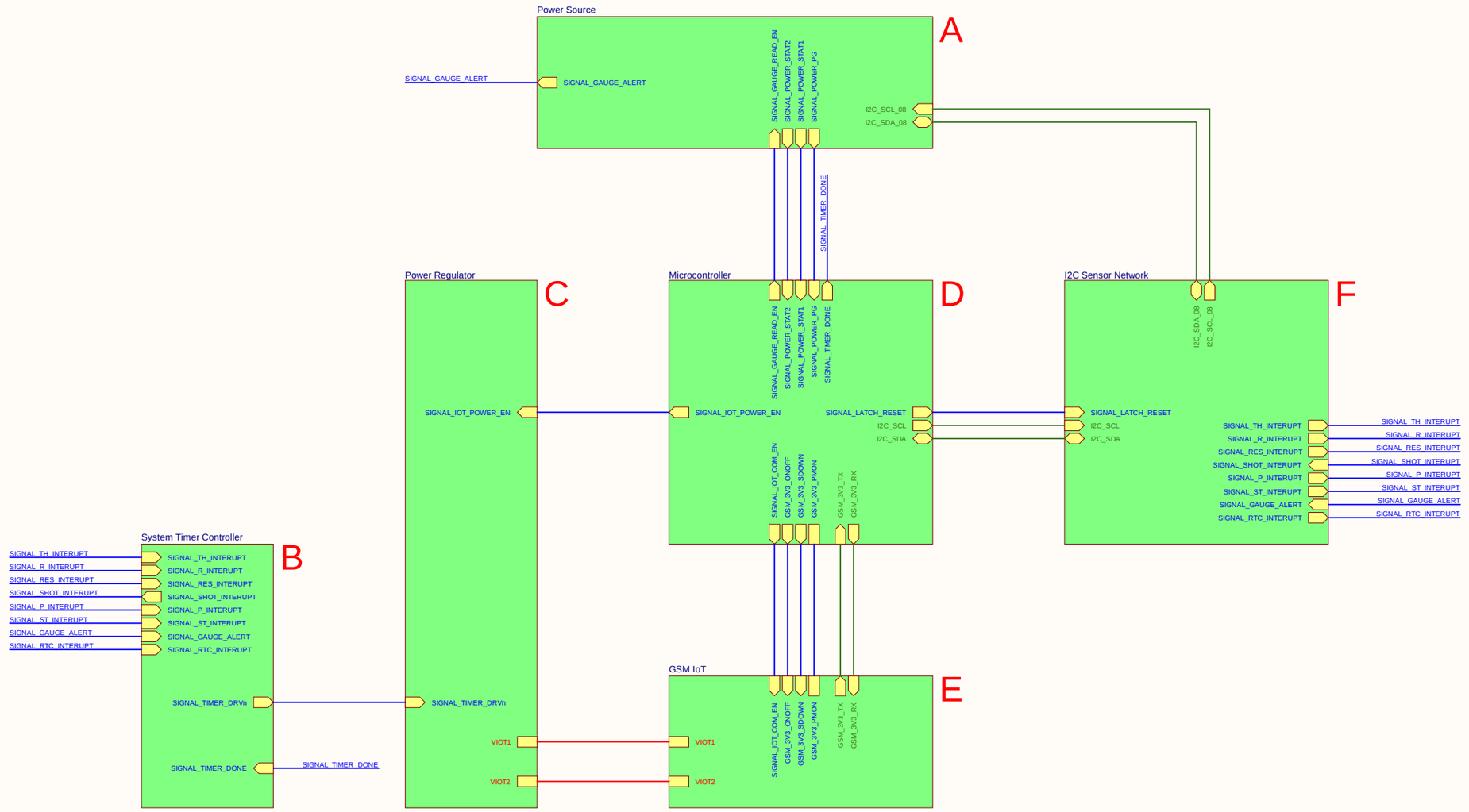
B106 - Weather Station IoT Module



Title	Weather Station Block Diagram		
Size: A3	**Number:** AA001	**Revision:** B106AA	
Date: 6.06.2020	**Time:** 22:28:36	**Sheet** 1 of 37	
File:	C:\Altium Projects\STF\P102 - Weather Station\Modules\B106AA\Schematic\B106AA Block Diagram.SchDoc		

