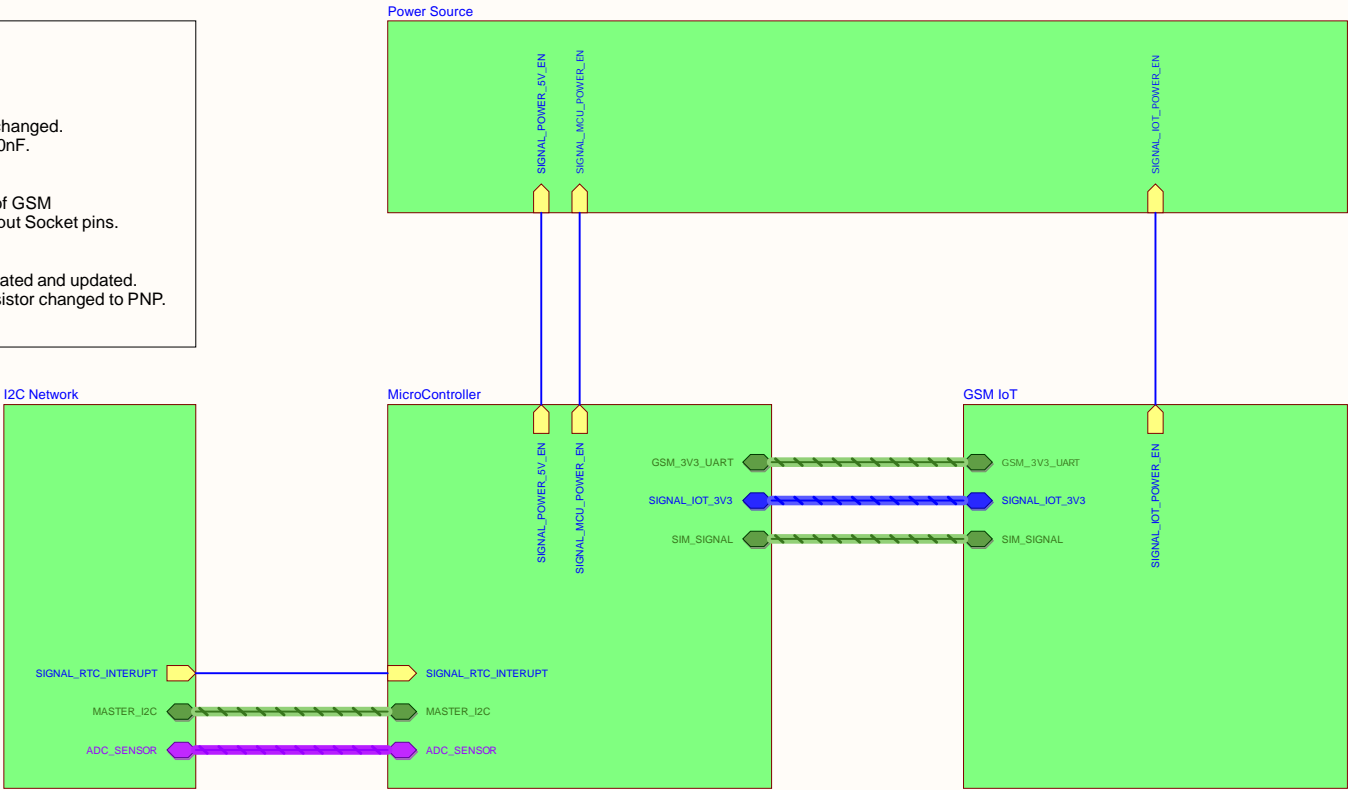



B100 - Master IoT MicroController

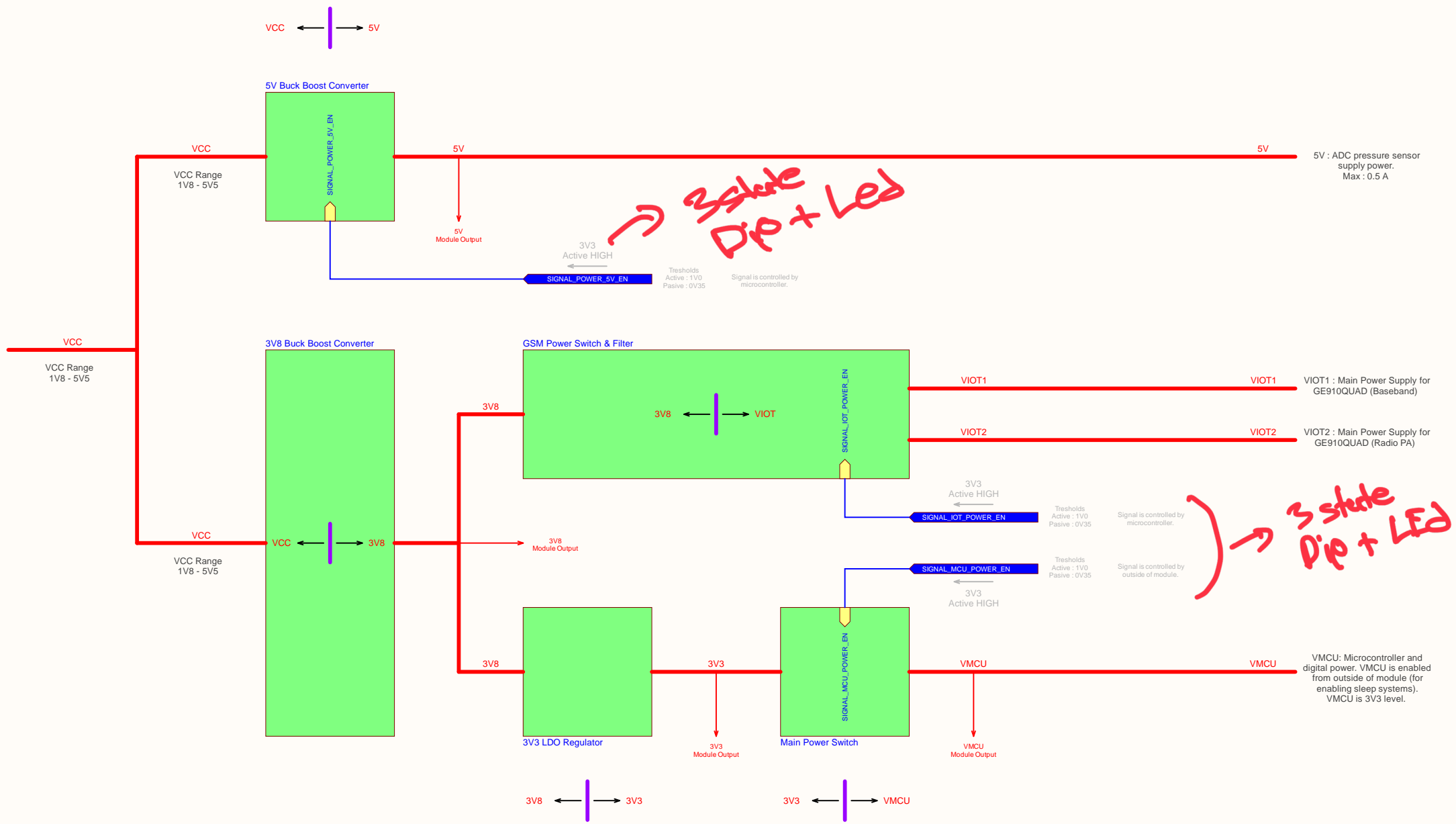
Revision History

- AA001 (05.01.2021)
* Schematic creation.
- AA002 (11.01.2021)
* Bidirectional signal translator IC changed.
* SIM Vcc capacitor changed to 100nF.
- AA003 (19.01.2021)
* 33 pF capacitor added to VAUX of GSM
* 33 pF capacitors added to all Output Socket pins.
- AA004 (22.01.2021)
* GSM IoT LED resistors are calculated and updated.
* GSM IoT LED power enable transistor changed to PNP.

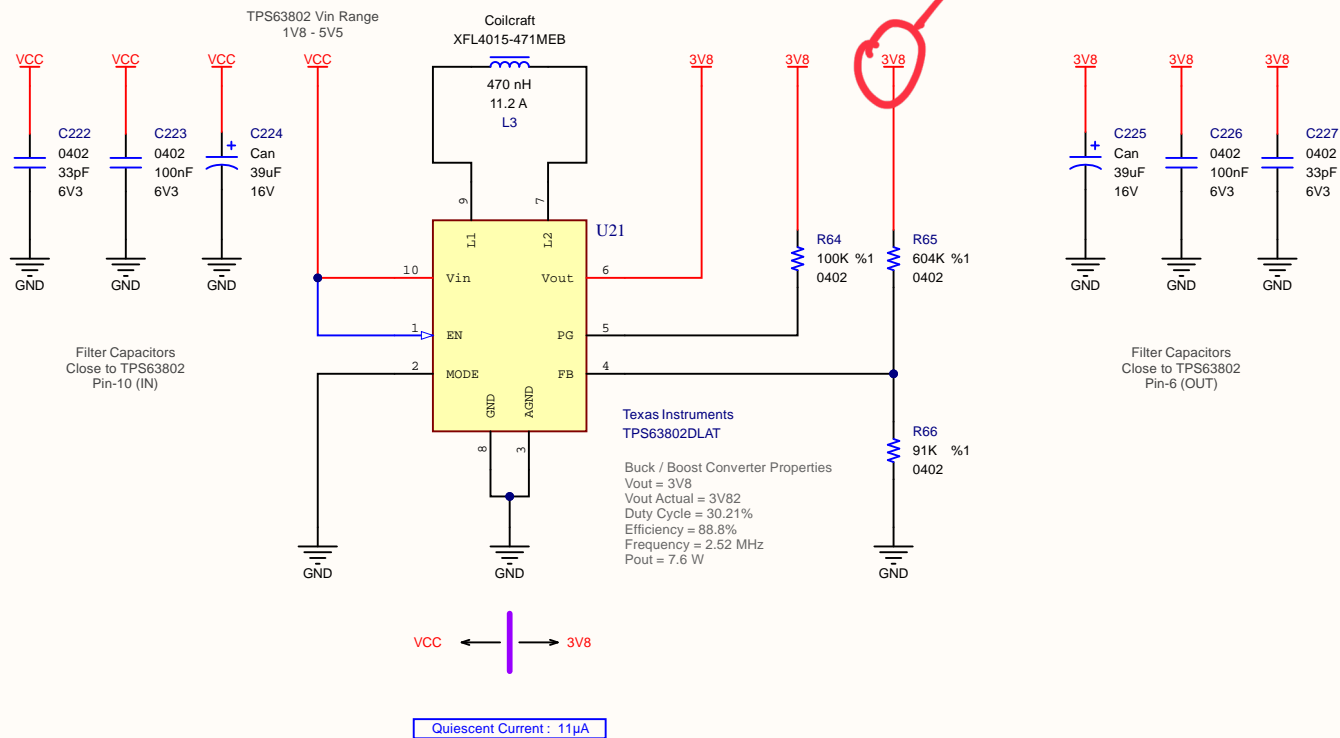



Title B100 Block Diagram			Ovoo Electronics Necip Fazıl Mah. Ortarmak Sok. Bırgölü Apt. No: 19/6 Meram / Konya Türkiye	
Size: A4	Number: 1	Revision: B100AA R4		
Date: 12.02.2021	Time: 15:07:57	Sheet 1 of 54		
File: C:\Altium Projects\B100\AA\Design Files\B100AA\Schematics\B100 Block Diagram.SchDoc				

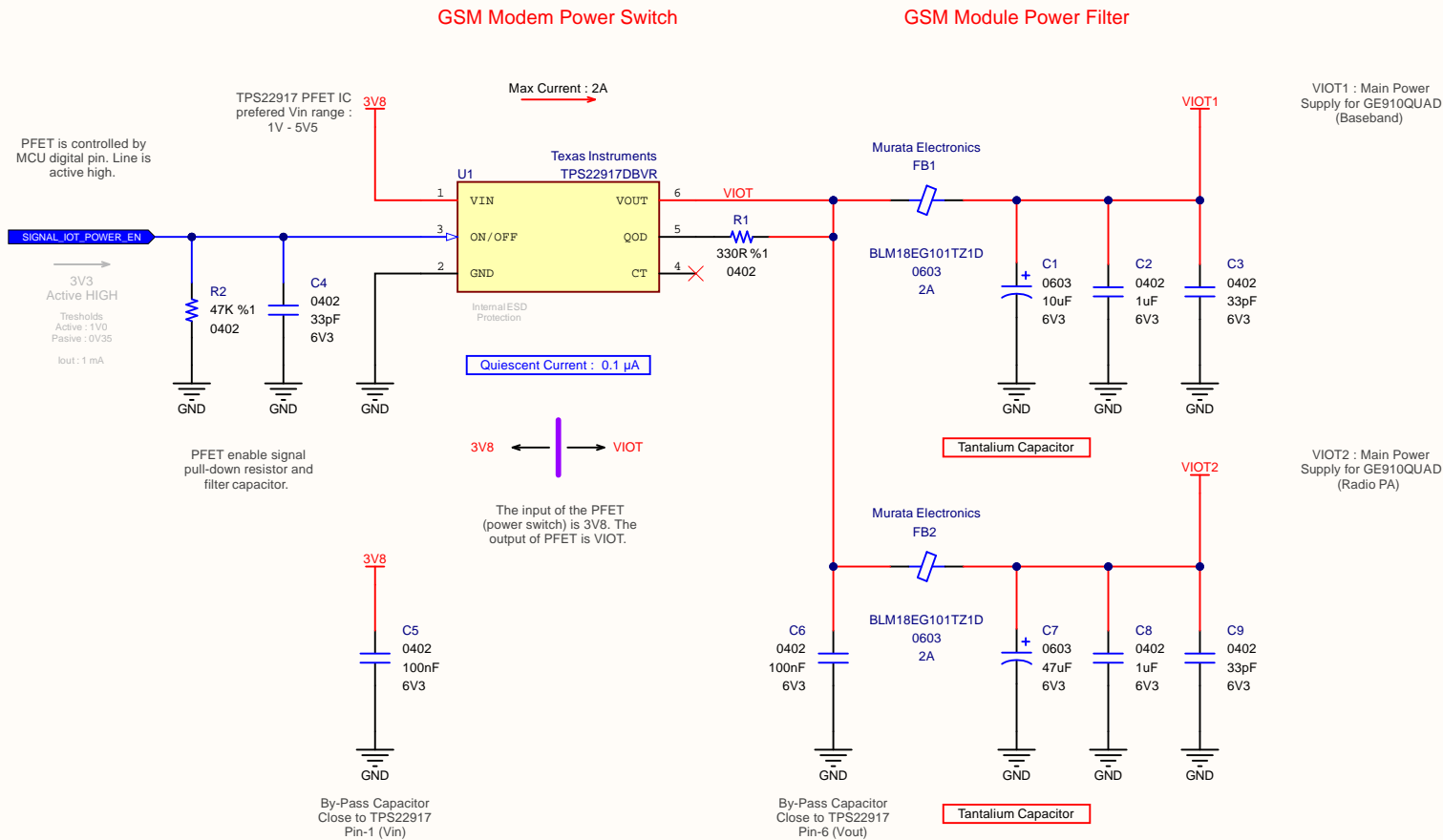
Power Archtechure




Pin out



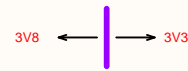
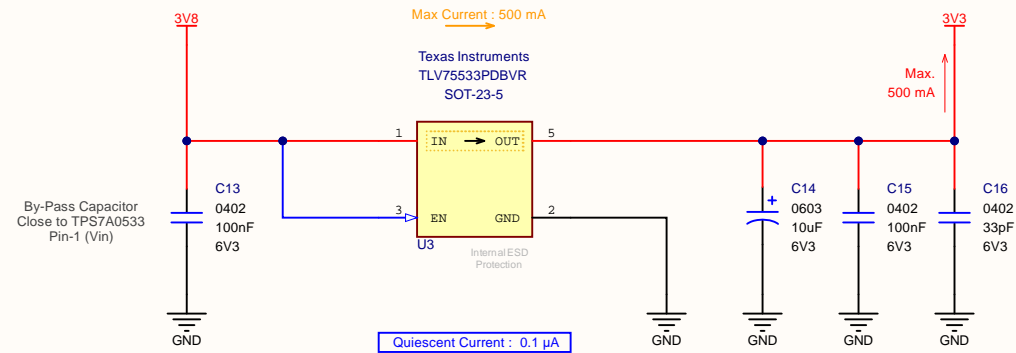
Title 3V8 DC/DC Buck Boost Converter			Ovoo Electronics Necip Fazıl Mah. Otaşmak Sok. Birgül Apt. No: 19/6 Meram / Konya Türkiye		
Size: A4	Number: 3	Revision: B100AA R4			
Date: 12.02.2021	Time: 15:07:57	Sheet 3 of 54			
File: C:\Altium Projects\B100\AA\Design Files\B100AA\Schematics\3V8 Buck Boost Converter.SchDoc					




Title GSM Power Switch and Filter			Ovoo Electronics			
Size: A4		Number: 4	Revision: B100AA R4			Necip Fazıl Mah, Ortarmak Sok. Bırgölü Apt. No: 19/6 Meram / Konya Türkiye
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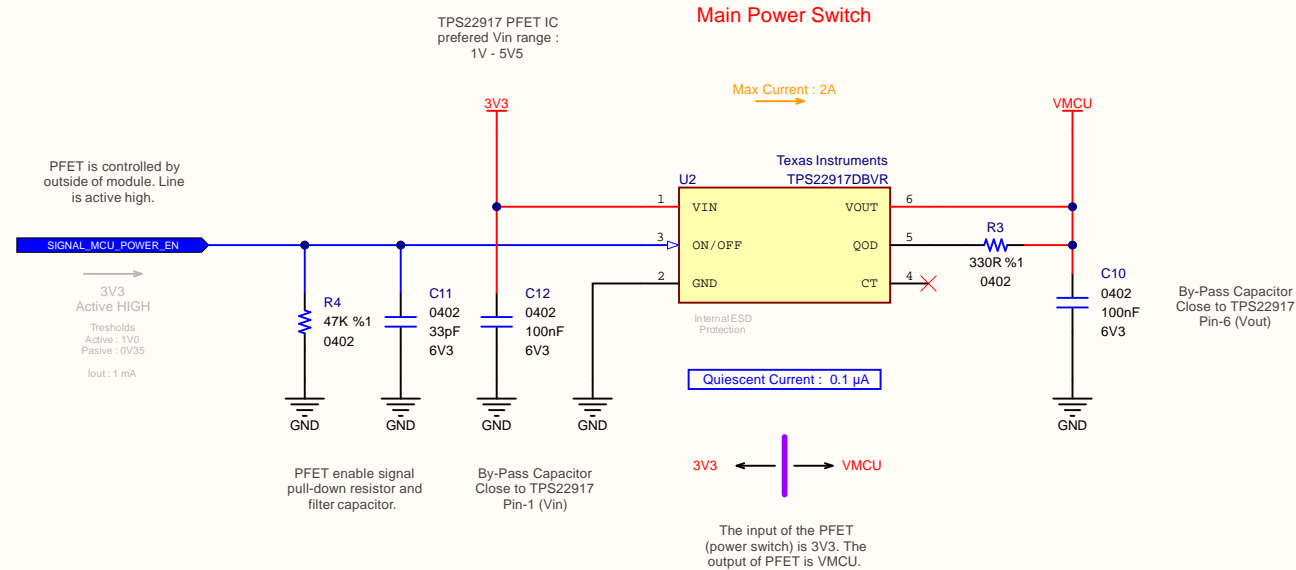



3V3 LDO Regulator



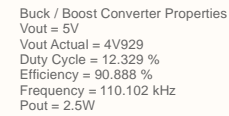
TLV75533 LDO is a 3V3 regulator. LDO is always enable.


