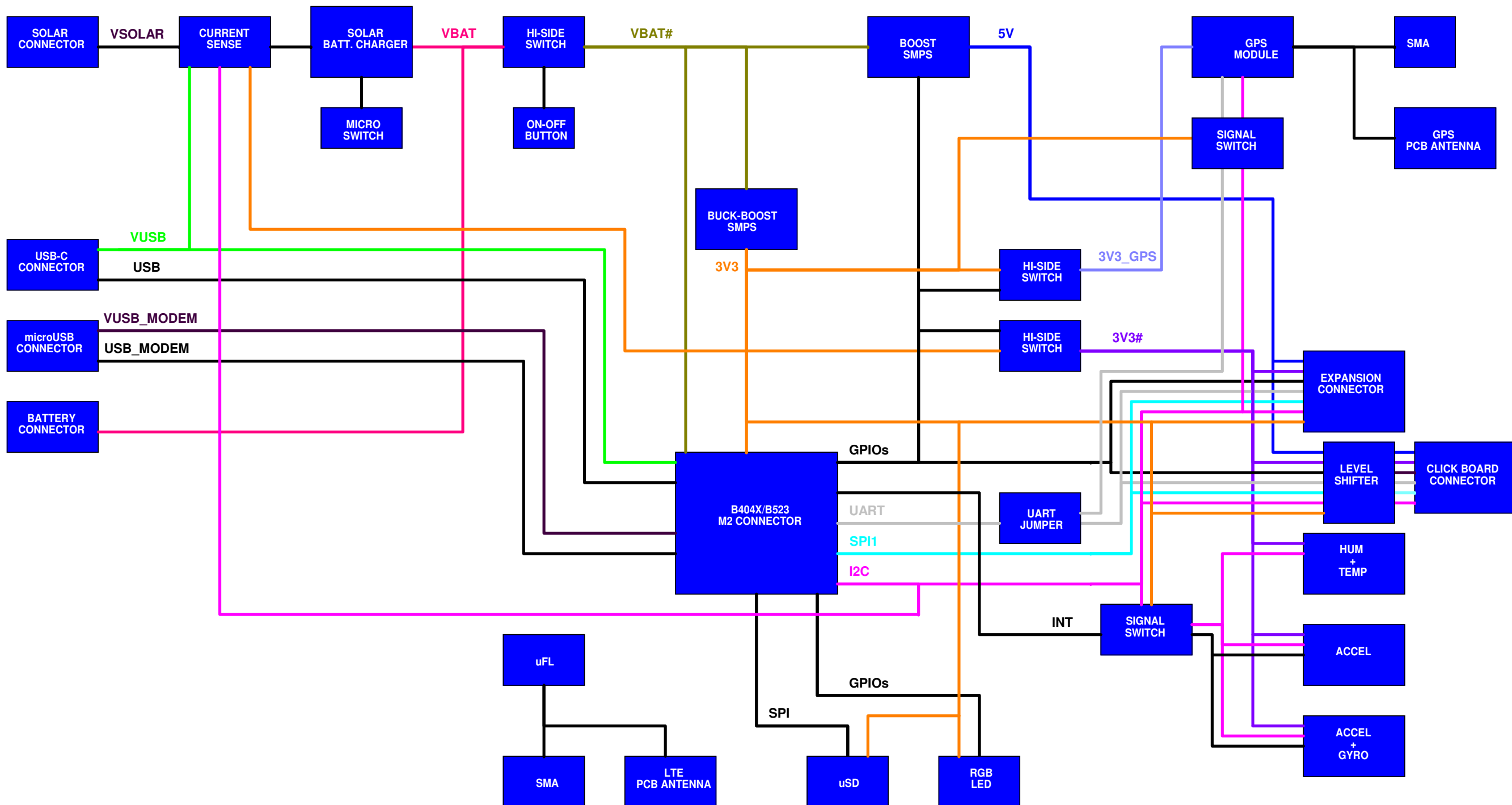
See Revision Page

Rev. changes

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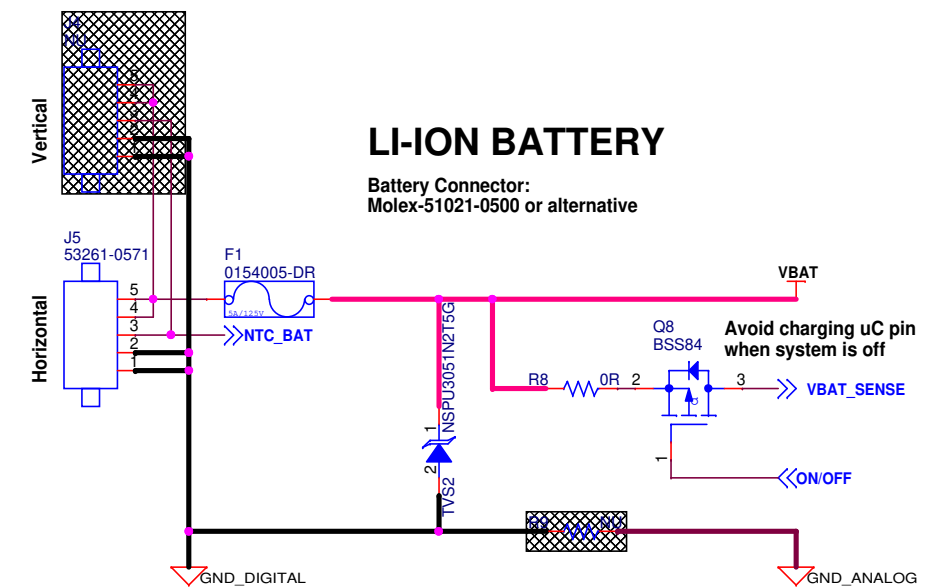
Optional elements are displayed with dotted lines