Ovoo Electronics
Küçük İhsaniye Mah.
Müzaklı Sok. No:15
Meram / Konya
Turkiye

OVOO

Li-Ion Battery
2 x 2500 mAh

Solar Panel Socket

Bat- Pack-

Pack- GND

Battery Socket & Portection

A1

Battery Measurement

I2C_SCL_08
I2C_SDA_08
SIGNAL_GAUGE_ALERT
SIGNAL_GAUGE_READ_EN

A2

Vbat = 2V8-4V3
BAT+
BAT-

Vpack = 3V-4V2
BAT+
PACK-

BAT+
GND

Battery Charger

Vsolar = Max 6V
Vsolar
GND

SIGNAL_POWER_PG
SIGNAL_POWER_STAT1
SIGNAL_POWER_STAT2

A3

Buck Boost Converter

VCC 3V8

A4

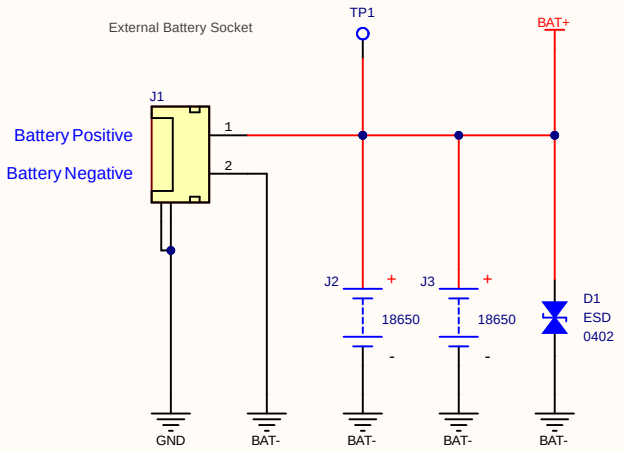
Vcc = 3V-6V
VCC
GND

3V8
3V8
GND

Title	**Power Source & Charger**		
Size: A4	**Number:** AA001	**Revision:** B106AA	
Date: 6.06.2020	**Time:** 22:28:36	**Sheet** 2 of 37	
File:	C:\Altium Projects\STF\P102 - Weather Station\Modules\B106AA\Schematic\Power Source.SchDoc		

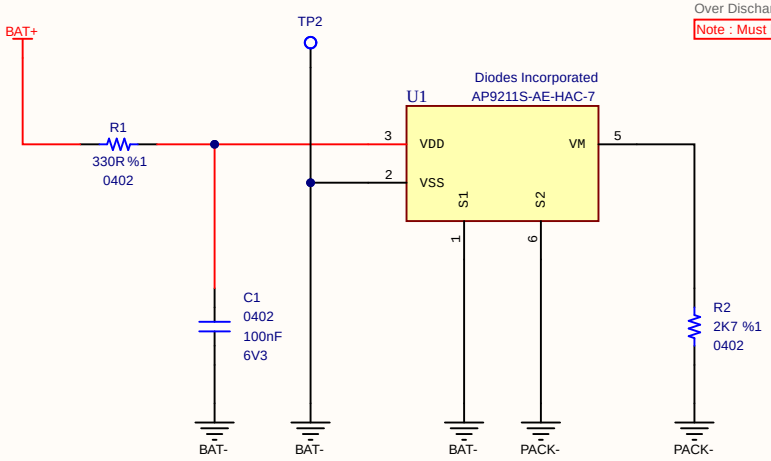
Ovoo Electronics
Küçük İhsaniye Mah.
Mızraklı Sok. No:15
Meram / Konya
Turkiye

OVOO



B106AA module have a battery holder for 18650 LiIon battery. System have 2 parallel connected battery system.