Title 3V3 LDO Regulator			Ovoo Electronics		
			Necip Fazıl Mah. Ortarmak Sok. Bırgölü Apt. No: 19/6 Meram / Konya Türkiye		
Size: A4	Number: 5	Revision: B100AA R4			
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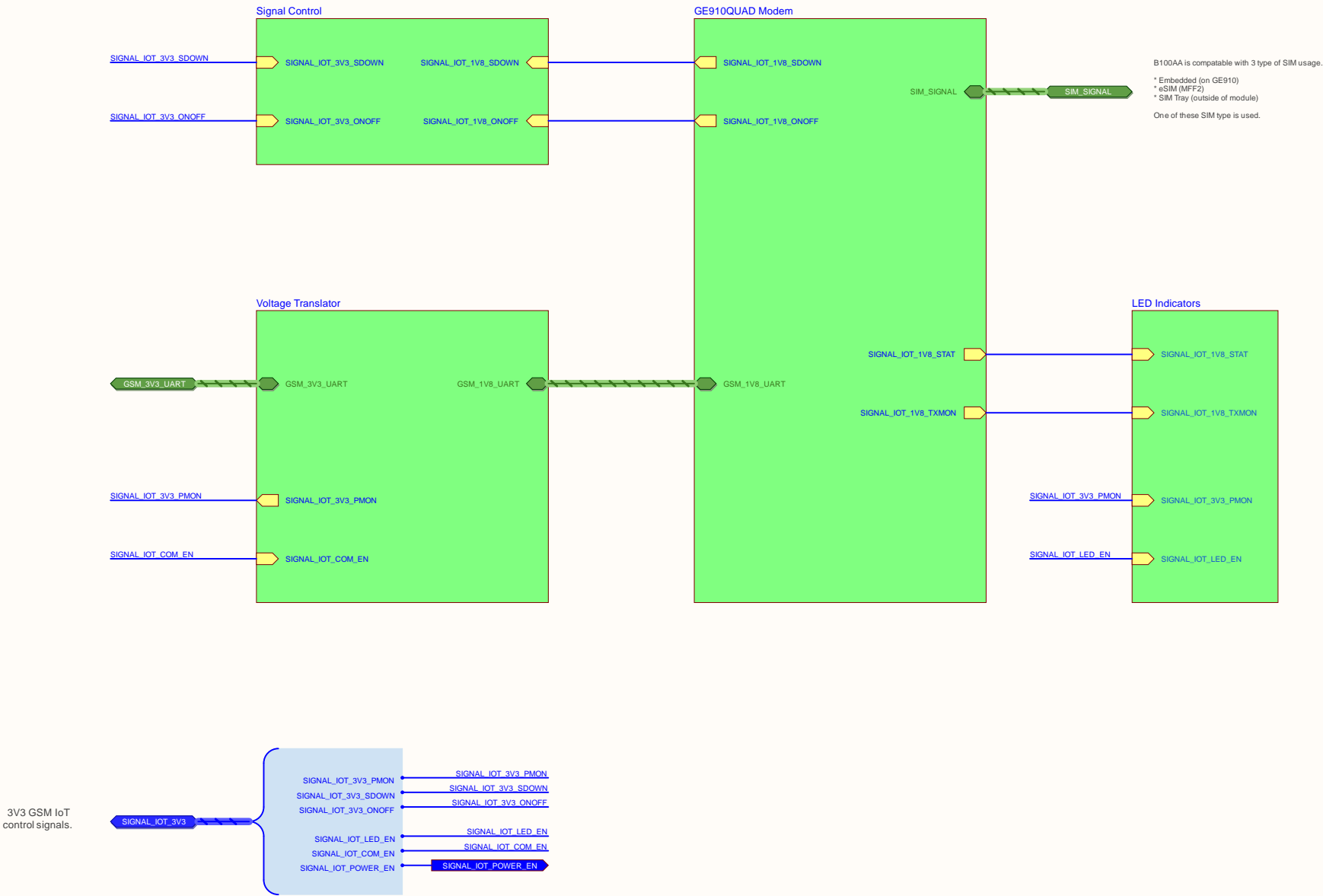
Title Main Power Switch			Ovoo Electronics Necip Fazıl Mah. Ortarmak Sok. Bırgölü Apt. No: 19/6 Meram / Konya Türkiye	
Size: A4	Number: 6	Revision: B100AA R4		
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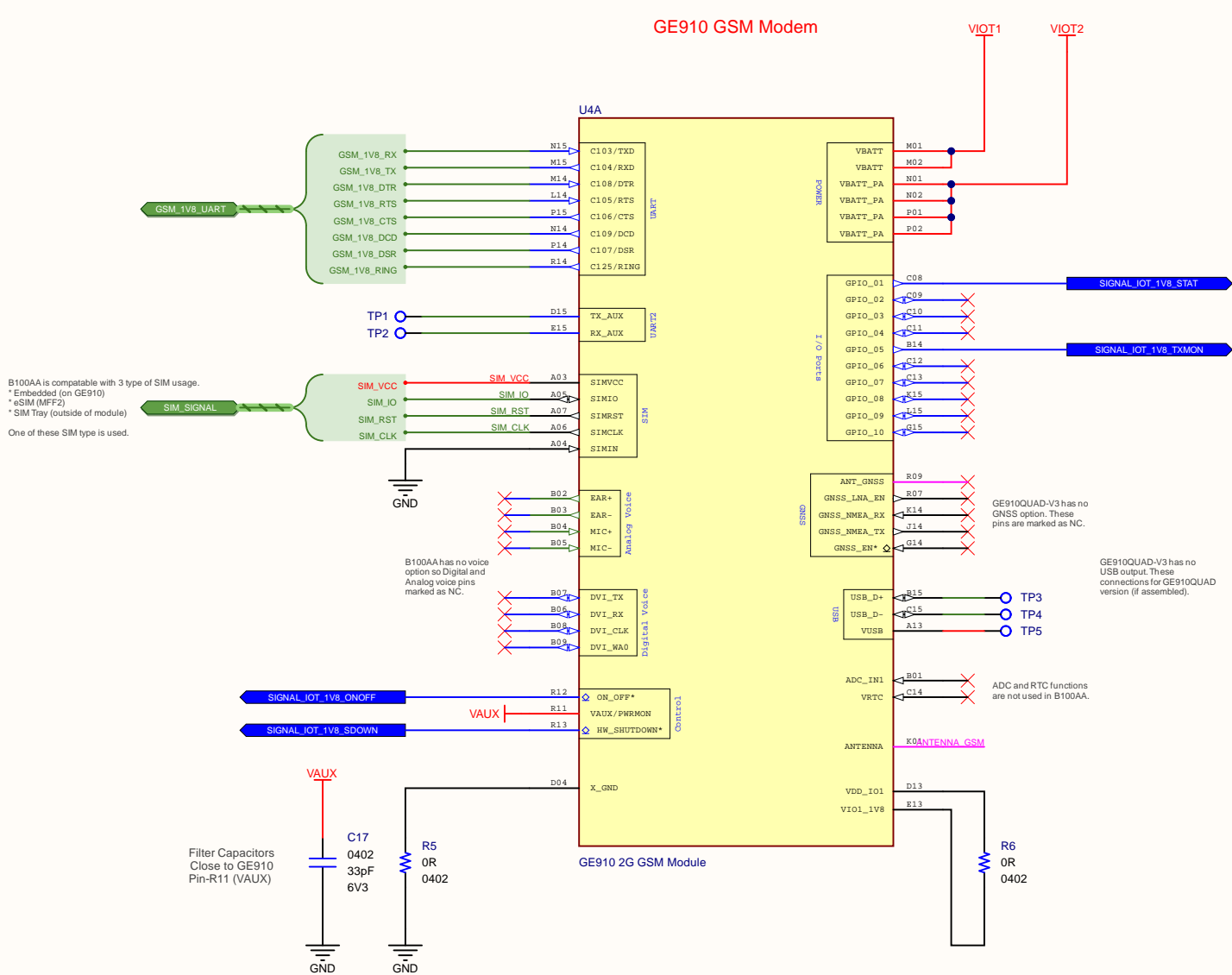
VCC ← | → 5V



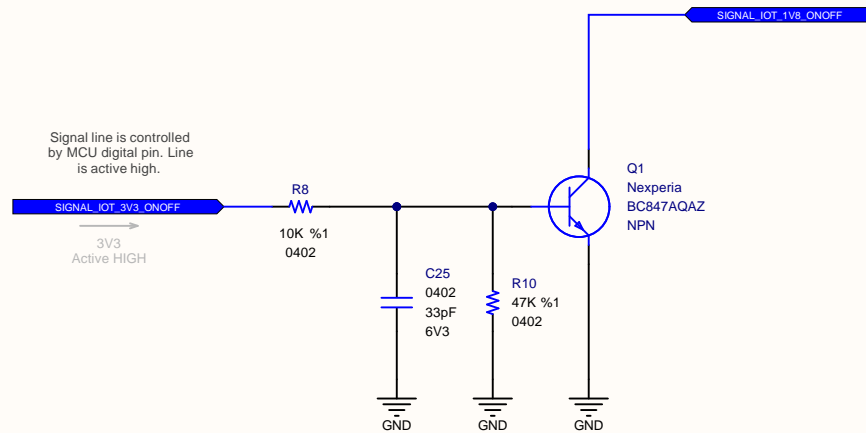
Title 5V DC/DC Buck Boost Converter			Ovoo Electronics Necip Fazıl Mah. Ofisarmak Sok. Bırgıl Apt. No: 19/B Meram / Konya Türkiye		
Date: A4	Number: 7	Revision: B100AA R4			
Date: 12.02.2021	Time: 15:07:57	Sheet 7 of 54			
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GSM IoT Communication Layer

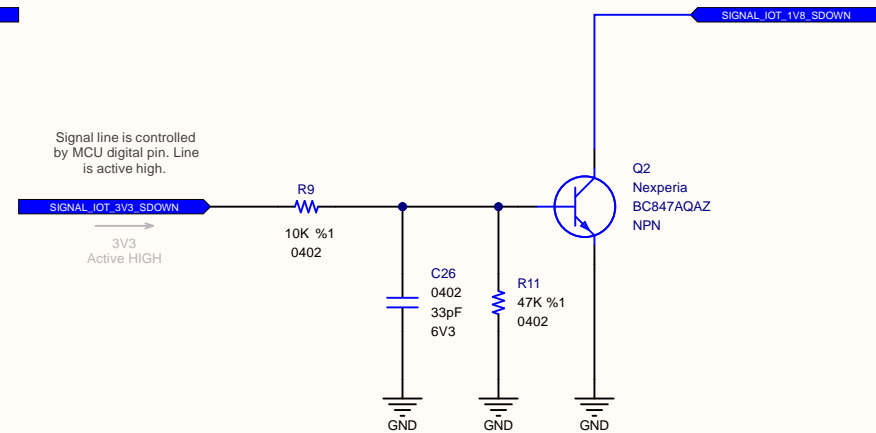




GSM Module On/Off Signal



GSM Module Shut Down Signal



Title GSM Control Signal Management

Size: A4

Number: 10

Revision: B100AA R4

Date: 12.02.2021

Time: 15:07:57

Sheet 10 of 54

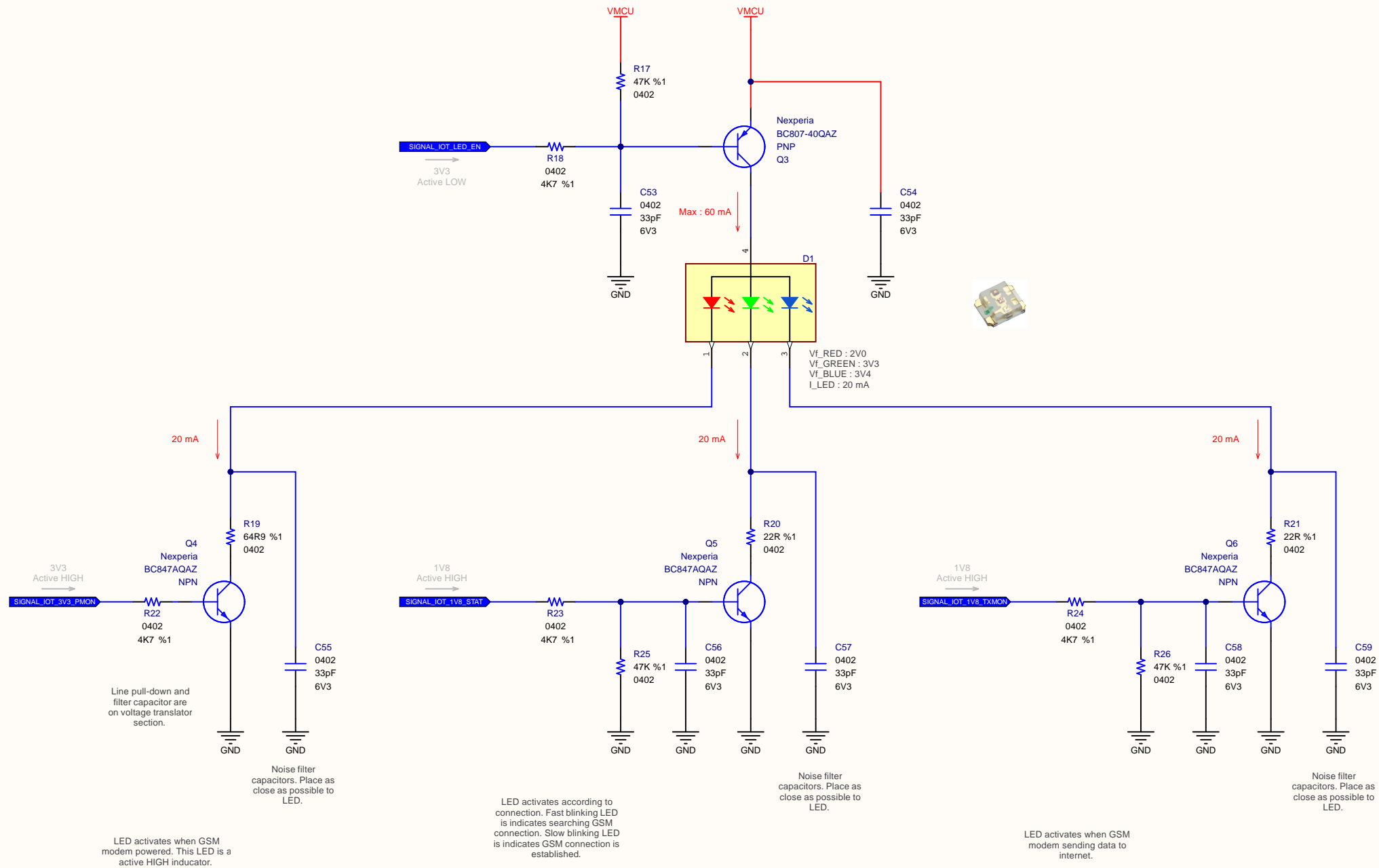
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Ovoo Electronics

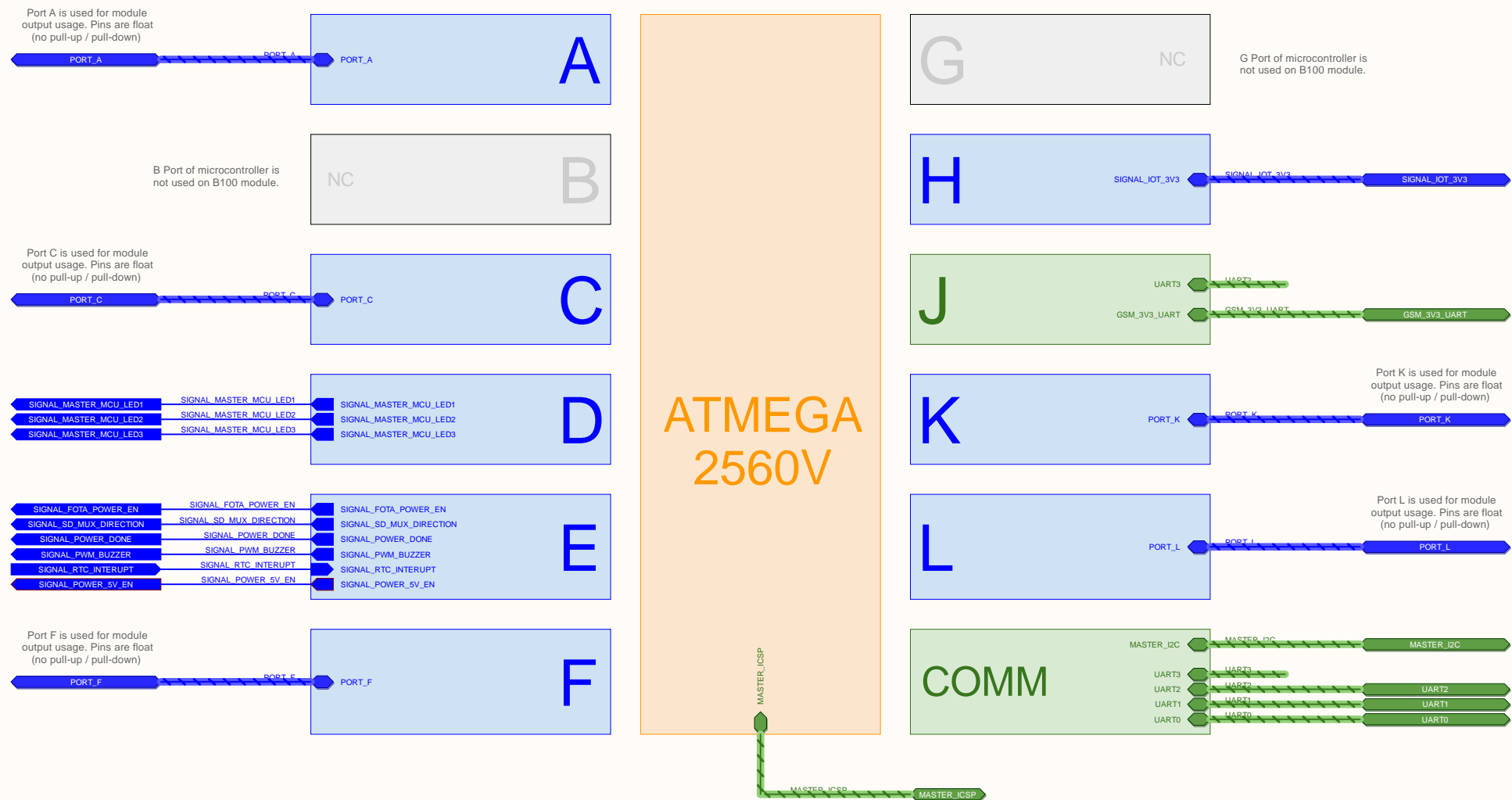
Necip Fazıl Mah. Ortarmak Sok.
Bırgölü Apt. No: 19/6
Meram / Konya
Türkiye