<div><div>F&E</div><div>TECHNOLOGY</div><div>via C. Battisti 136, 24025, Gazzaniga (Bg), Italy Mail: info@fae.technology Tel: +39 035738130</div></div>	Project CITY SCANNER		Page name	
	Board CITY SCANNER EVO		01 - BLOCK DIAGRAM	
	Designer M. Brevi		Approved Not approved	
	Project Code 2022-0630		Customer MIT	
	Internal Code <Database>		Code -	
Data Friday, July 07, 2023	Rev. 3	Rev. changes See Revision Page		Sheet 2 / 8
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SOLAR PANEL
(Voltaic P105)
Voc = 5.94V
Isc = 0.96A
Ip = 0.92A
Vp = 4.69V
Wp = 4.3W



Battery Connector:
Molex-51021-0500 or alternative



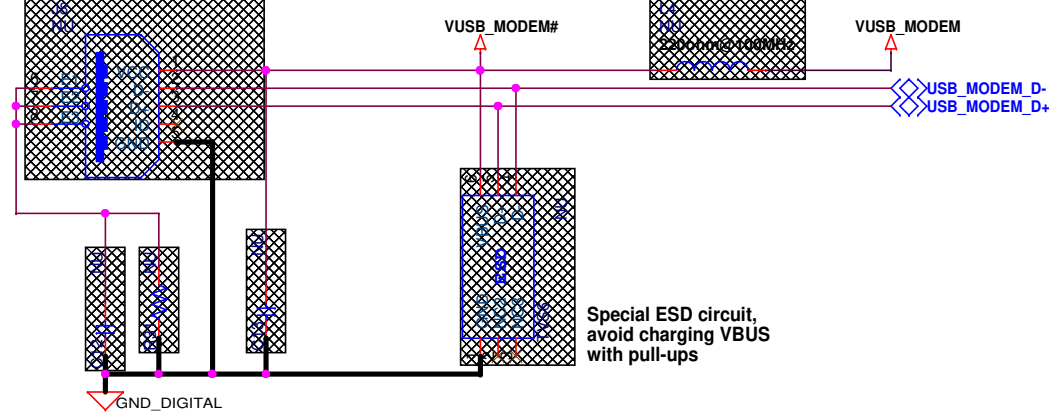
Page name	
	02 - POWER CONNECTORS
Approved	Not approved
Customer	MIT
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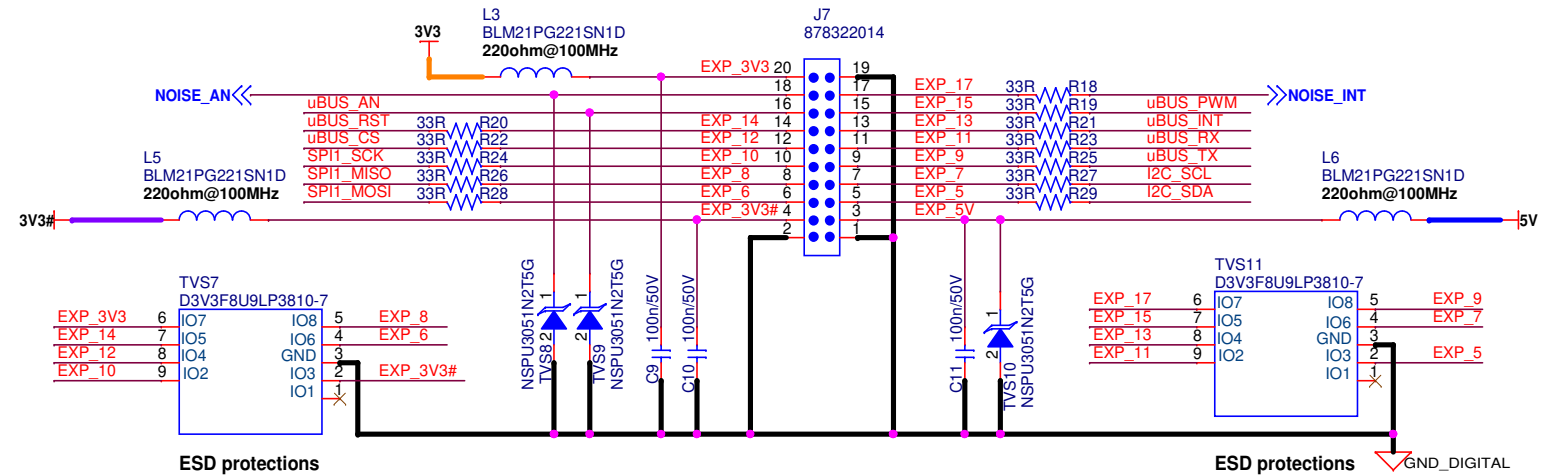
USB MICRO-B

the vbus on this interface IS NOT used as power supply
place all the components as close as possible to the USB connector