Advice : 2x2500mAh VTC6

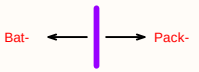


Quiescent Current : 3.0µA

P/N : AP9211XX-AE-HAC-7

Over Charge Detection Voltage (Vcu): 4V2
Over Charge Relase Voltage (Vcl) : 4V1
Over Discharge Detection Voltage (Vdl) : 2V5
Over Discharge Relase Voltage (Vdu) : 3V

Note : Must be plug charge on first run.



Battery ground isolation for protection.

Vbat = 2V8-4V3

Vpack = 3V-4V2

A1

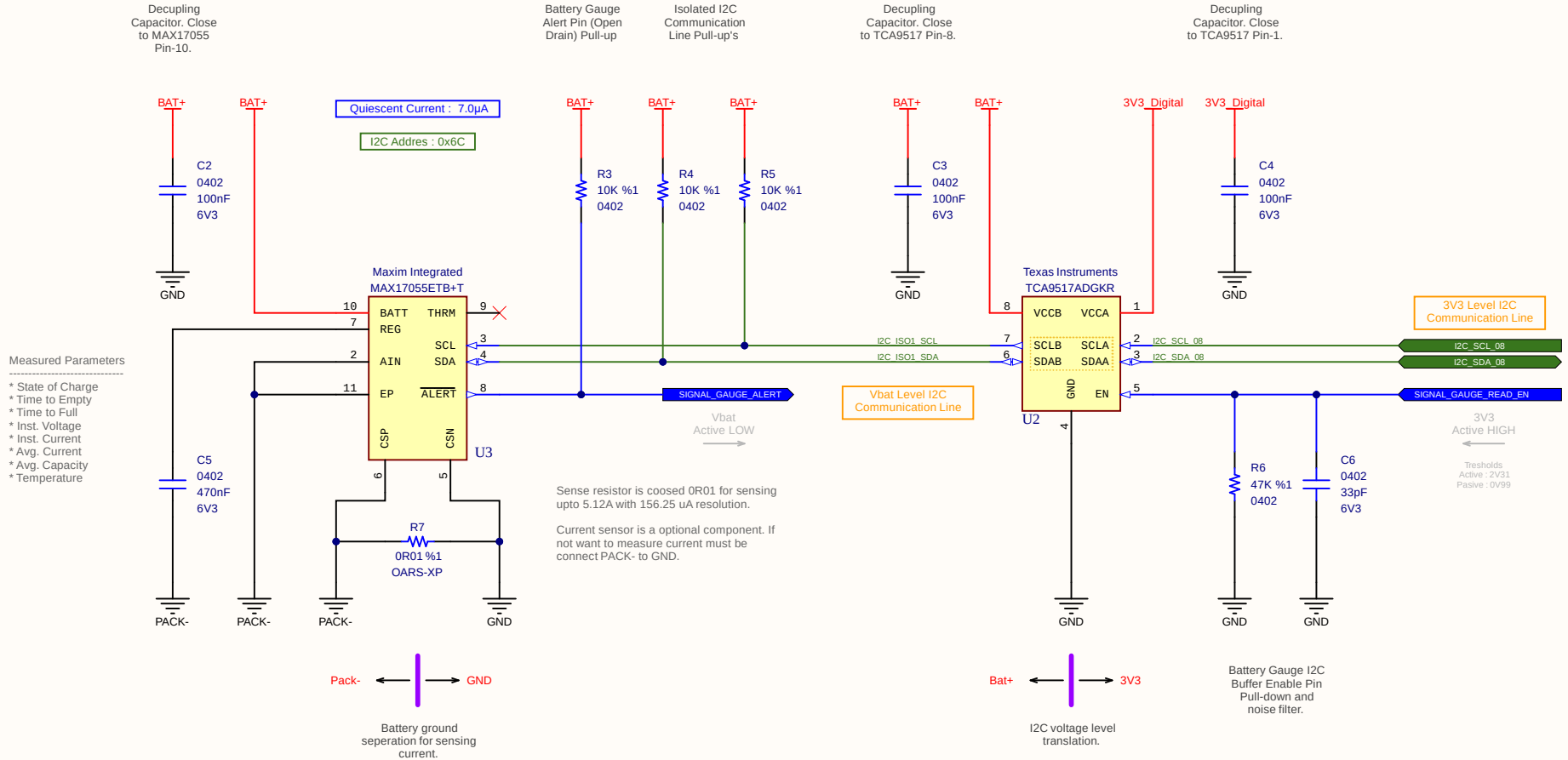
Title	System Battery Feed and Battery Socket		
Size: A4	**Number:** AA001	**Revision:** B106AA	
Date: 6.06.2020	**Time:** 22:28:36	**Sheet** 3 of 37	
File: C:\Altium Projects\STF\P102 - Weather Station\Modules\B106AA\Schematic\Battery Feed and Socket.SchDoc			