OVOO

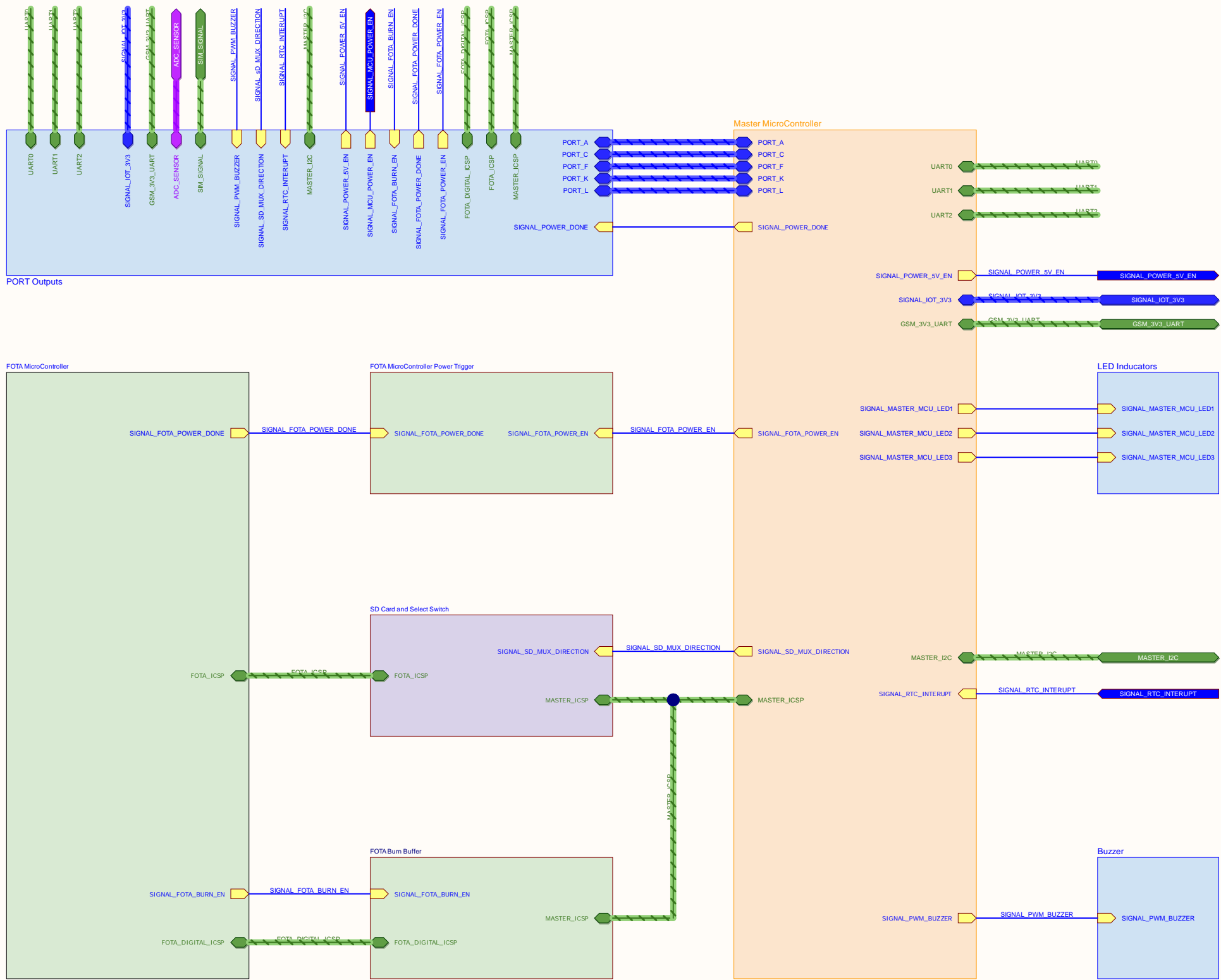
GSM IoT LED Indicators



Master MicroController

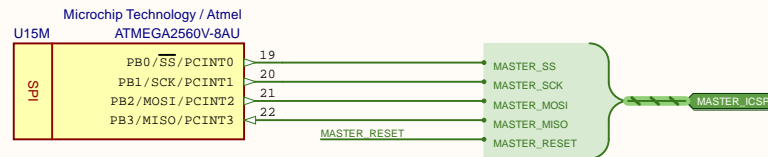
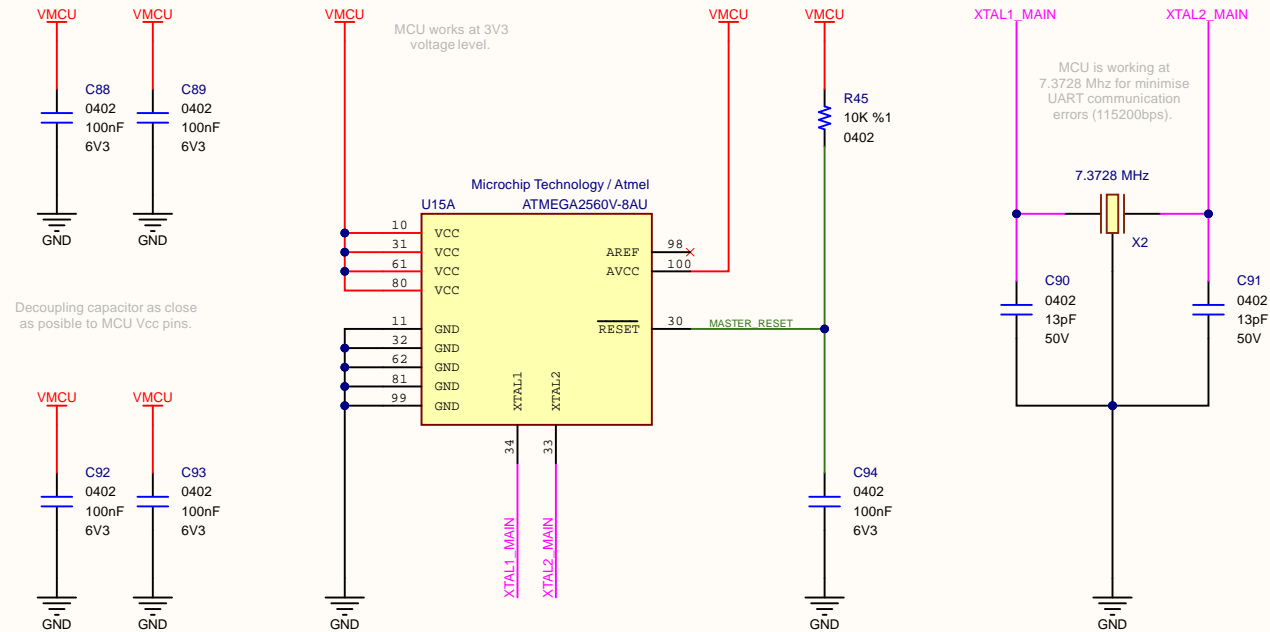


B100 MicroController




MicroController

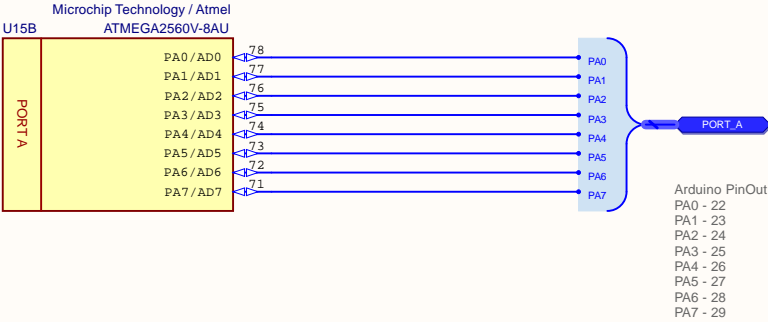
Crystal Oscillator

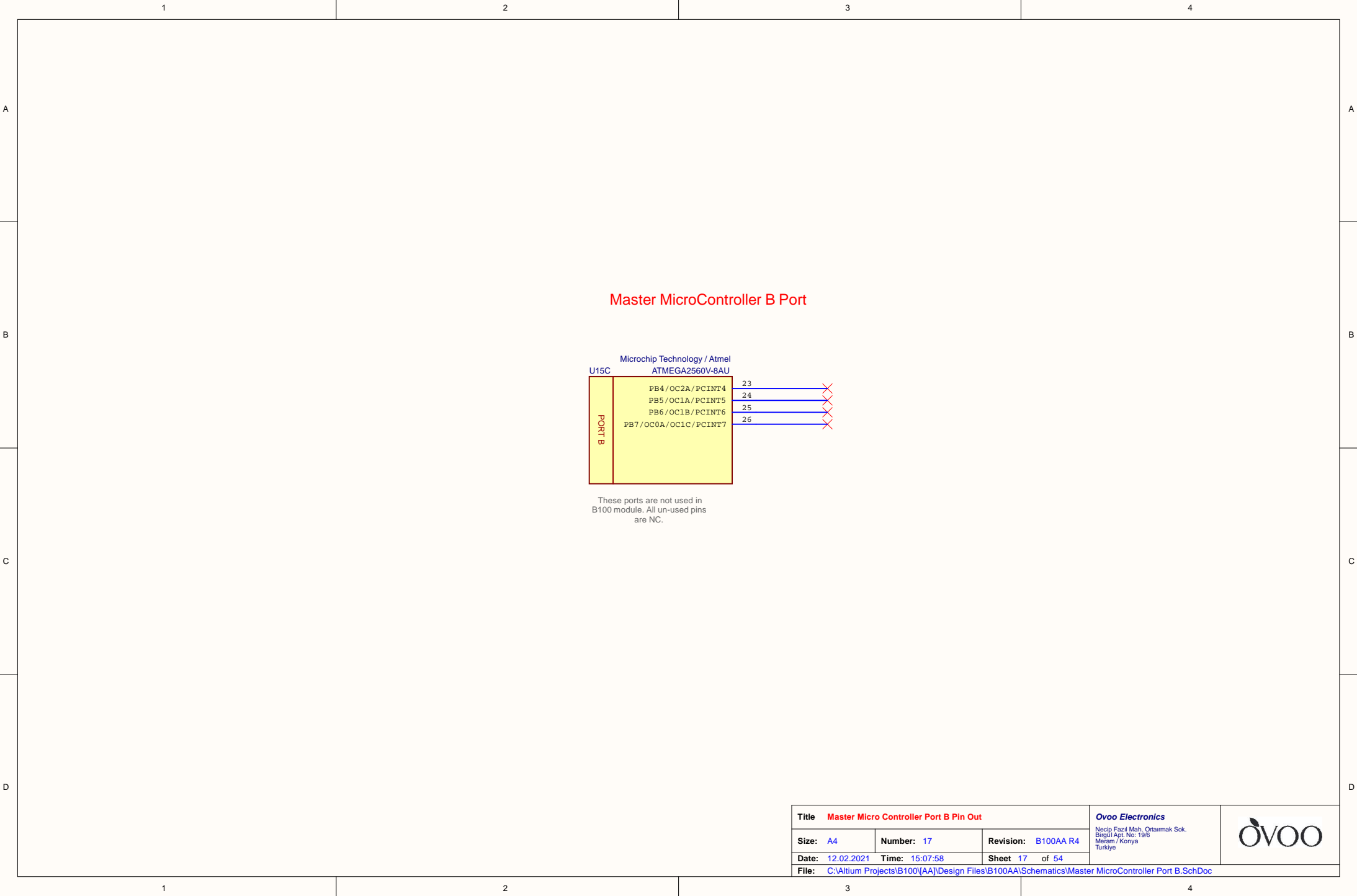


Master MicroController ICSP

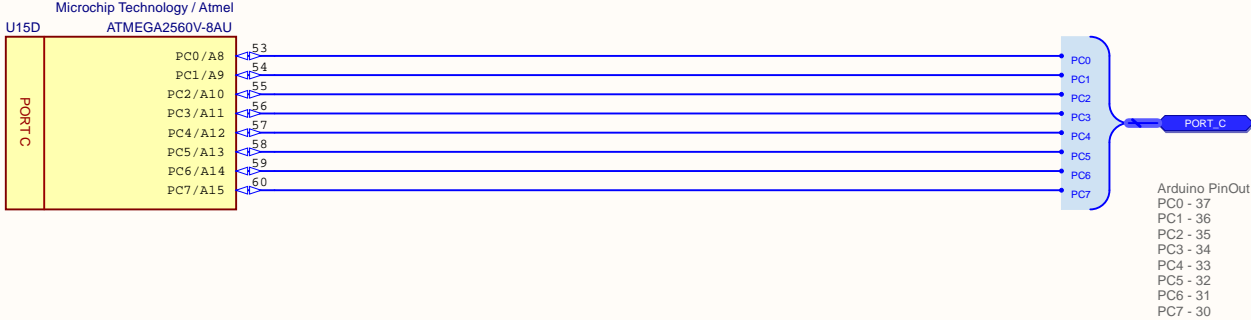
Title Master MicroController Core			<div>Ovoo Electronics</div> <div>Necip Fazıl Mah. Ortarmak Sok. Bırgölü Apt. No: 19/B Meram / Konya Türkiye</div> <div></div>
Size: A4	Number: 15	Revision: B100AA R4	
Date: 12.02.2021	Time: 15:07:58	Sheet 15 of 54	
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Master MicroController A Port

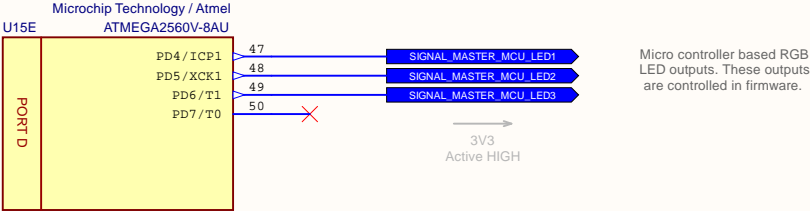





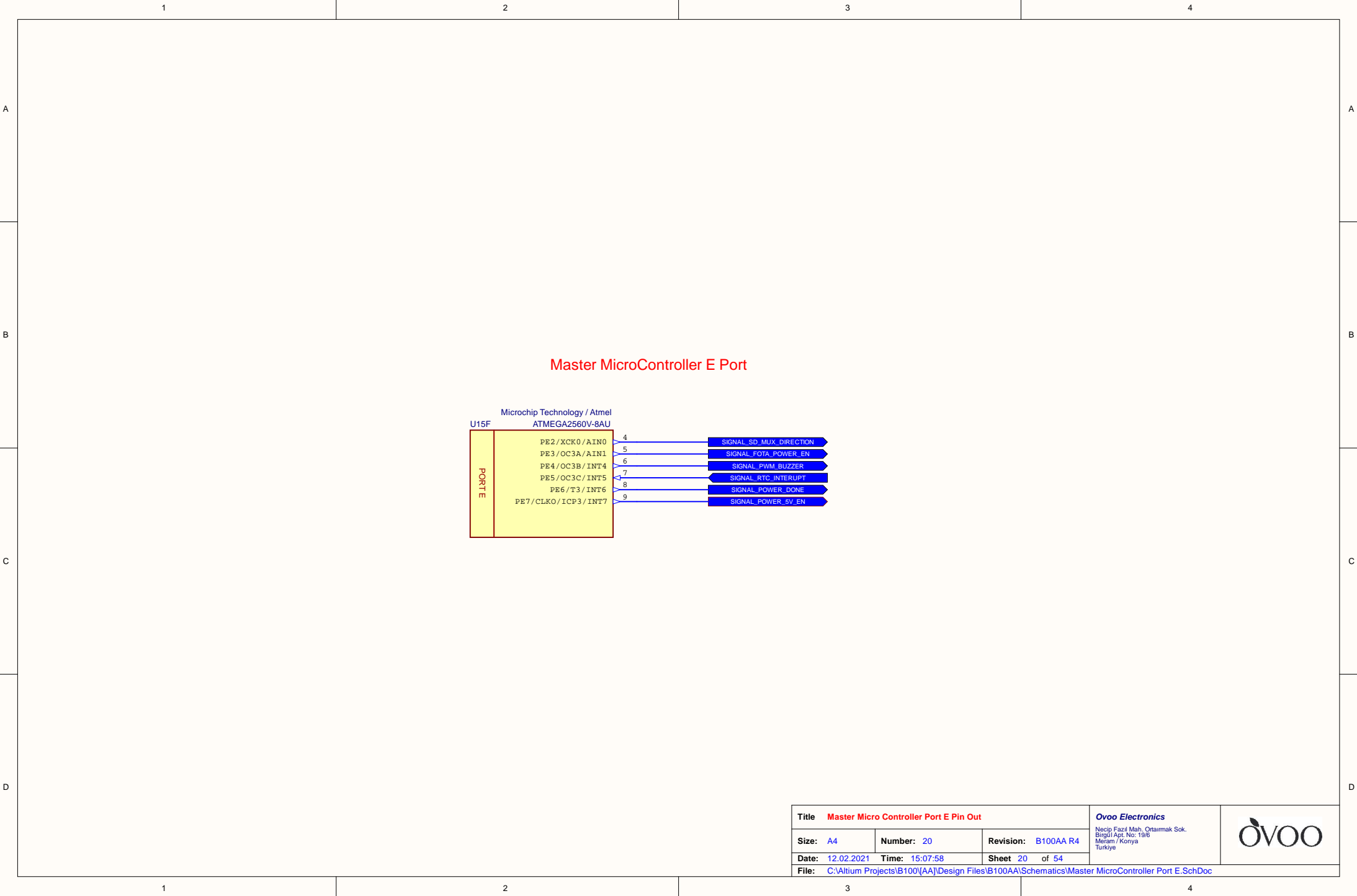
Master MicroController C Port



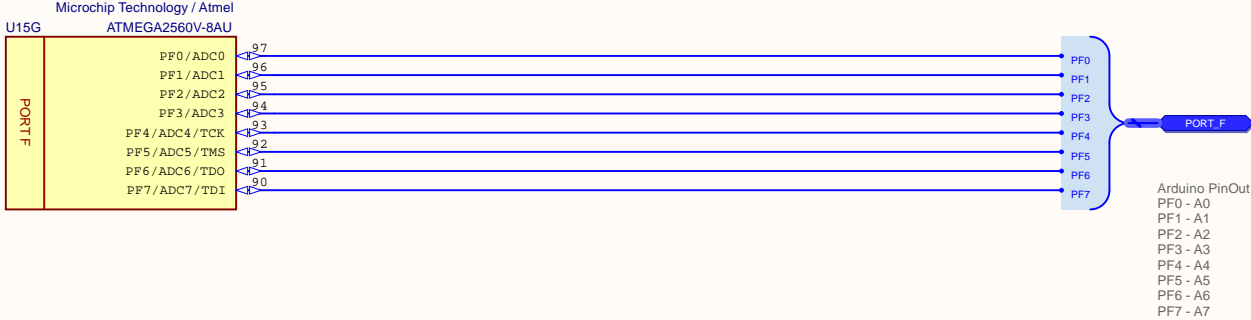
Master MicroController D Port




Title Master Micro Controller Port D Pin Out			Ovoo Electronics Necip Fazıl Mah. Ortairmak Sok. Bırgöl Apt. No: 19/6 Meram / Konya Türkiye	
Size: A4	Number: 19	Revision: B100AA R4		
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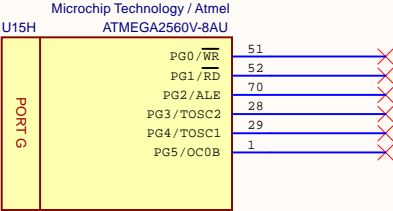


Master MicroController F Port




Title Master Micro Controller Port F Pin Out			Ovoo Electronics Necip Fazıl Mah. Ortarmak Sok. Bırgölü Apt. No: 19/6 Meram / Konya Türkiye	
Size: A4	Number: 21	Revision: B100AA R4		
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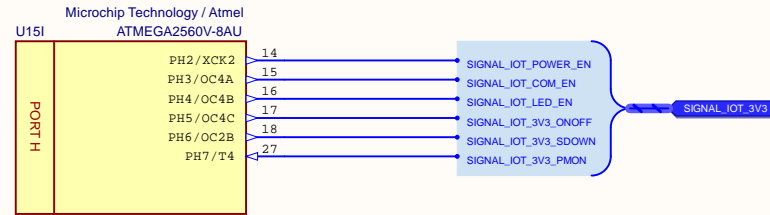
Master MicroController G Port




These ports are not used in B100 module. All un-used pins are NC.