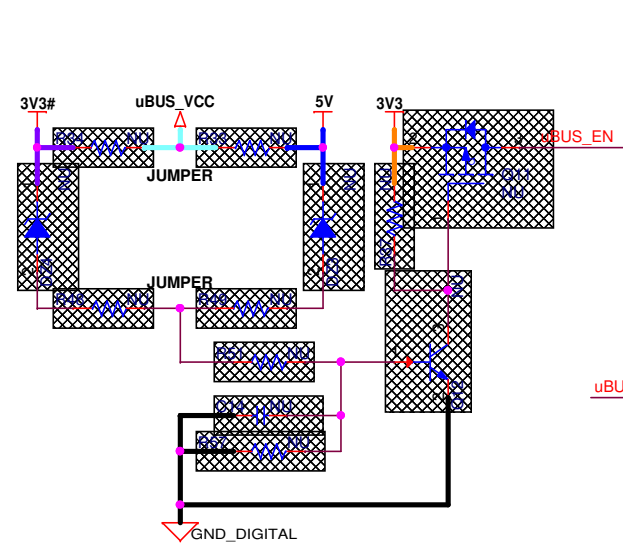
EXPANSION HEADER

The maximum voltage of all the signals must be <3.3V. If needed provide level shifters on the expansion board.

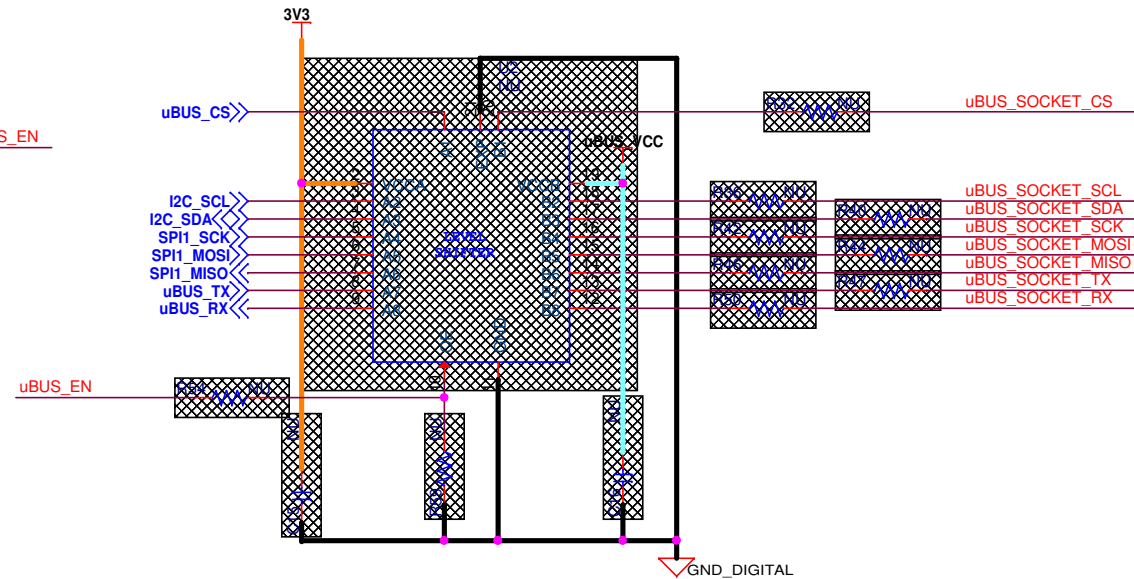


mikroBUS POWER SELECTION

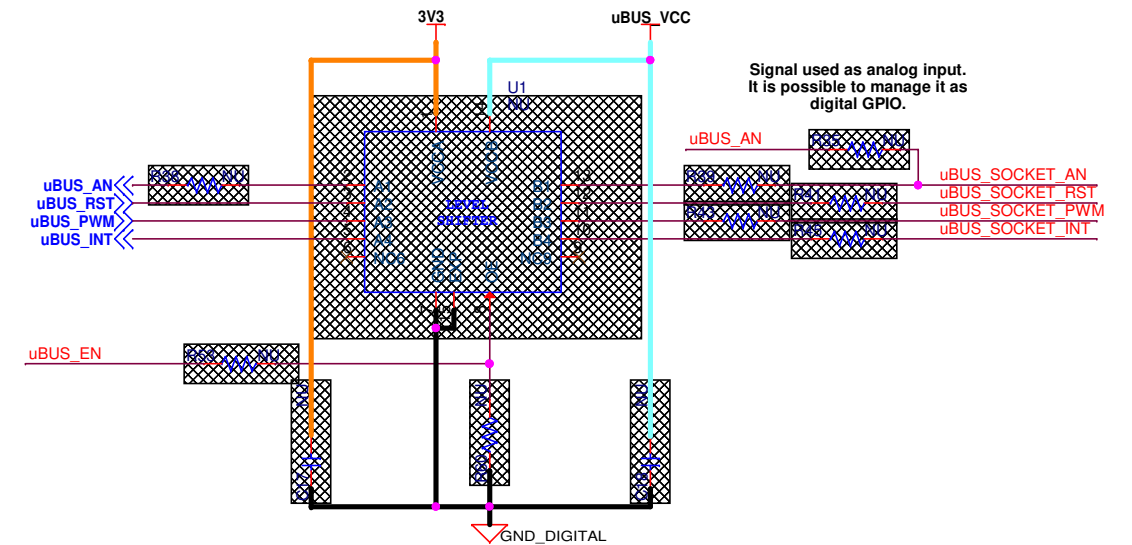
Choose the power supply of the click board connected to the mikroBUS socket