Ovoo Electronics
Küçük İhsaniye Mah.
Mızraklı Sok. No:15
Meram / Konya
Turkiye

OVOO

Battery Measurement

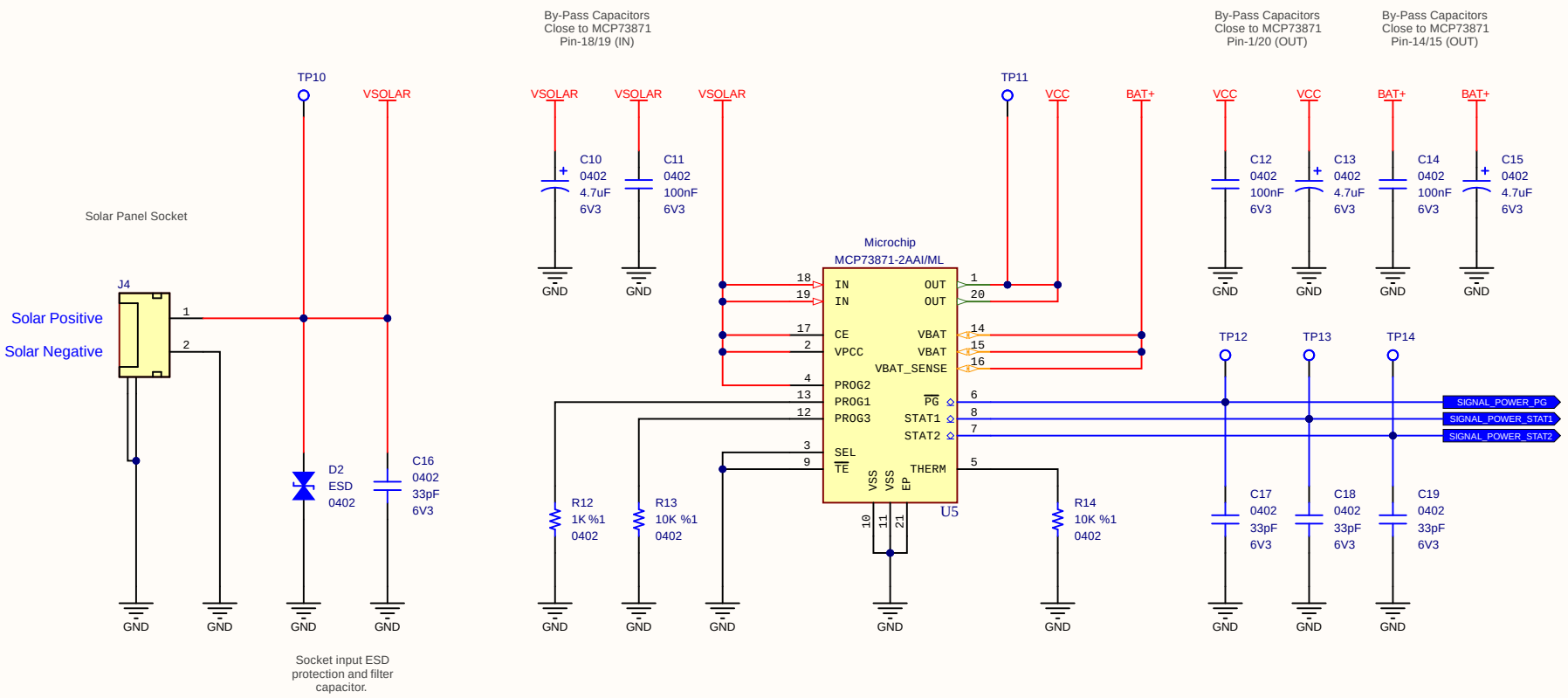
I2C Buffer



Title	Battery Measurement With I2C Isolation		
Size: A4	**Number:** AA001	**Revision:** B106AA	
Date: 6.06.2020	**Time:** 22:28:36	**Sheet** 4 of 37	
File:	C:\Altium Projects\STF\P102 - Weather Station\Modules\B106AA\Schematic\Battery Measurement.SchDoc		

A2

Ovoo Electronics
Küçük İhsaniye Mah.
Mızraklı Sok. No:15