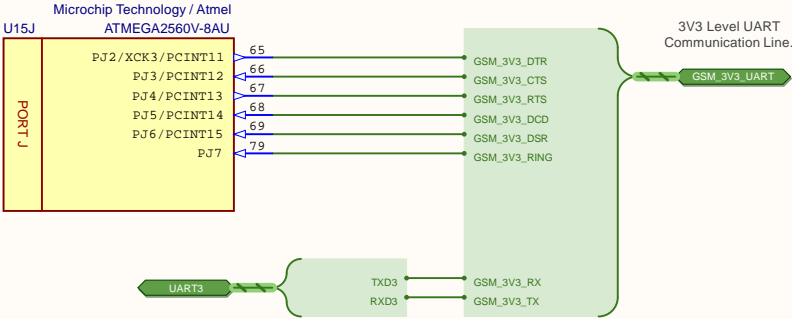
Title Master Micro Controller Port G Pin Out			Ovoo Electronics Necip Fazıl Mah. Ortarmak Sok. Bırgölü Apt. No: 19/6 Meram / Konya Türkiye	
Size: A4	Number: 22	Revision: B100AA R4		
Date: 12.02.2021	Time: 15:07:58	Sheet 22 of 54		
File: C:\Altium Projects\B100\AA\Design Files\B100AA\Schematics\Master MicroController Port G.SchDoc				


Master MicroController H Port



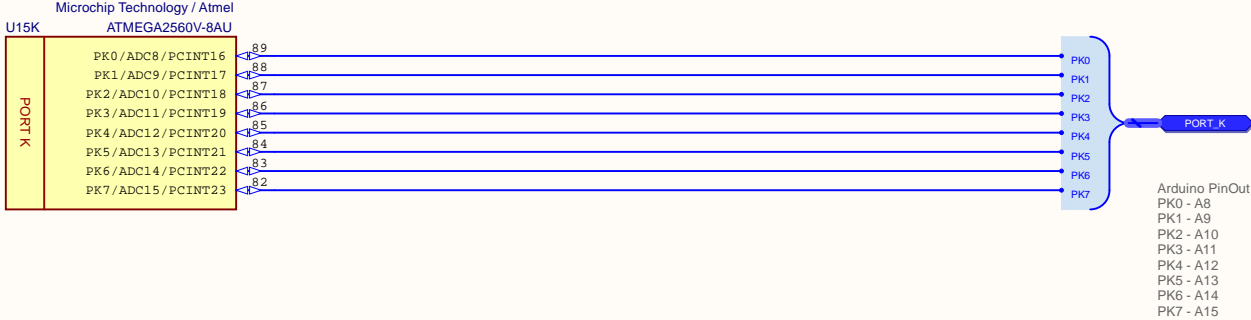
Title Master Micro Controller Port H Pin Out			Ovoo Electronics Necip Fazıl Mah. Ortarmak Sok. Bırgölü Apt. No: 19/6 Meram / Konya Türkiye	
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Date: 12.02.2021	Time: 15:07:58	Sheet 23 of 54		
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GSM IoT Communication Pins



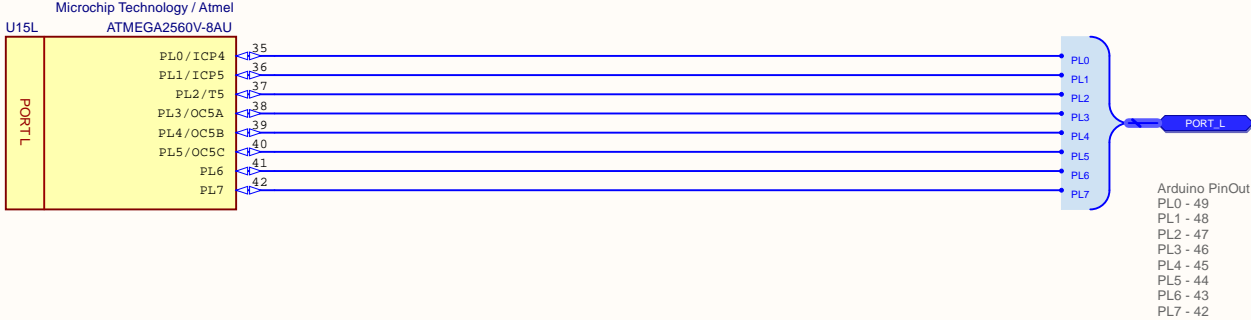
Title Master Micro Controller Port J Pin Out			Ovoo Electronics Necip Fazıl Mah, Ortairmak Sok. Bırgölü Apt. No: 19/6 Meram / Konya Türkiye	
Size: A4	Number: 24	Revision: B100AA R4		
Date: 12.02.2021	Time: 15:07:58	Sheet 24 of 54		
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Master MicroController K Port

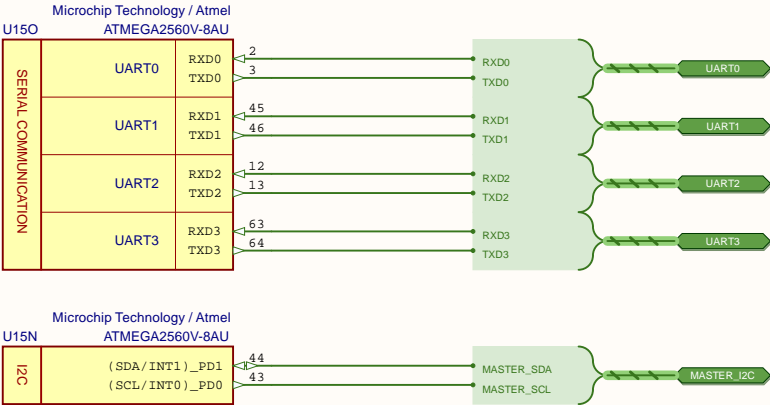


Title Master Micro Controller Port K Pin Out			Ovoo Electronics Necip Fazıl Mah. Ortarmak Sok. Bırgölü Apt. No: 19/6 Meram / Konya Türkiye	
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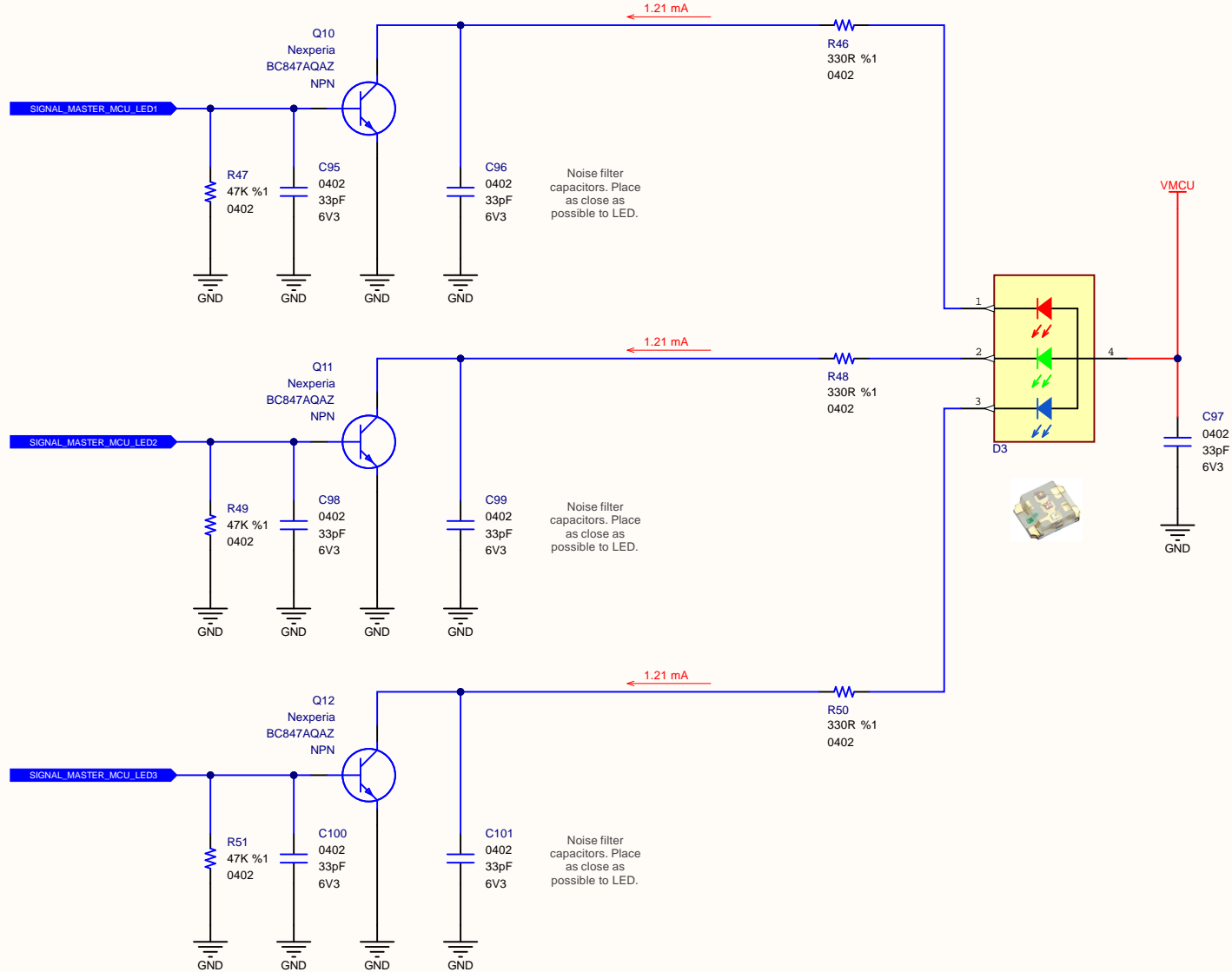
Master MicroController L Port




Communication Ports



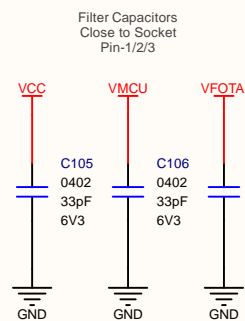
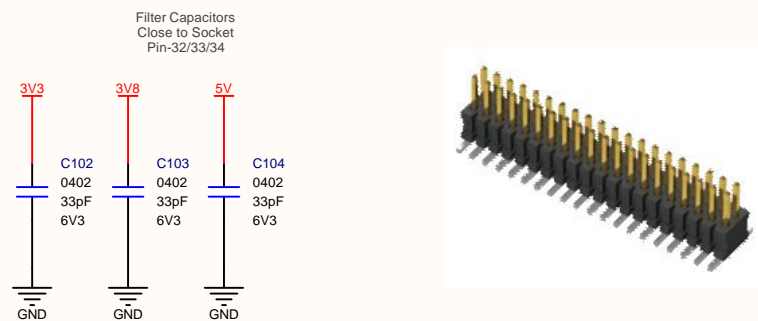
Main Microcontroller Status LED Indicators



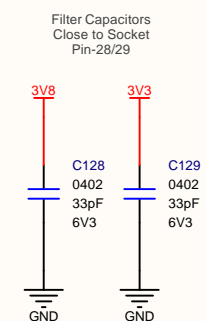
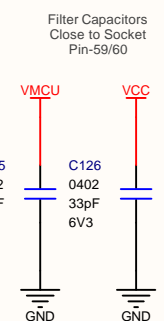
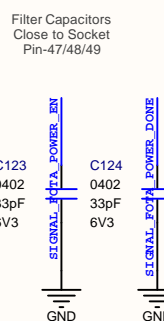
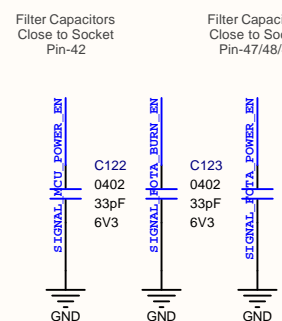
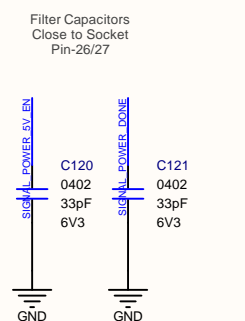
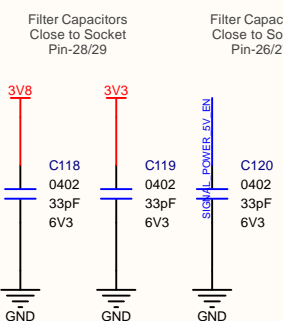
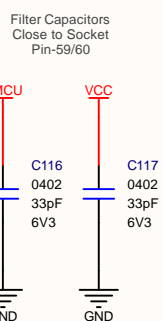
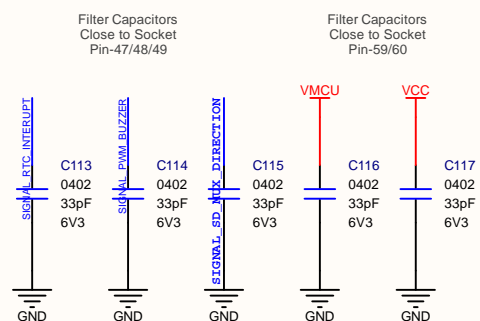
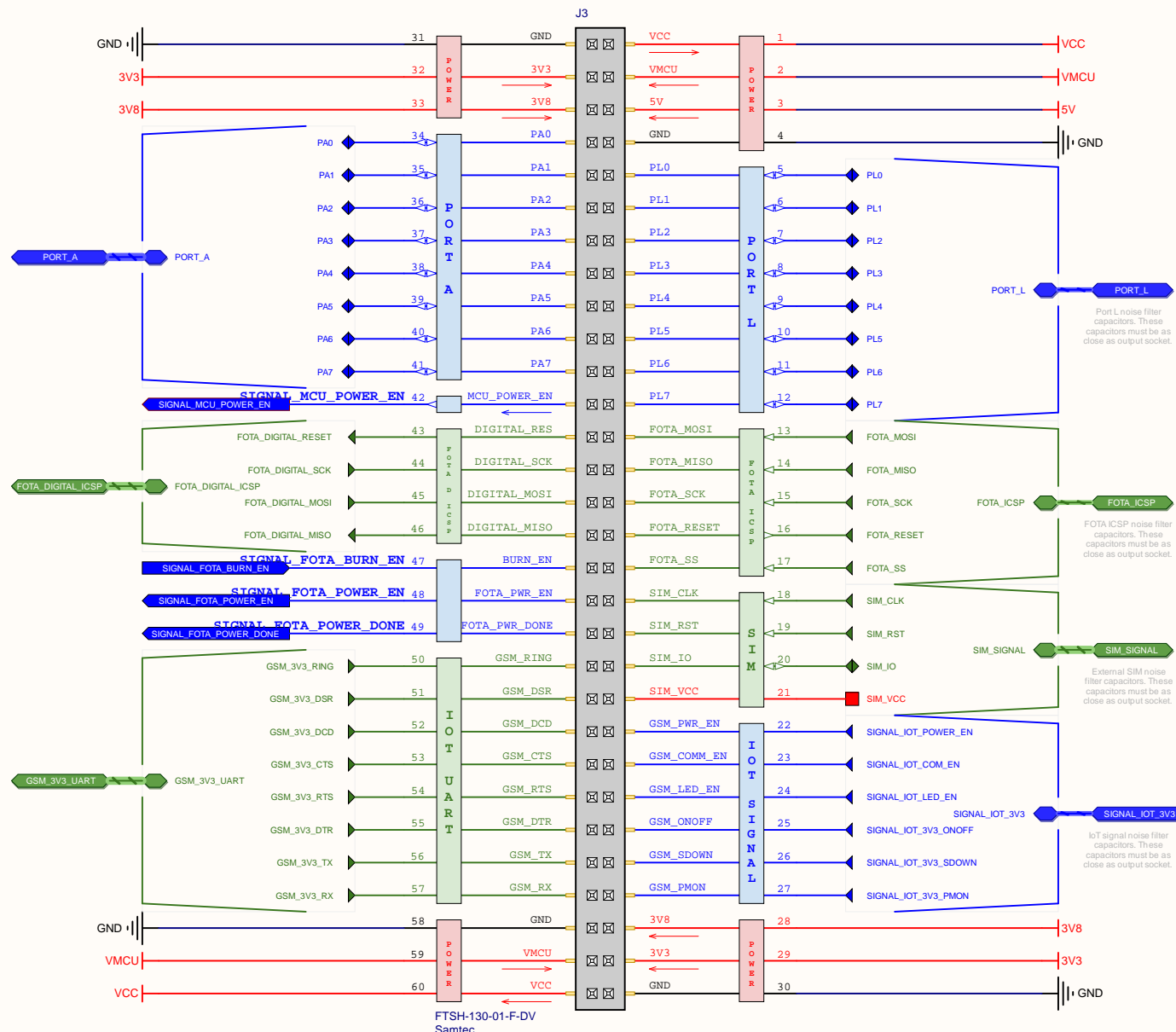
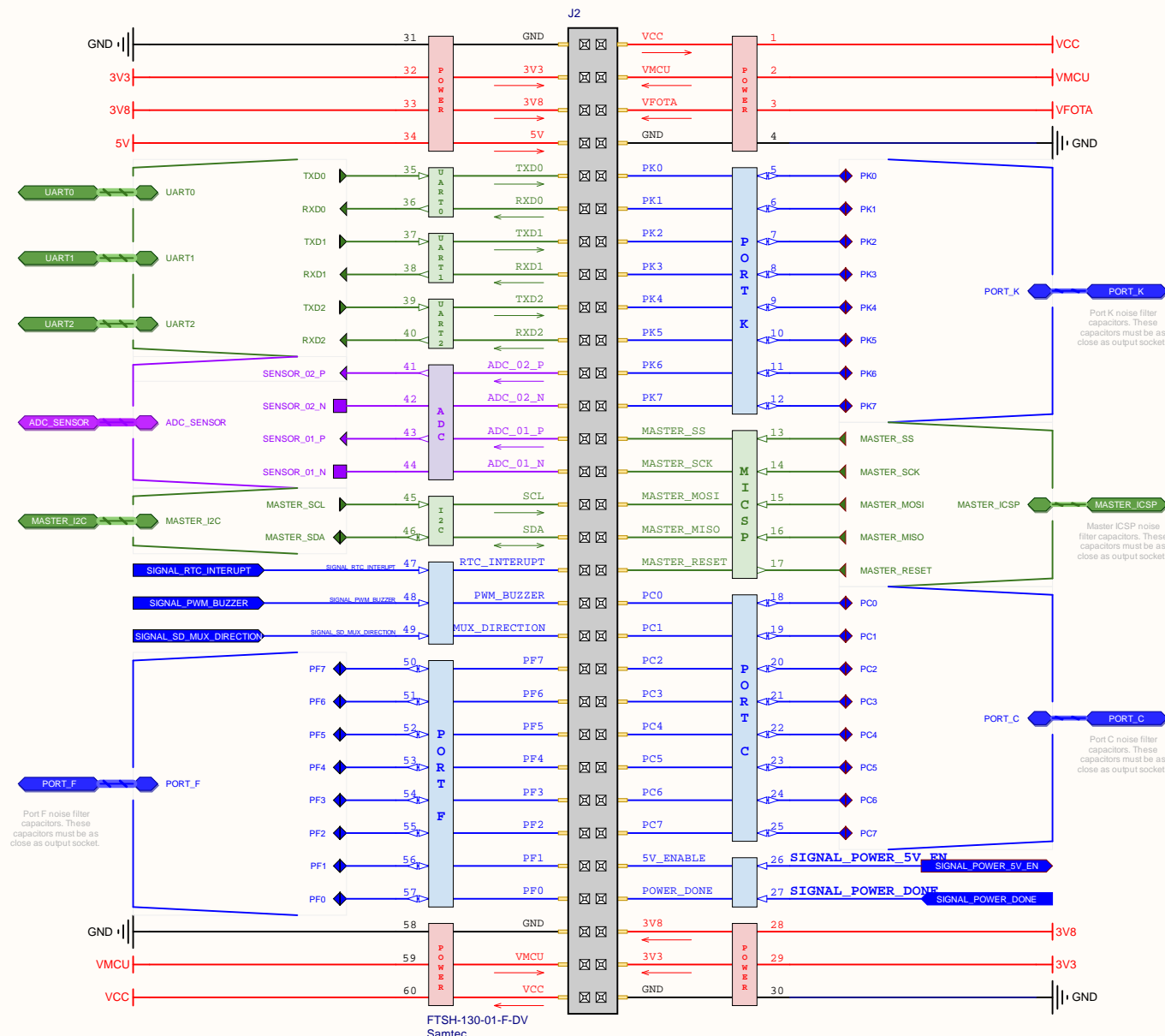
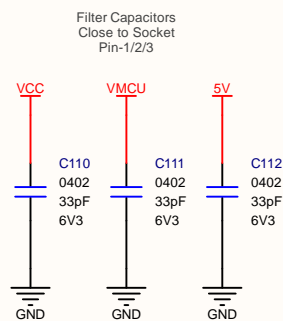
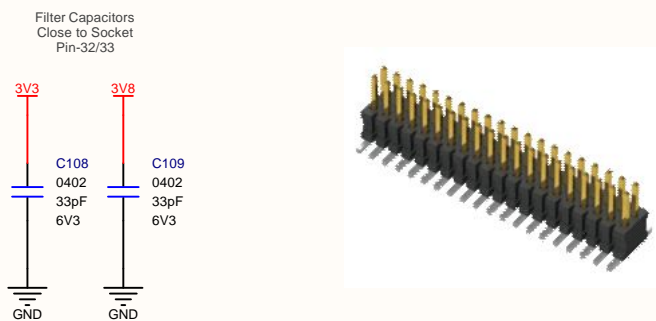
Title Master MicroController LED			Ovoo Electronics		
			Necip Fazıl Mah. Ortamak Sok. Bırgölü Apt. No: 19/6 Meram / Konya Türkiye		
Size: A4	Number: 28	Revision: B100AA R4			
Date: 12.02.2021	Time: 15:07:58	Sheet 28 of 54			
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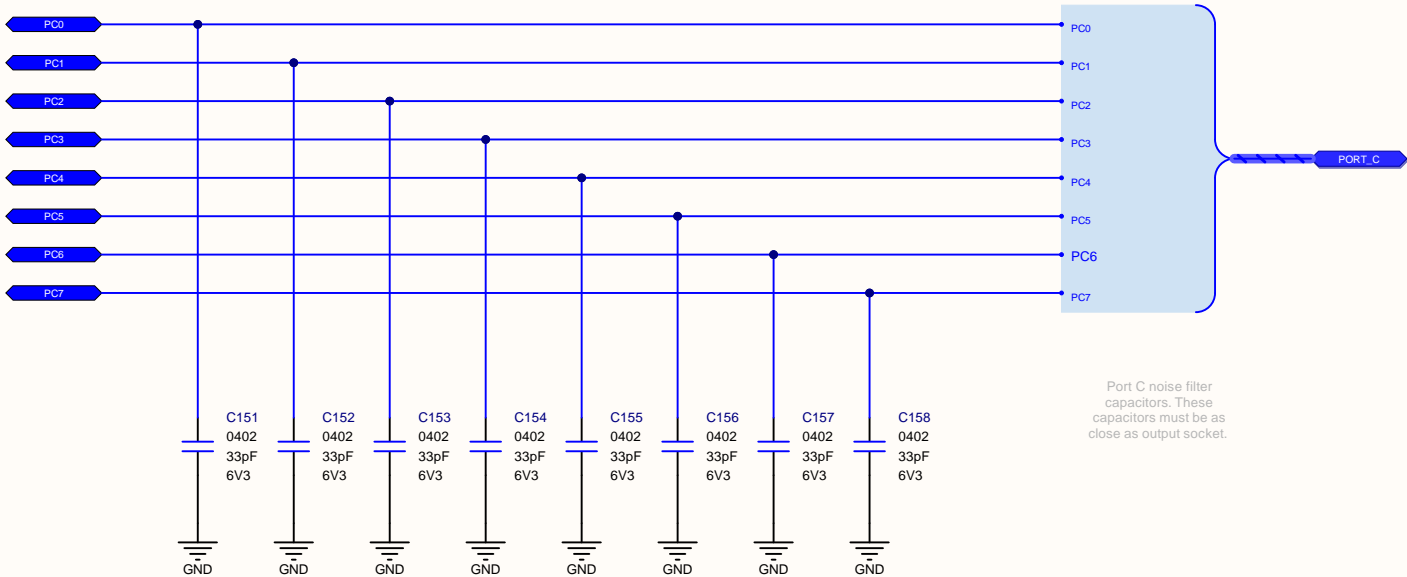
Module Output Socket A