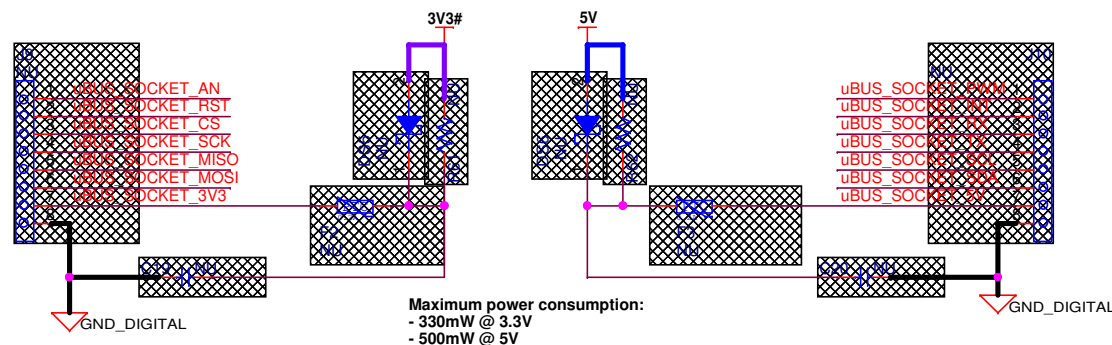
mikroBUS socket LEVEL SHIFTER



mikroBUS socket LEVEL SHIFTER



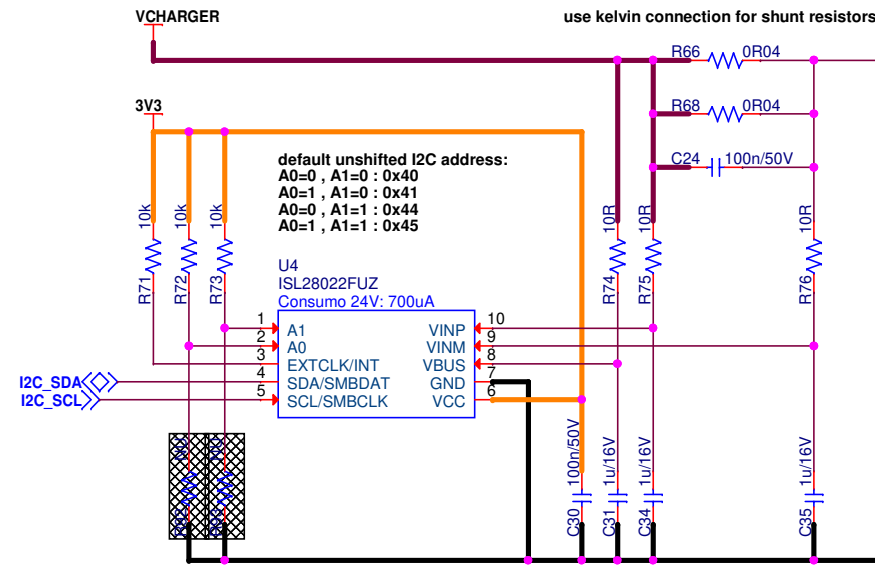
mikroBUS SOCKET



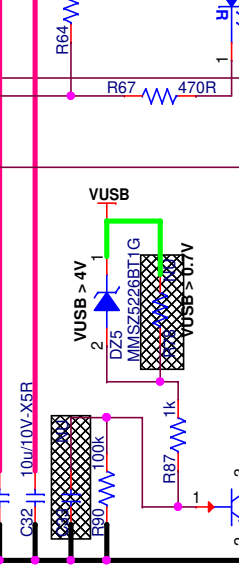
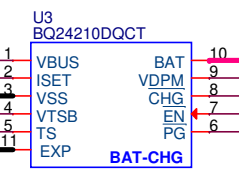
 via C. Battisti 136, 24025, Gazzaniga (Bg), Italy Mail: info@fae.technology Tel: +39 035738130	Project	CITY SCANNER	Page name
	Board	CITY SCANNER EVO	03 - INTERFACE CONNECTORS
	Designer	M. Brevi	Approved Not approved
	Project Code	2022-0630	Customer MIT
	Internal Code	-	Code -
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POWER MONITORING