Meram / Konya
Turkiye



SEL Pin : Input type selection (Low for USB port, High for other type of power source)

TE Pin : Enables Safety Timer when active Low.

PROG1 Pin : Fast charge current regulation setting with PROG1 = High. Preconditioning set point for both USB port and other type of power source. 1K = 1A charge current limit.

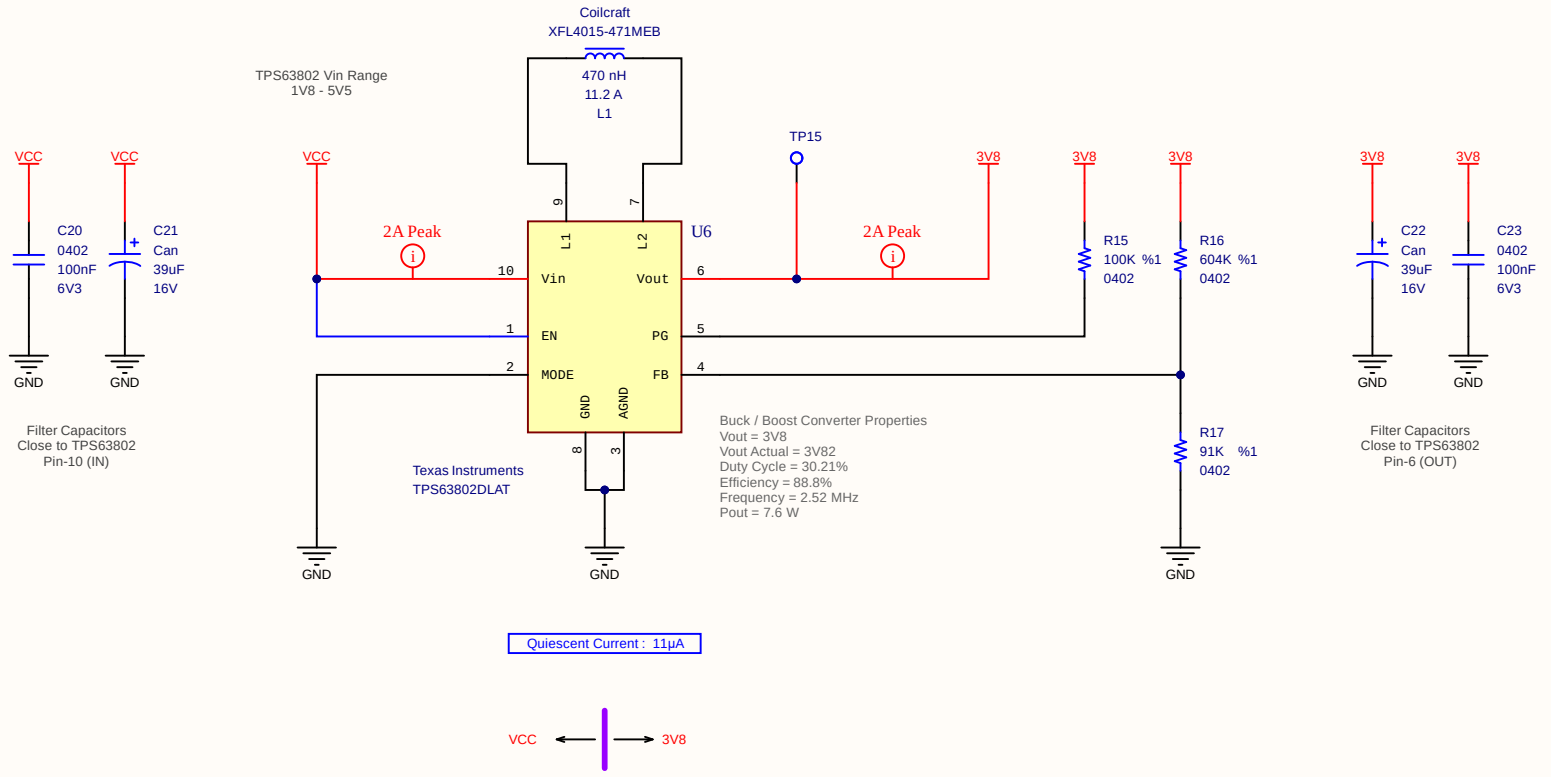
PROG2 Pin : USB port input current limit selection when PROG2 = HIGH. (Low = 100 mA, High = 500 mA)