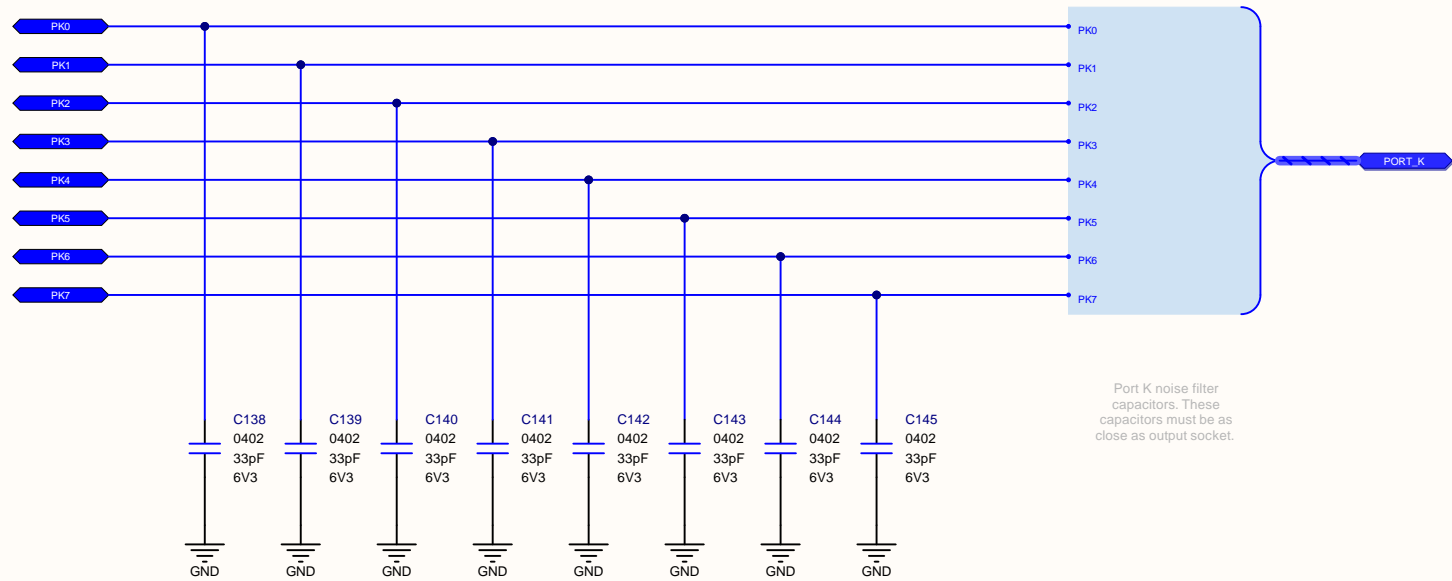
Module Output Socket B




Port C Output Socket Noise Capacitors

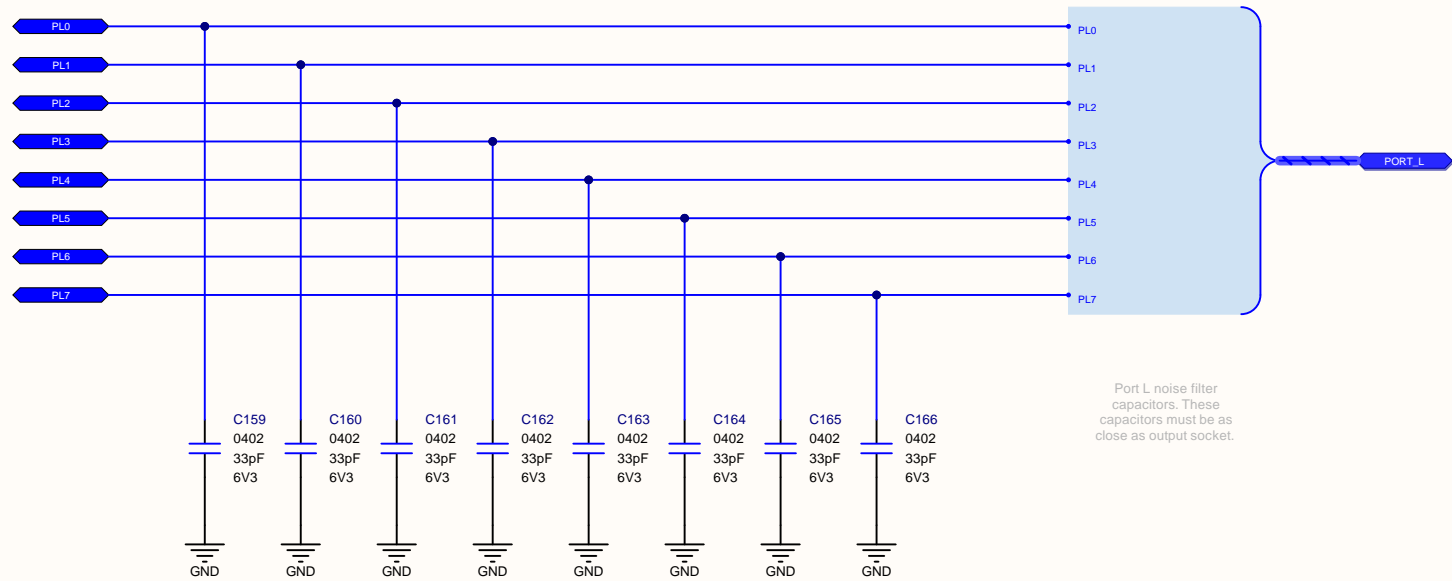



Port K Output Socket Noise Capacitors

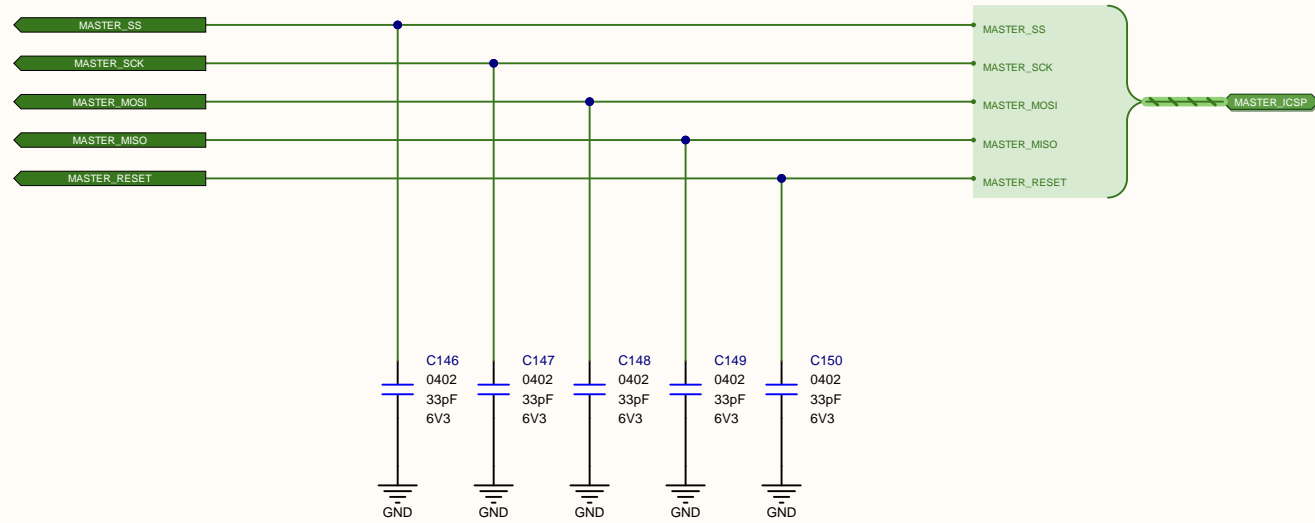



Title PORT K Filter Capacitors			Ovoo Electronics Necip Fazıl Mah. Ortarmak Sok. Bırgölü Apt. No: 19/6 Meram / Konya Türkiye	
Size: A4	Number: 31	Revision: B100AA R4		
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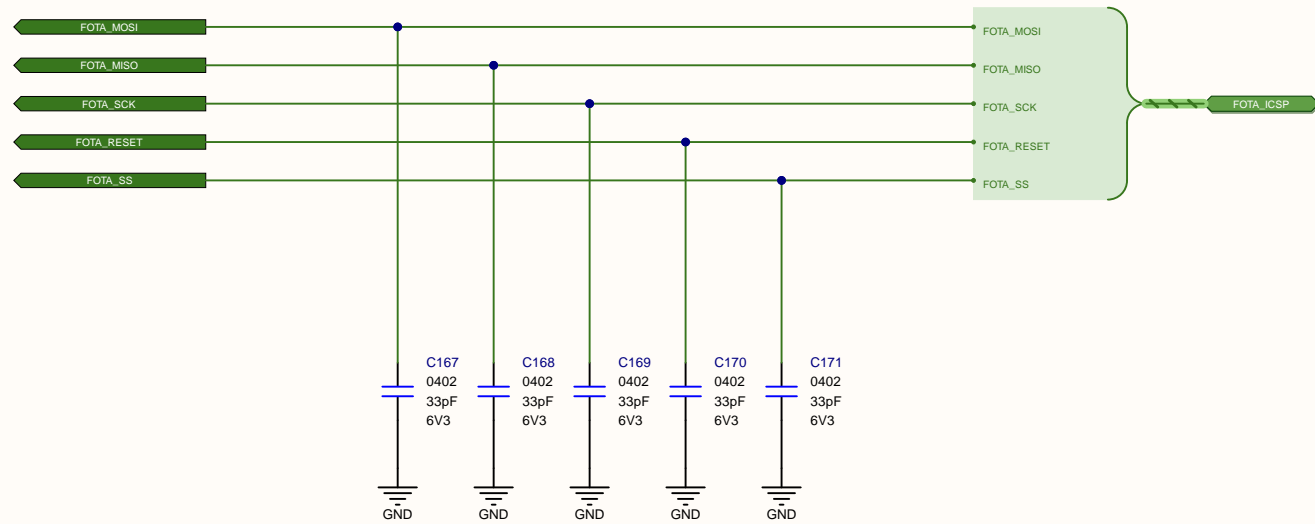
Port L Output Socket Noise Capacitors

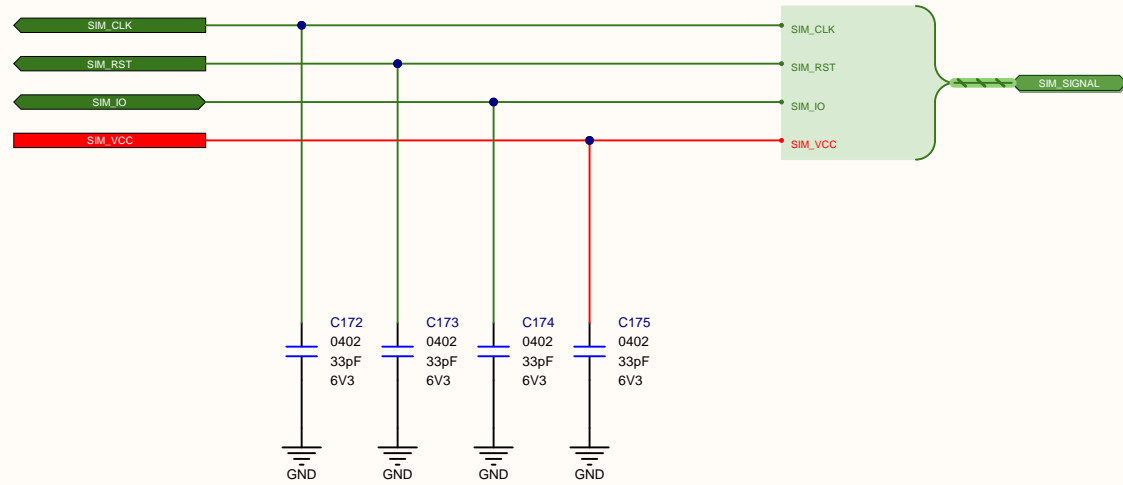


Title PORT L Filter Capacitors			Ovoo Electronics Necip Fazıl Mah. Ortarmak Sok. Bırgölü Apt. No: 19/6 Meram / Konya Türkiye	
Size: A4	Number: 32	Revision: B100AA R4		
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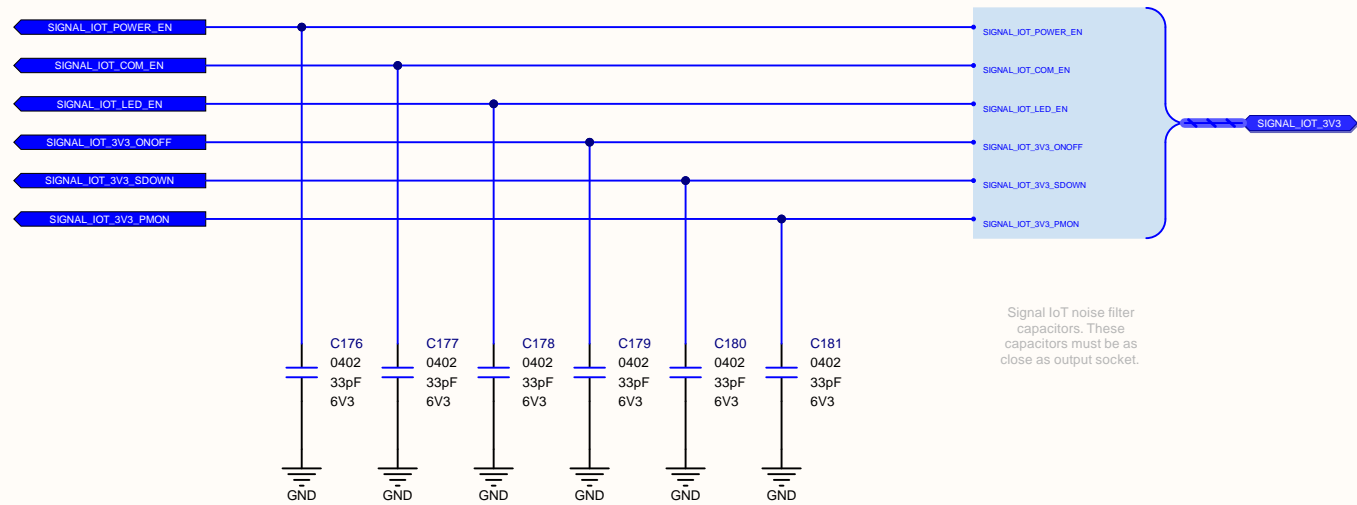