BATTERY CHARGER

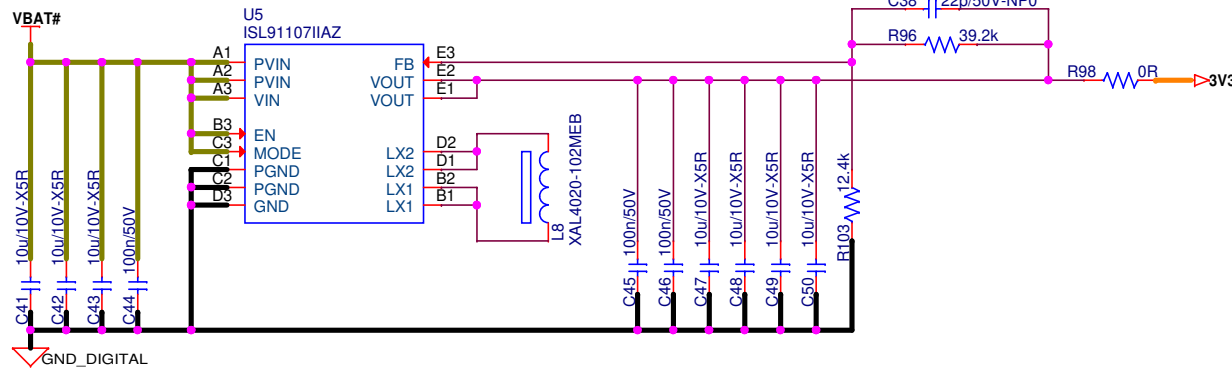


BUCK-BOOST SMPS

Vout = 3.3V

Maximum output current is 2A
Efficiency is about 90% worst case

Alternate part ISL91107IINZ-T
Fixed output @ 3.3V

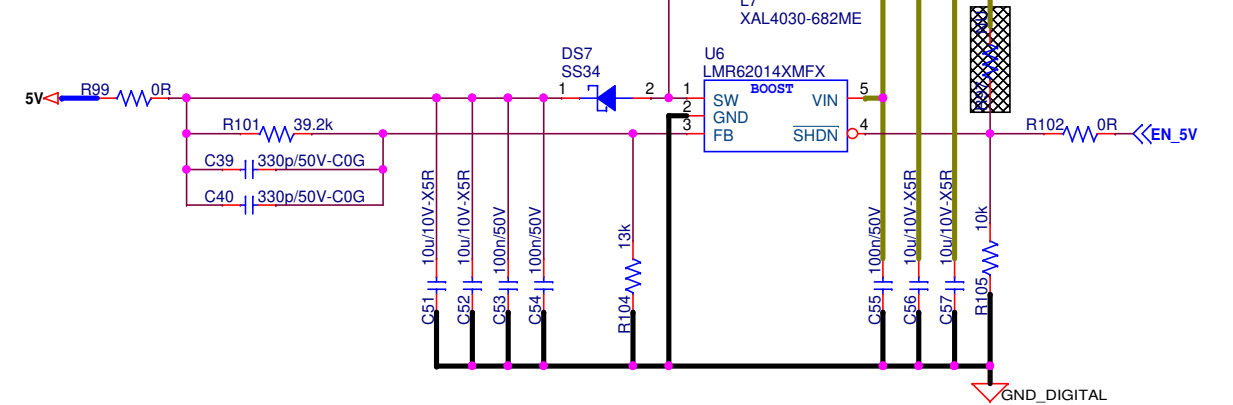


BOOST SMPS

Vout = 5V

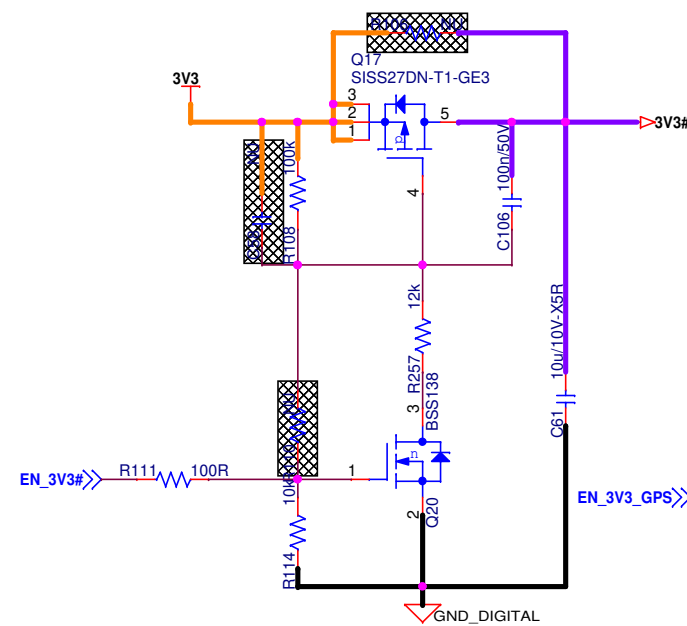
Maximum output current is 800mA
Efficiency is about 80% worst case