PROG3 Pin : Termination set point for power source and USB port. Minimum charge current. 10K = 100 mA.

A3

Title	**Battery Charger**		
Size: A4	**Number:** AA001	**Revision:** B106AA	
Date: 6.06.2020	**Time:** 22:28:36	**Sheet** 5 of 37	
File: C:\Altium Projects\STF\P102 - Weather Station\Modules\B106AA\Schematic\Battery Charger.SchDoc			

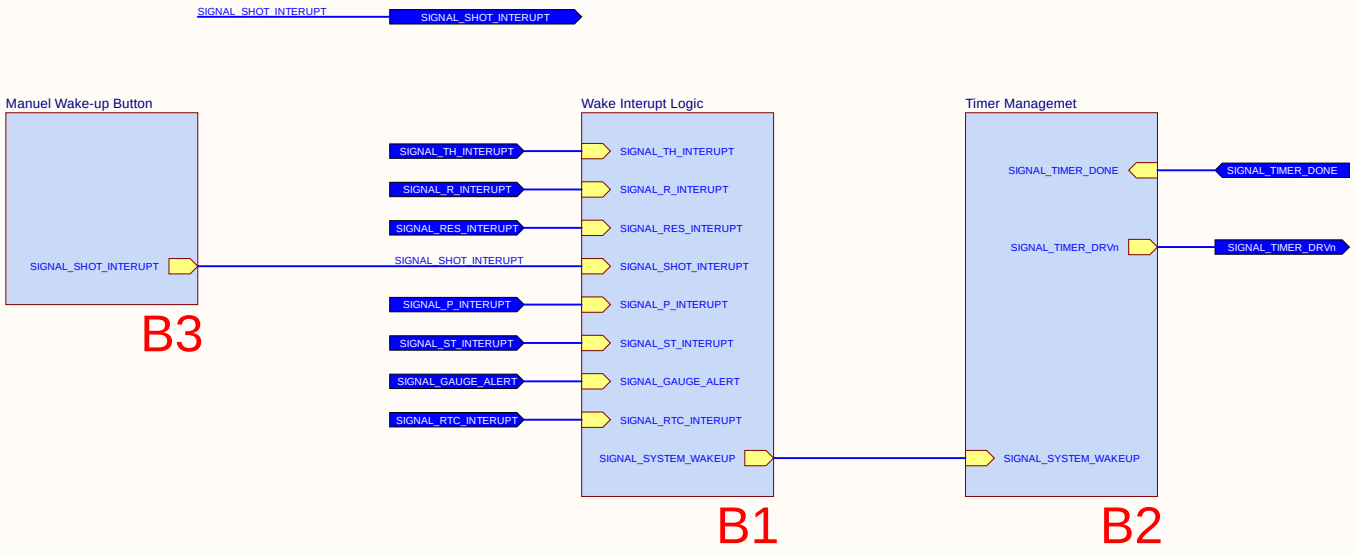
Ovoo Electronics
Küçük İhsaniye Mah.
Mızraklı Sok. No:15
Meram / Konya
Turkiye