Title Master ICSP Filter Capacitors			Ovoo Electronics Necip Fazıl Mah. Ortarmak Sok. Bırgölü Apt. No: 19/6 Meram / Konya Türkiye		
Size: A4	Number: 33	Revision: B100AA R4			
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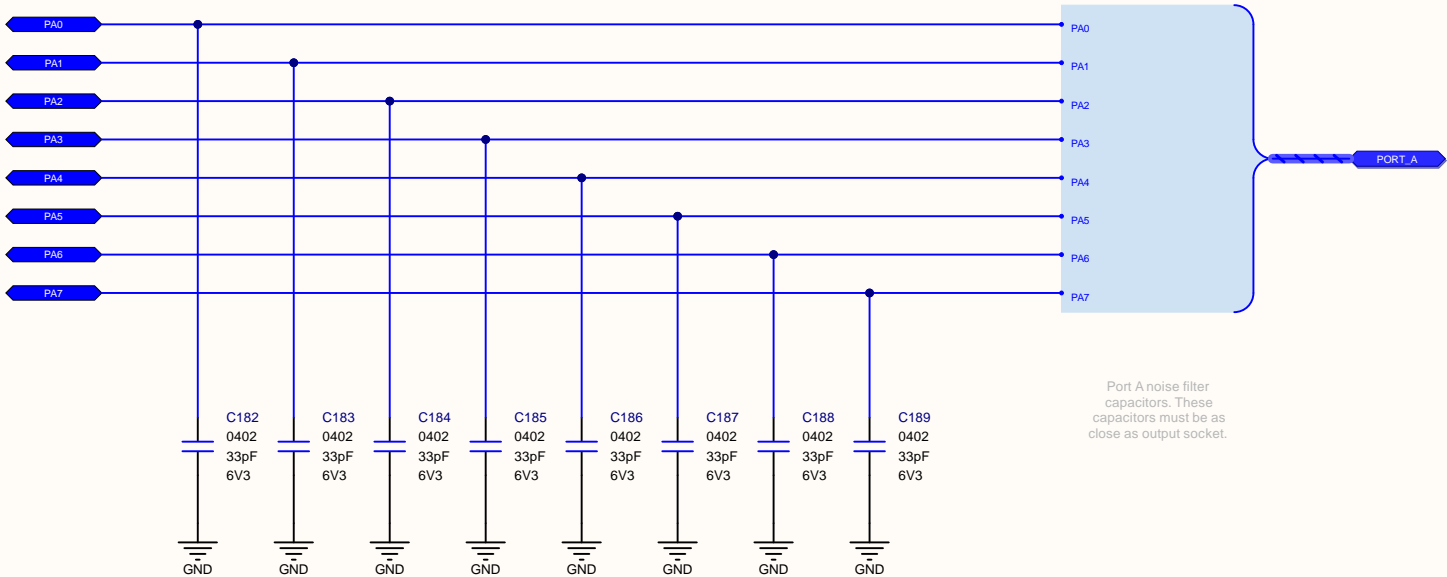


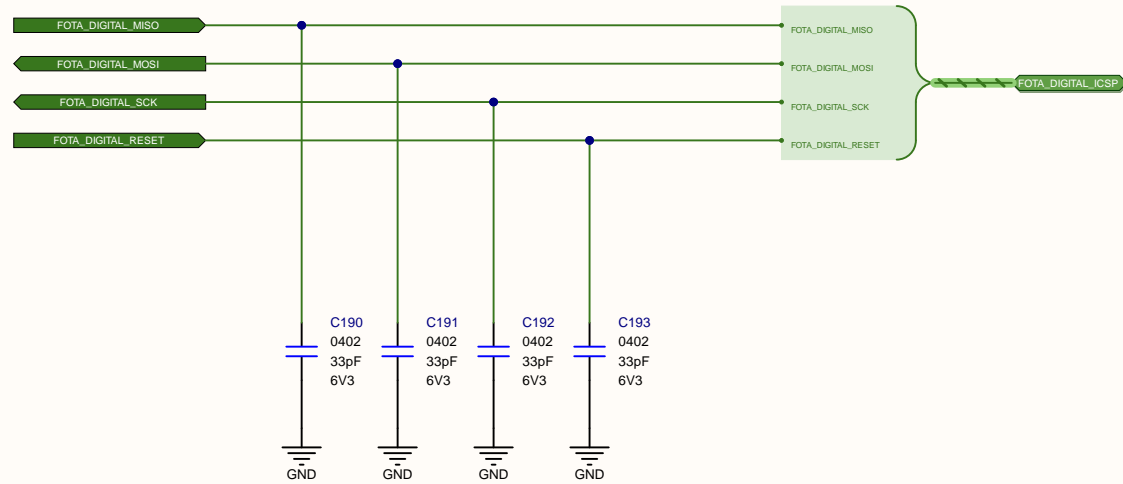



Signal IoT Output Socket Noise Capacitors



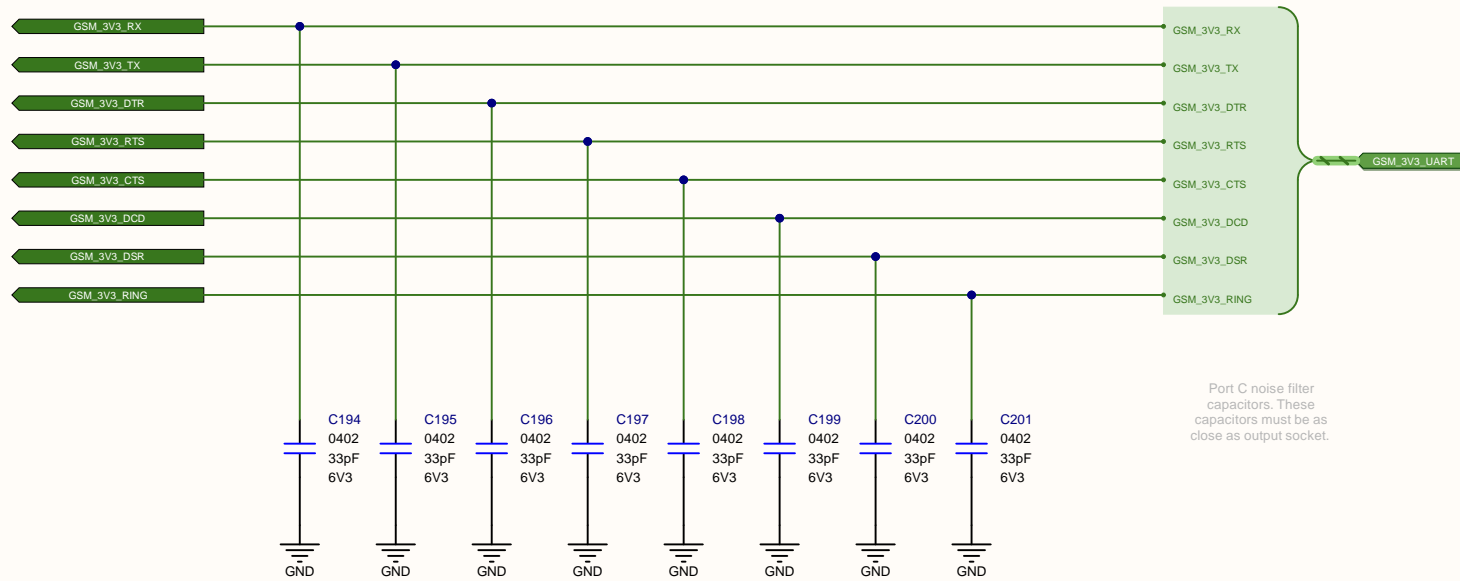
Port A Output Socket Noise Capacitors






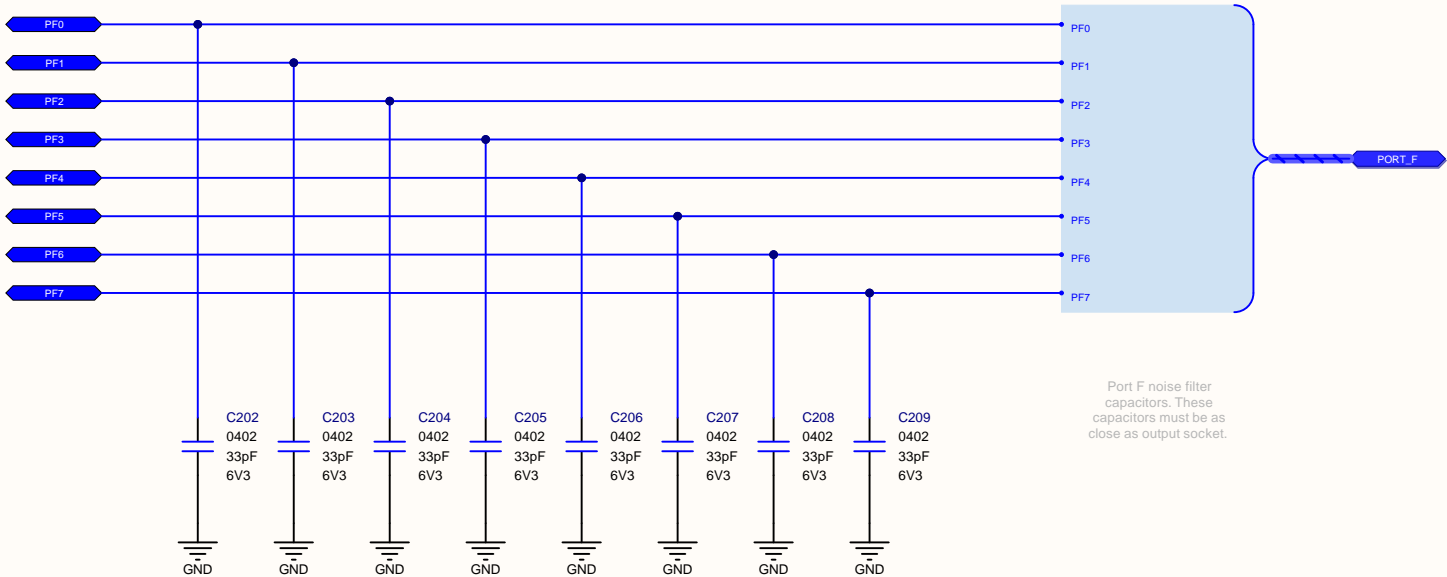
Title FOTA Digital ICSP Filter Capacitors			Ovoo Electronics Necip Fazıl Mah. Ortarmak Sok. Bırgölü Apt. No: 19/6 Meram / Konya Türkiye		
Size: A4	Number: 38	Revision: B100AA R4			
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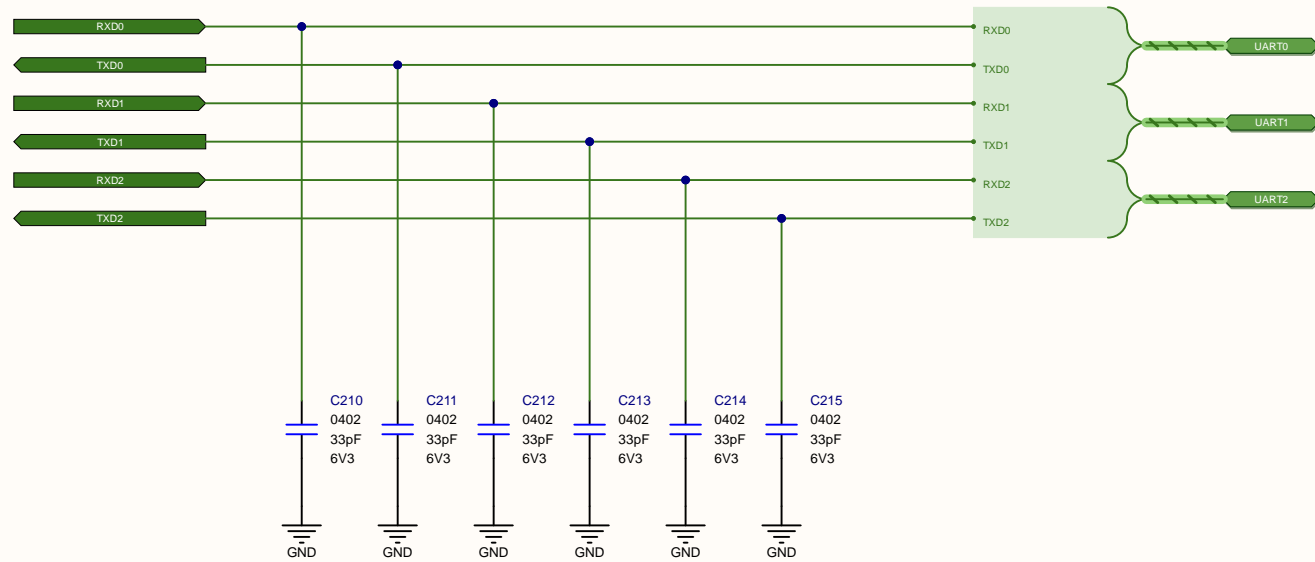
IoT UART Output Socket Noise Capacitors

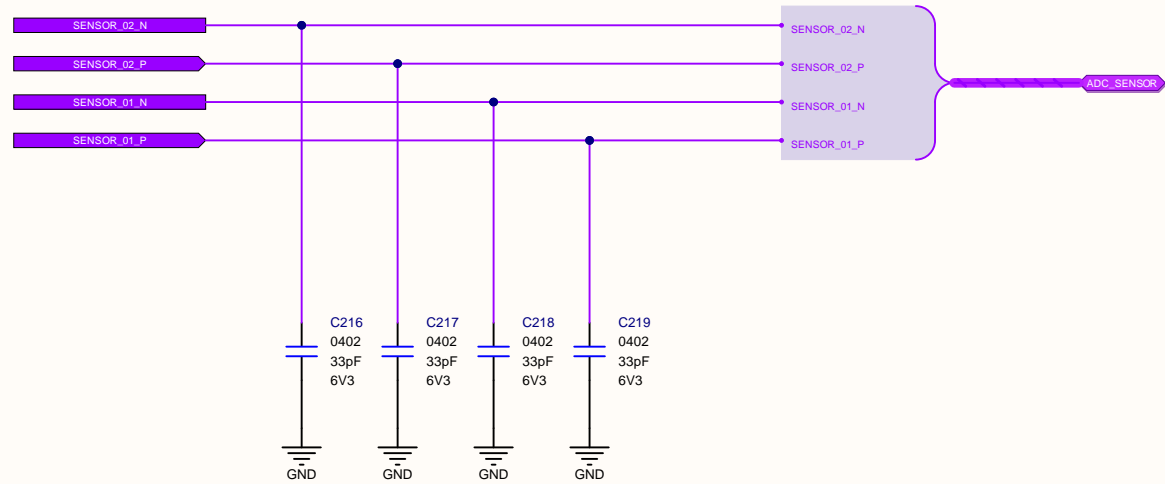


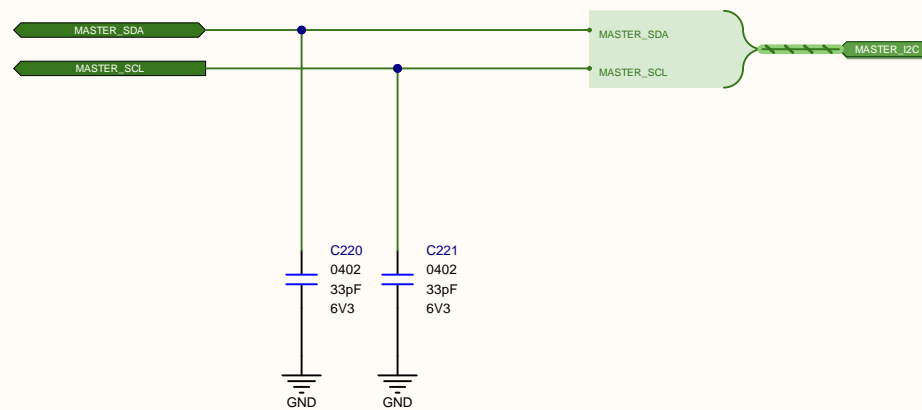
Title IoT UART Filter Capacitors			Ovoo Electronics Necip Fazıl Mah. Ortamak Sok. Bırgölü Apt. No: 19/6 Meram / Konya Türkiye	
Size: A4	Number: 39	Revision: B100AA R4		
Date: 12.02.2021	Time: 15:07:59	Sheet 39 of 54		
File: C:\Altium Projects\B100\AA\Design Files\B100AA\Schematics\Filter Capacitors - IoT UART.SchDoc				

Port F Output Socket Noise Capacitors









Title I2C Filter Capacitors

Size: A4

Number: 43

Revision: B100AA R4

Date: 12.02.2021

Time: 15:07:59

Sheet 43 of 54

File: C:\Altium Projects\B100\AA\Design Files\B100AA\Schematics\FILTER Capacitors - I2C.SchDoc