TPS61028DRCR for improving efficiency



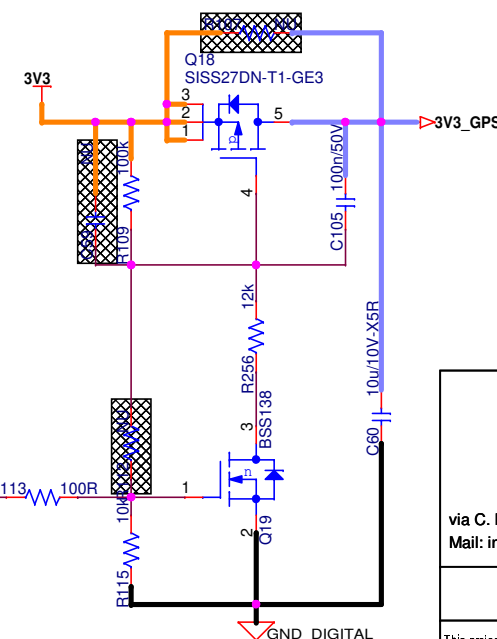
3.3V to sensor enable

bypass the enable circuit



3.3V to GPS enable

bypass the enable circuit



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Date
Friday, July 07, 2023

Project CITY SCANNER
Board CITY SCANNER EVO
Designer M. Brevi
Project Code 2022-0630
Internal Code -

Page name
04 - POWER
Approved Not approved
Customer MIT
Code -

Rev. 3
See Revision Page

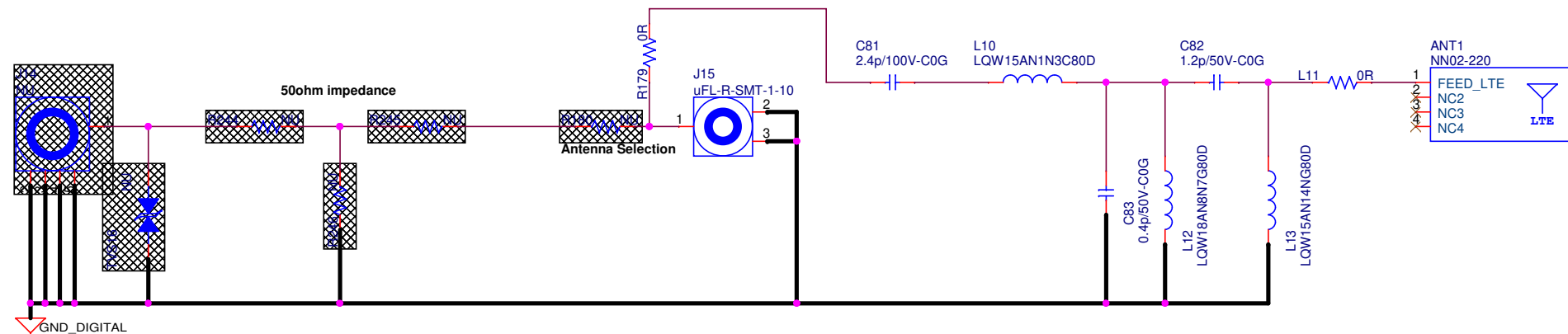
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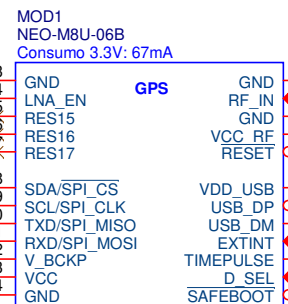
LTE ANTENNAS

Supported Bands:
B404x: 617 - 960 / 1710 - 2200
B523: 703 - 960 / 1710 - 2170 / 2500 - 2690