A4

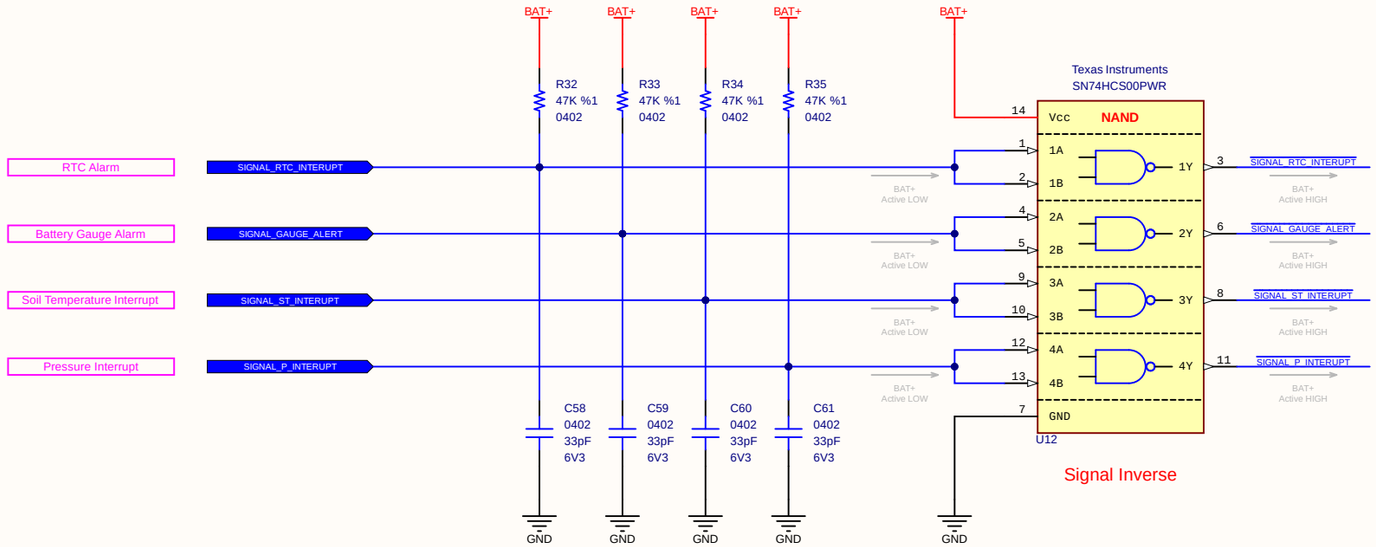
Title	**Buck Boost Converter**		
Size: A4	**Number:** AA001	**Revision:** B106AA	
Date: 6.06.2020	**Time:** 22:28:36	**Sheet** 6 of 37	
File: C:\Altium Projects\STF\P102 - Weather Station\Modules\B106AA\Schematic\Buck Boost Converter.SchDoc			