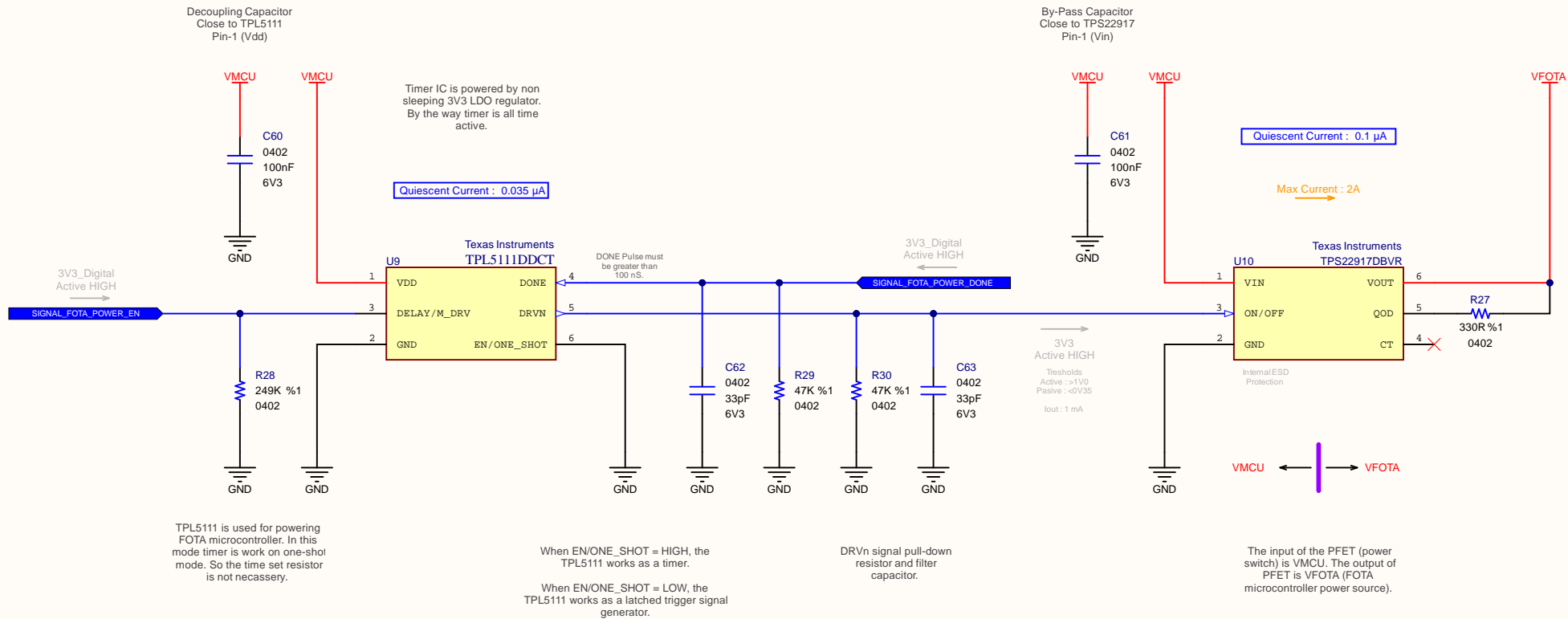
Ovoo Electronics

Necip Fazıl Mah. Ortarmak Sok.
Bırgölü Apt. No: 19/6
Meram / Konya
Türkiye



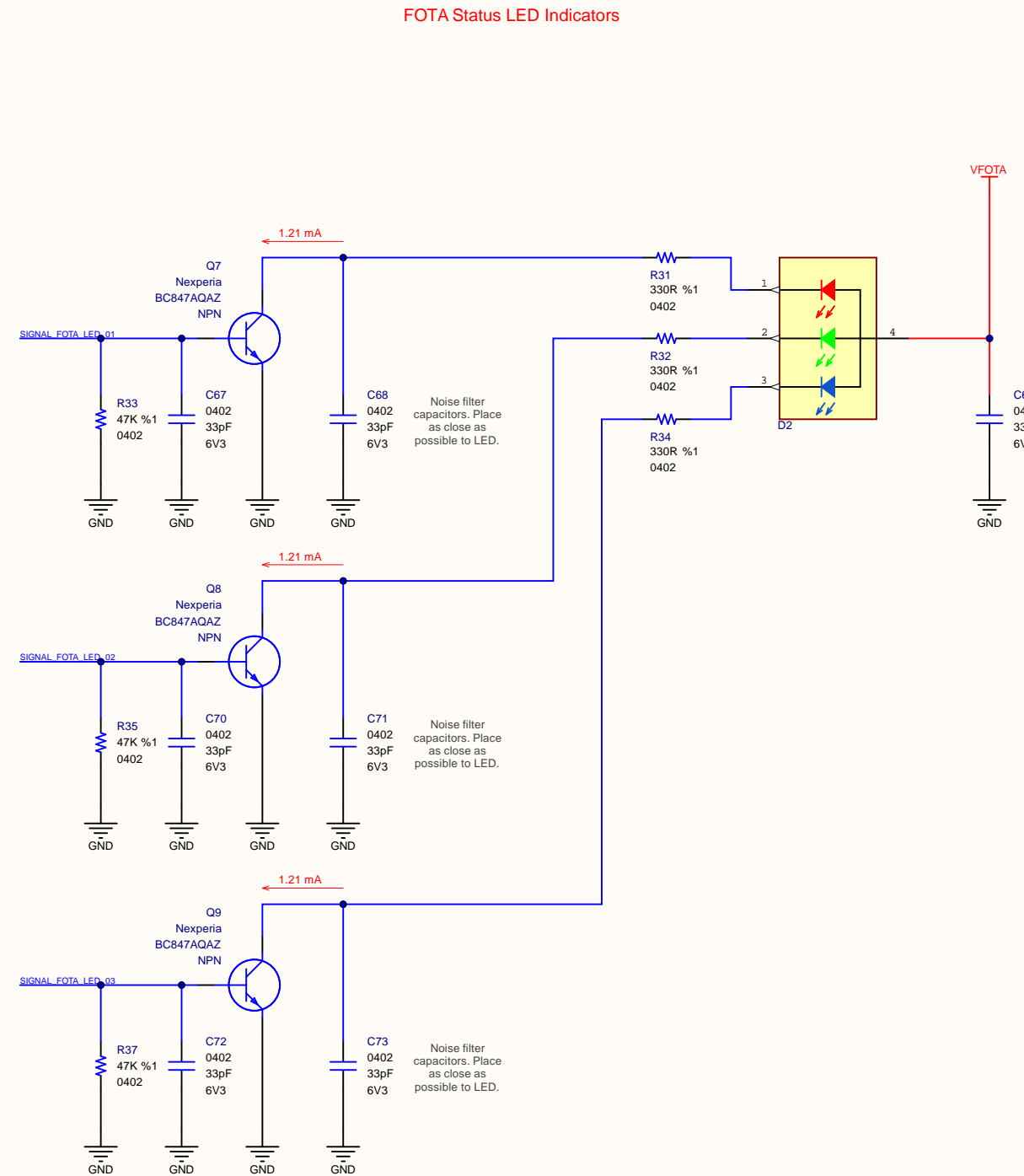
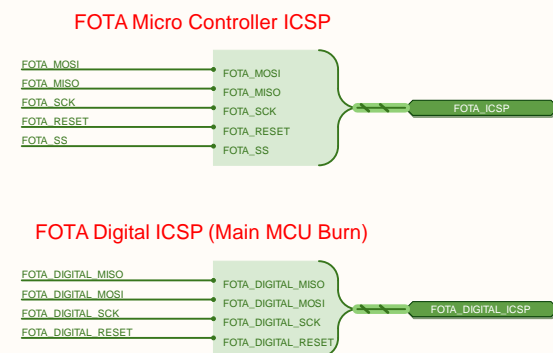
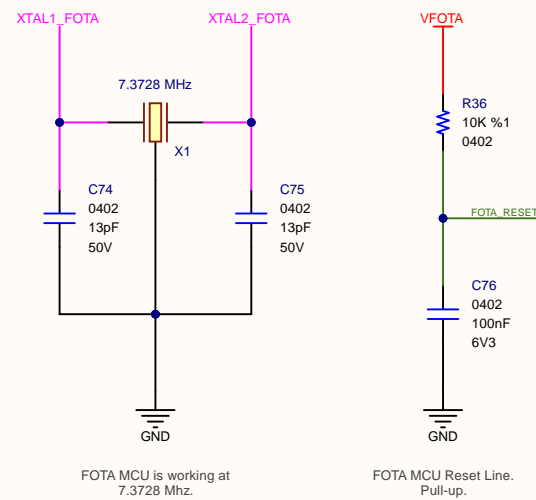
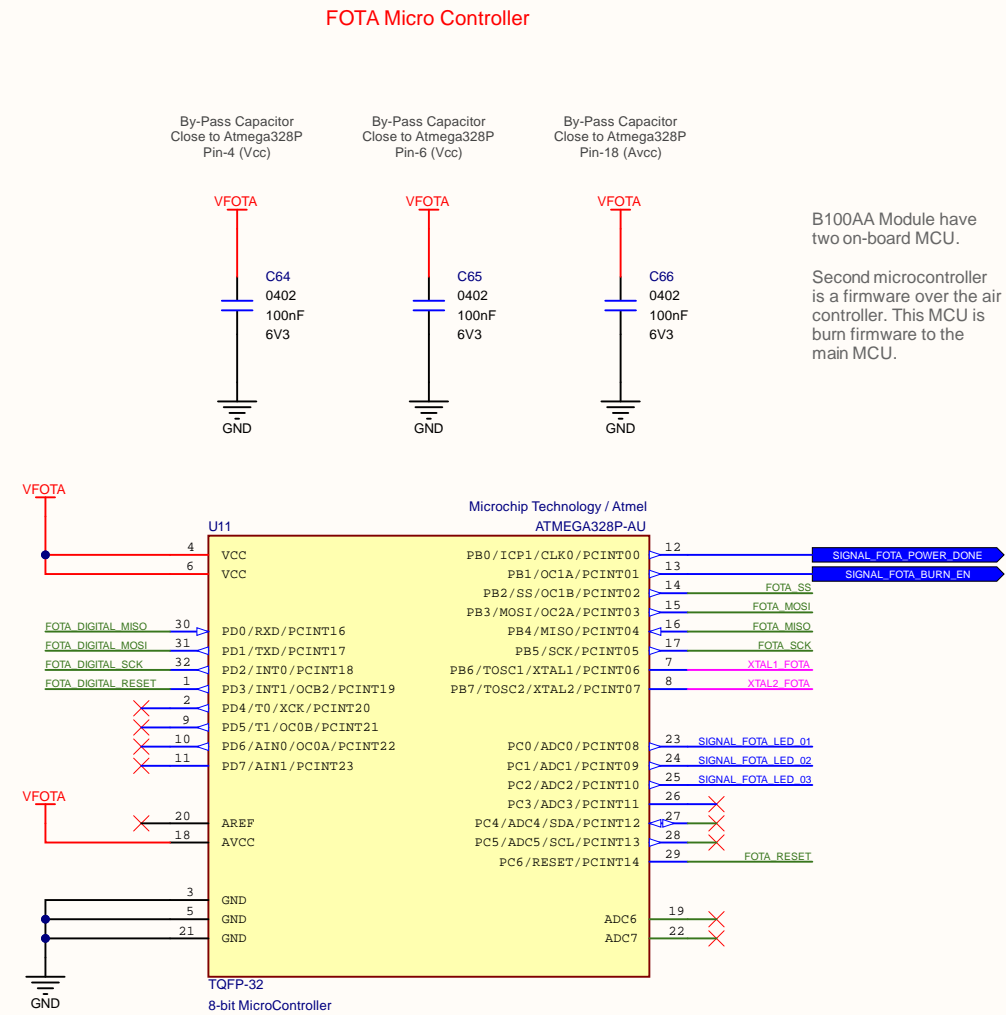
Power Trigger


Power Switch



Title FOTA MicroController Latched Power Trigger			Ovoo Electronics Necip Fazıl Mah, Ortarmak Sok. Bırgölü Apt. No: 19/6 Meram / Konya Türkiye	
Size: A4	Number: 44	Revision: B100AA R4		
Date: 12.02.2021	Time: 15:07:59	Sheet 44 of 54		
File: C:\Altium Projects\B100\AA\Design Files\B100AA\Schematics\FOTA MicroController Power Switch.SchDoc				





Title FOTA MicroController			Ovoo Electronics Necip Fazıl Mah. Ortamak Sok. Bırgöl Apt. No: 19/6 Meram / Konya Turkey		
Size: A3	Number: 45	Revision: B100AA R4			
Date: 12.02.2021	Time: 15:07:59	Sheet 45 of 54			
File: C:\Altium Projects\B100\AA\Design Files\B100AA\Schematics\FOTA MicroController.SchDoc					

A

B

C

D

A

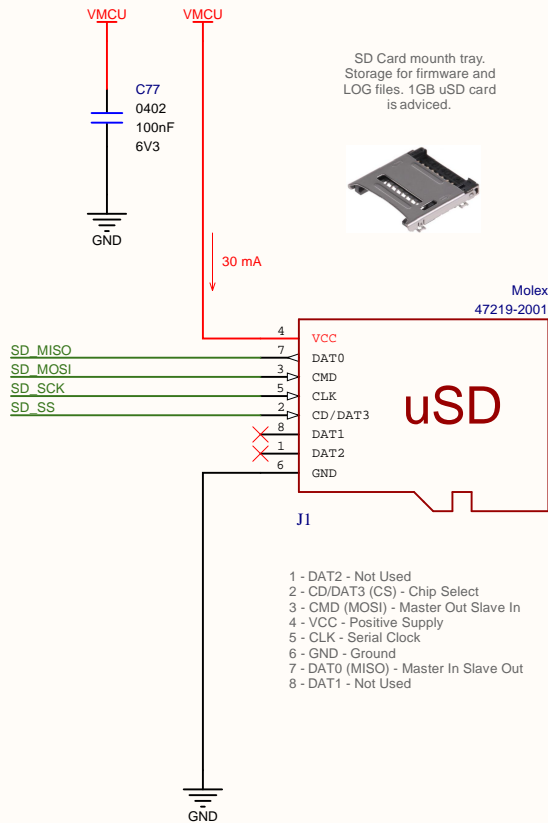
B

C

D

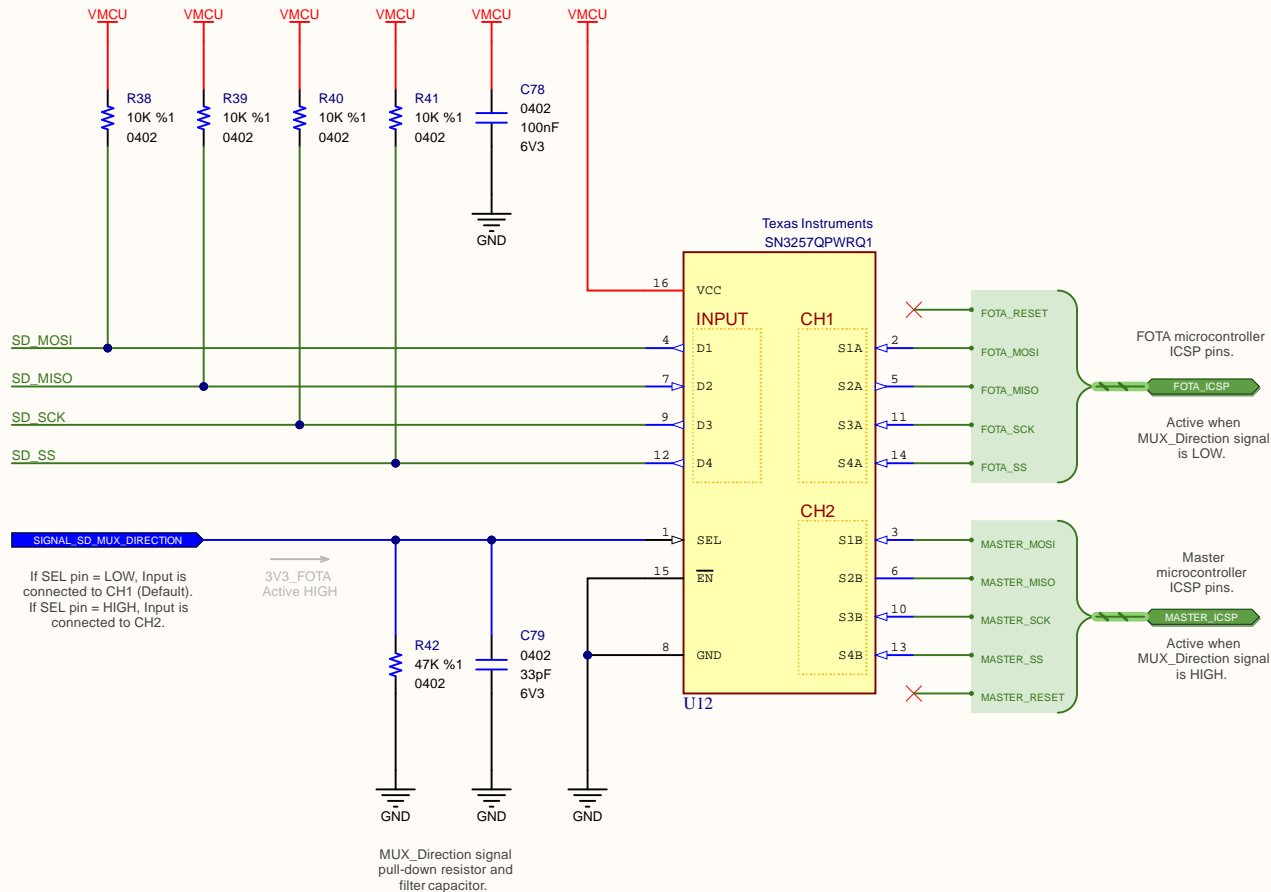
Decoupling Capacitor.
As close as possible to
uSD tray.


SD Card

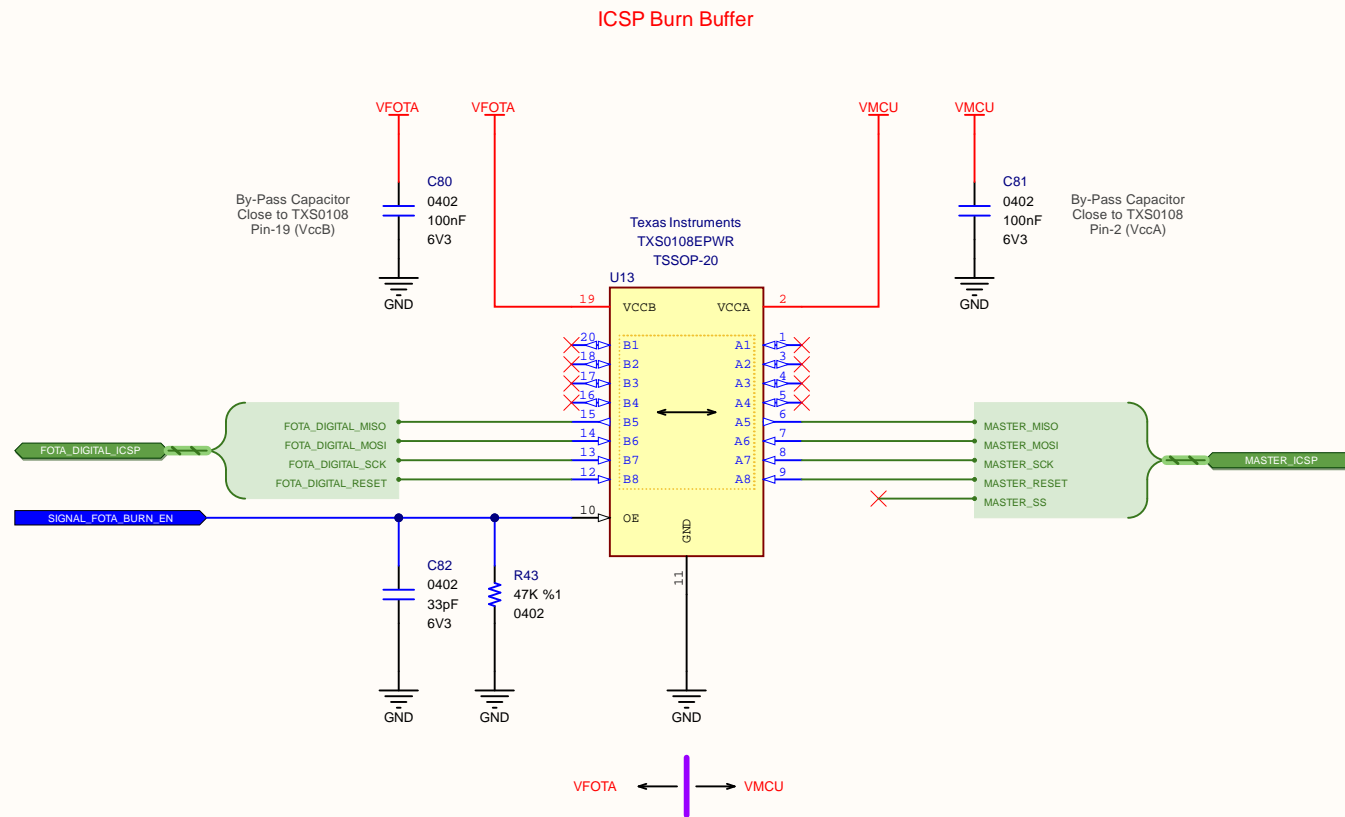


By-Pass Capacitor
Close to SN3257QPWRQ1
Pin-16 (Vcc)

SPI Selection Switch



Title SD Card & Select Switch			Ovoo Electronics Necip Fazıl Mah. Ortarmak Sok. Bırgölü Apt. No: 19/6 Meram / Konya Türkiye		
Size: A4	Number: 46	Revision: B100AA R4			
Date: 12.02.2021	Time: 15:08:00	Sheet 46 of 54			
File: C:\Altium Projects\B100\AA\Design Files\B100AA\Schematics\SD Card.SchDoc					



Title **FOTA Burn Buffer**

Size: **A4**

Number: **47**

Revision: **B100AA R4**

Date: **12.02.2021**

Time: **15:08:00**

Sheet **47** of **54**

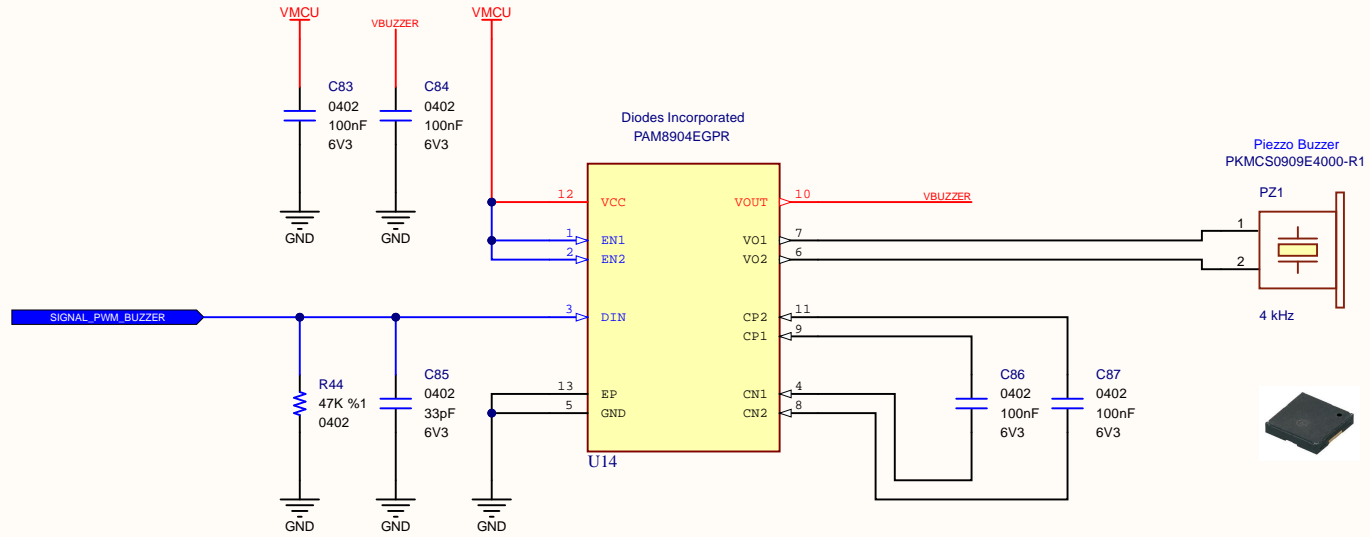
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Ovoo Electronics