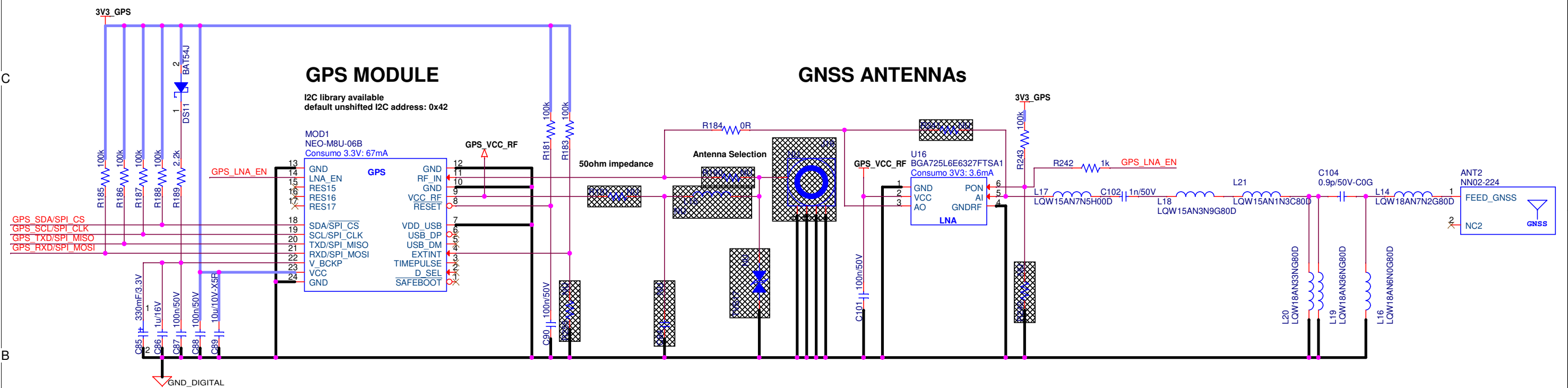


GPS MODULE

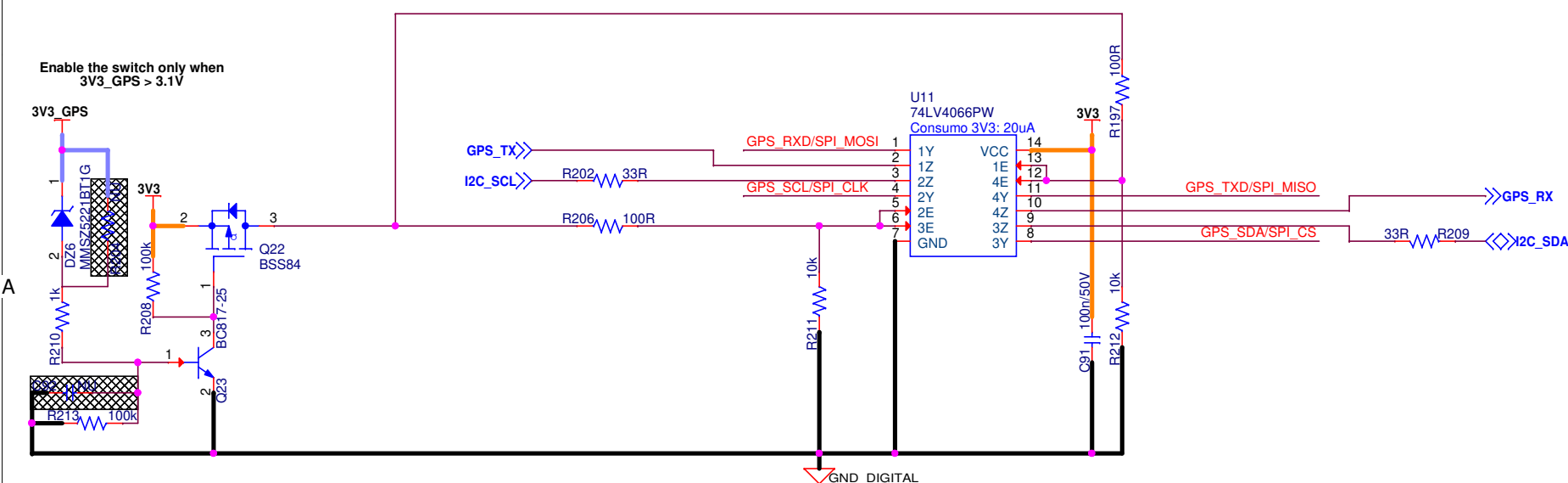
I2C library available
default unshifted I2C address: 0x42



GNSS ANTENNAS



SIGNAL SWITCH



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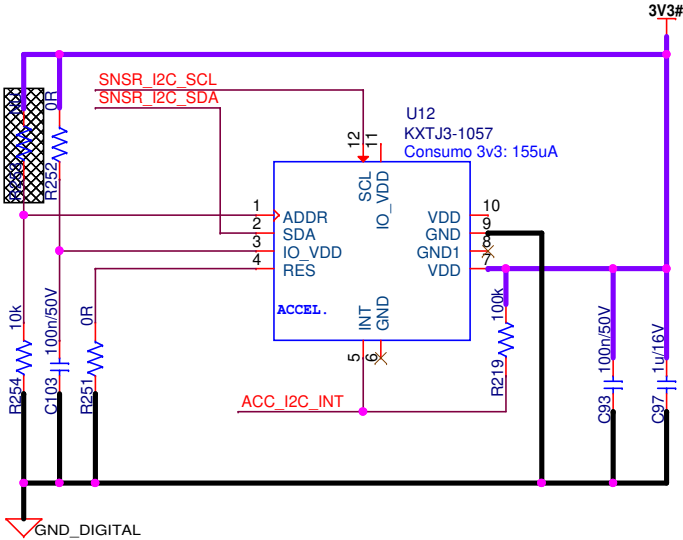
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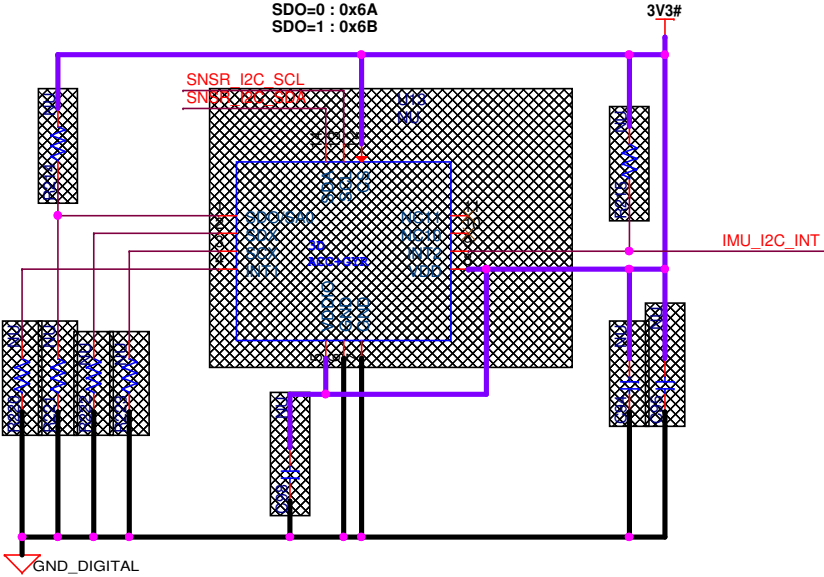
ACCELEROMETER