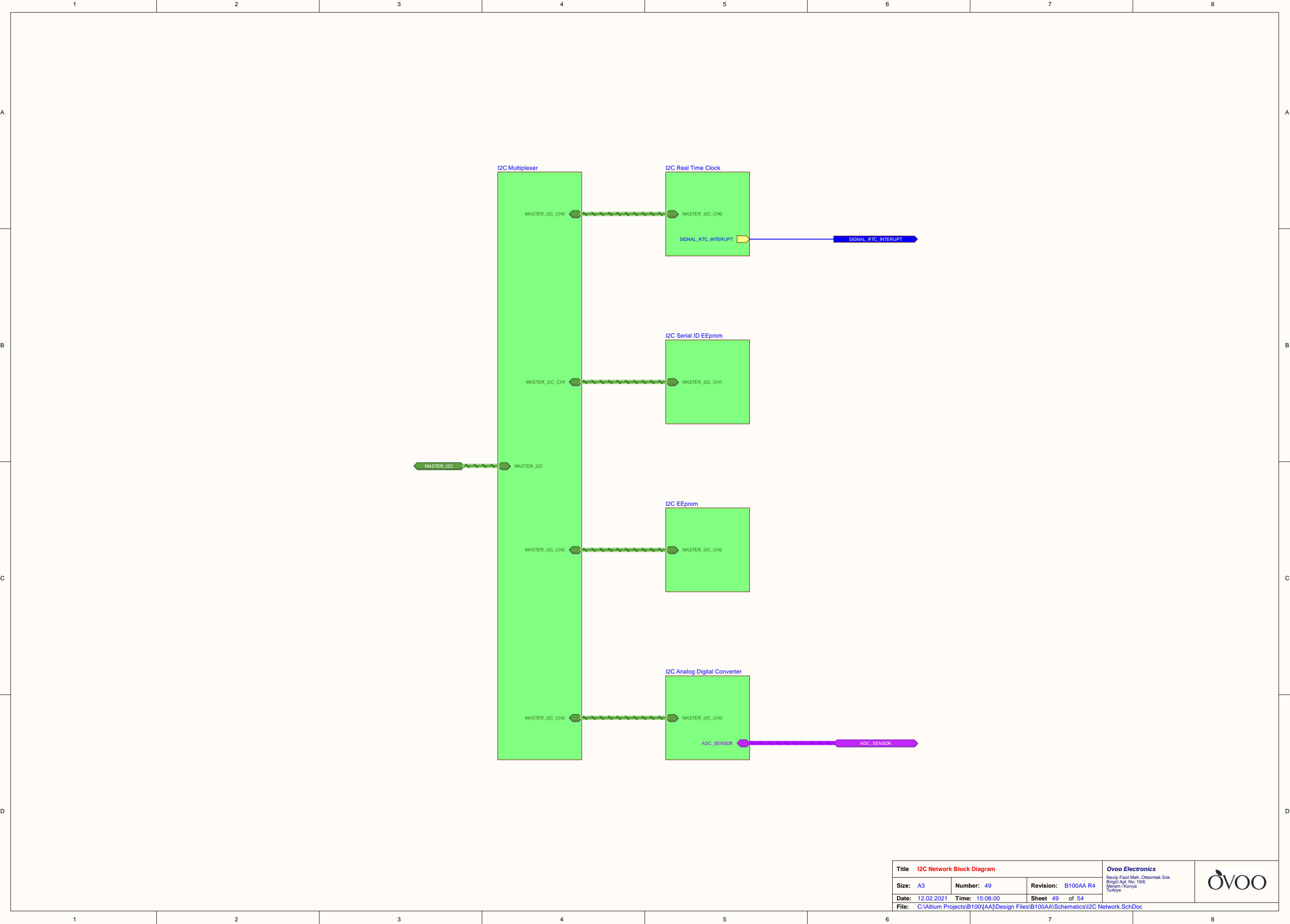
Necip Fazıl Mah. Ortarmak Sok.
Bırgölü Apt. No: 19/6
Meram / Konya
Türkiye

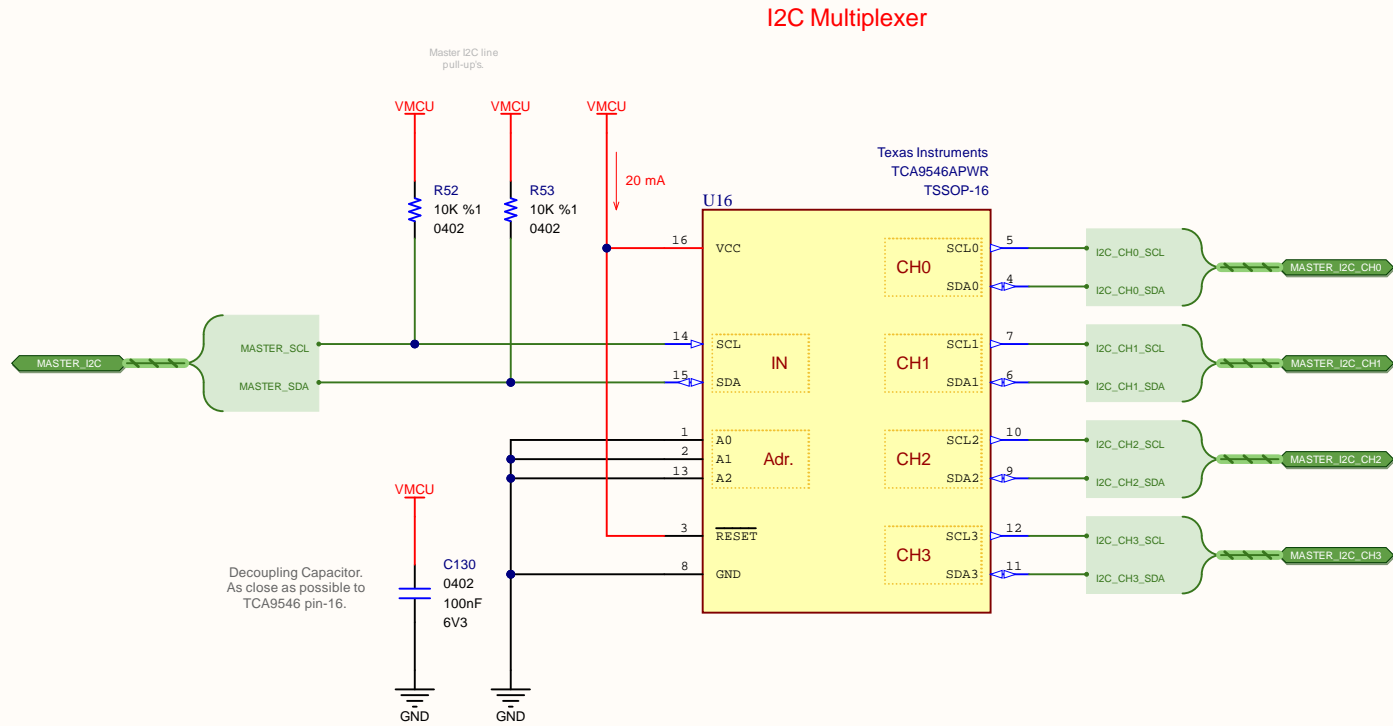



Piezzo Buzzer



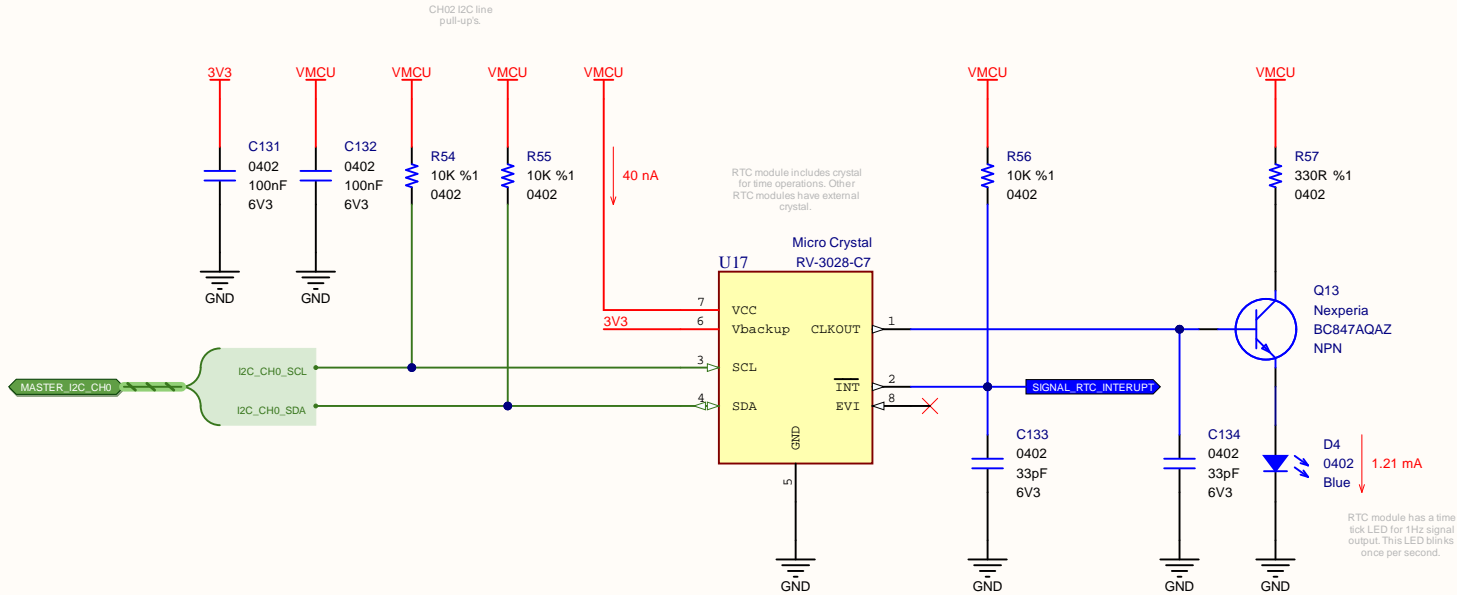
Title Buzzer			Ovoo Electronics Necip Fazıl Mah. Ortarmak Sok. Bırgölü Apt. No: 19/6 Meram / Konya Türkiye	
Size: A4	Number: 48	Revision: B100AA R4		
Date: 12.02.2021	Time: 15:08:00	Sheet 48 of 54		
File: C:\Altium Projects\B100(AA)\Design Files\B100AA\Schematics\Buzzer.SchDoc				



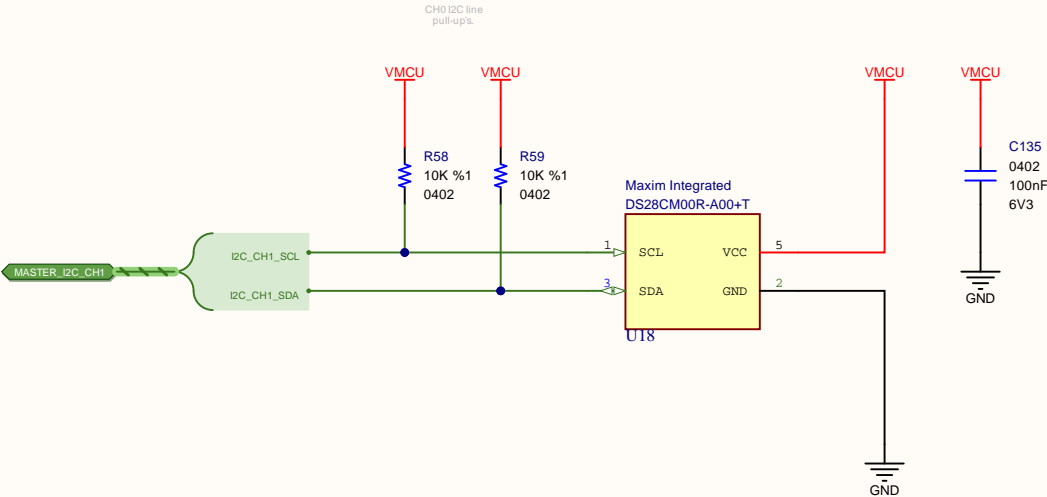



Title I2C Multiplexer			Ovoo Electronics		
Size: A4	Number: 50	Revision: B100AA R4	Necip Fazıl Mah. Ortarmak Sok. Bırgölü Apt. No: 19/6 Meram / Konya Türkiye		
Date: 12.02.2021	Time: 15:08:00	Sheet 50 of 54			
File: C:\Altium Projects\B100\AA\Design Files\B100AA\Schematics\I2C Multiplexer.SchDoc					

Real Time Clock

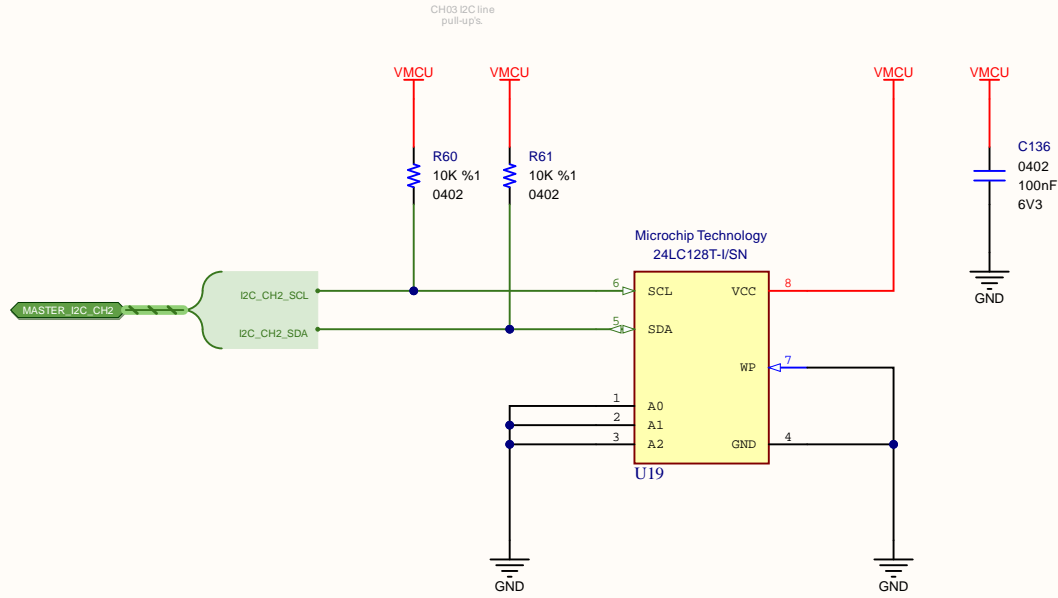



I2C Serial ID EEPROM



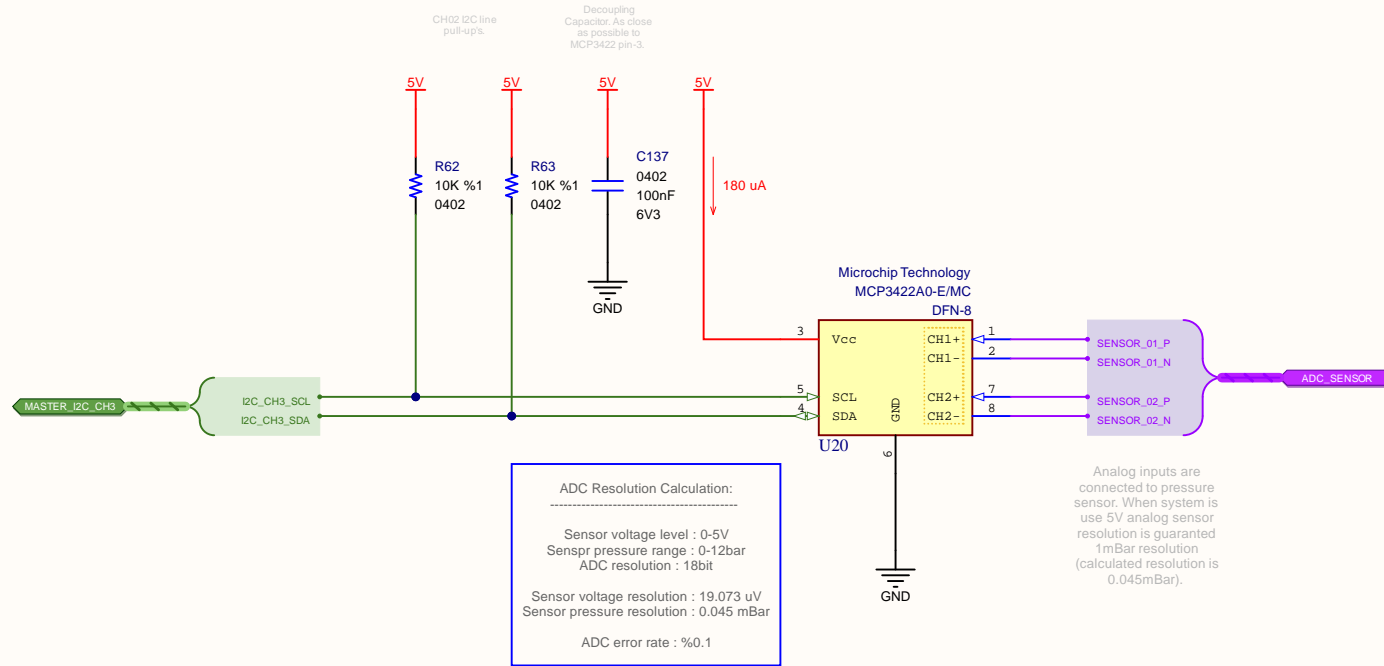
Title: I2C Serial ID EEPROM			Ovoo Electronics		
Size: A4 Number: 52 Revision: B100AA R4			Necip Fazıl Mah. Ortarmak Sok. Bırgölü Apt. No: 19/6 Meram / Konya Türkiye		
Date: 12.02.2021 Time: 15:08:00		Sheet 52 of 54			
File: C:\Altium Projects\B100\AA\Design Files\B100AA\Schematics\Serial ID EEPROM.SchDoc					


EEPROM



Title I2C EEprom			Ovoo Electronics Necip Fazıl Mah. Ortarmak Sok. Bırgölü Apt. No: 19/6 Meram / Konya Türkiye		
Size: A4	Number: 53	Revision: B100AA R4			
Date: 12.02.2021	Time: 15:08:00	Sheet 53 of 54			
File: C:\Altium Projects\B100\AA\Design Files\B100AA\Schematics\EEPROM.SchDoc					

Analog Digital Converter



Title Analog Digital Converter			Ovoo Electronics Necip Fazıl Mah. Ortarmak Sok. Bırgölü Apt. No: 19/6 Meram / Konya Türkiye		
Size: A4	Number: 54	Revision: B100AA R4			
Date: 12.02.2021	Time: 15:08:00	Sheet 54 of 54			
File: C:\Altium Projects\B100\AA\Design Files\B100AA\Schematics\Analog Digital Converter.SchDoc					