MXC6655XA
default unshifted I2C address: 0x15
KXTJ3-1057
default unshifted I2C address:
ADDR low: 0x0E
ADDR high: 0x0F



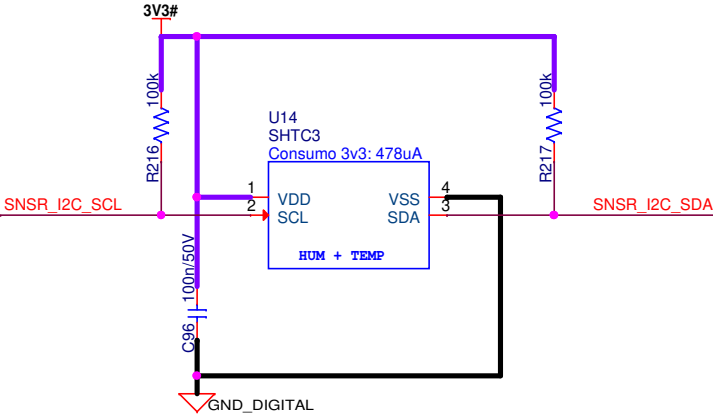
ACCELEROMETER
+
GYROSCOPE

default unshifted I2C address:
SDO=0 : 0x6A
SDO=1 : 0x6B

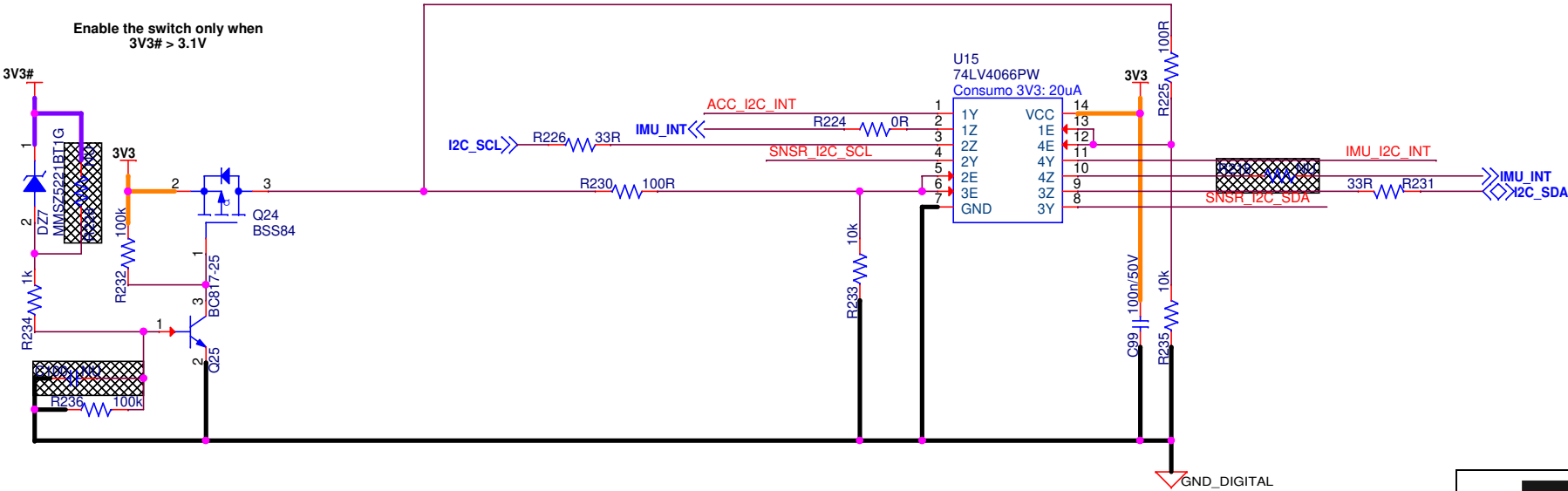


TEMPERATURE
+
HUMIDITY

default unshifted I2C address: 0x70



SIGNAL SWITCH



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Data
Friday, July 07, 2023

Project CITY SCANNER
Board CITY SCANNER EVO
Designer M. Brevi
Project Code 2022-0630
Internal Code -

Page name
07 - SENSORS
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