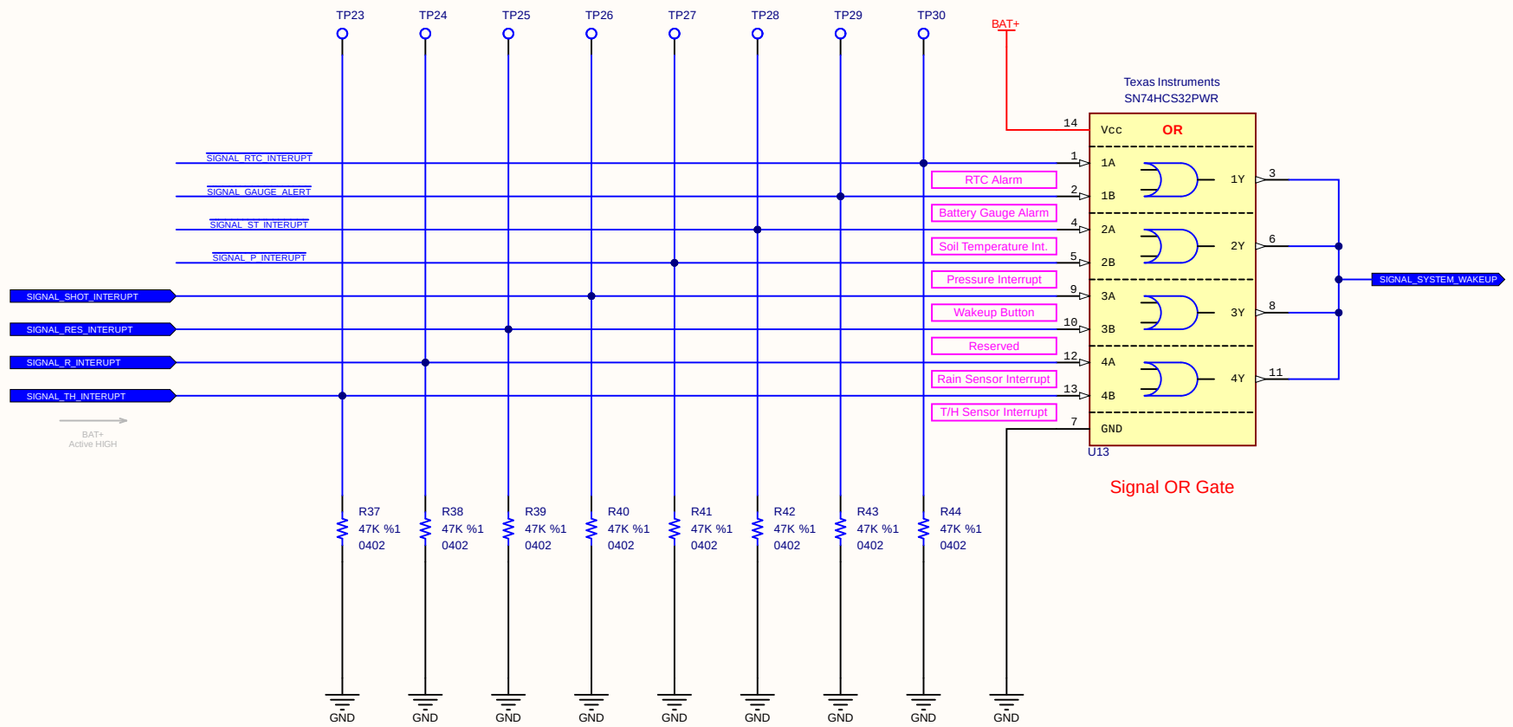
Ovoo Electronics
Küçük İhsaniye Mah.
Mızraklı Sok. No:15
Meram / Konya
Turkiye



Title	**System Timer Controller**		
Size: A4	**Number:** AA001	**Revision:** B106AA	
Date: 6.06.2020	**Time:** 22:28:36	**Sheet** 7 of 37	
File: C:\Altium Projects\STF\P102 - Weather Station\Modules\B106AA\Schematic\System Timer.SchDoc			

Ovoo Electronics
Küçük İhsaniye Mah.
Mızraklı Sok. No:15
Meram / Konya
Turkiye

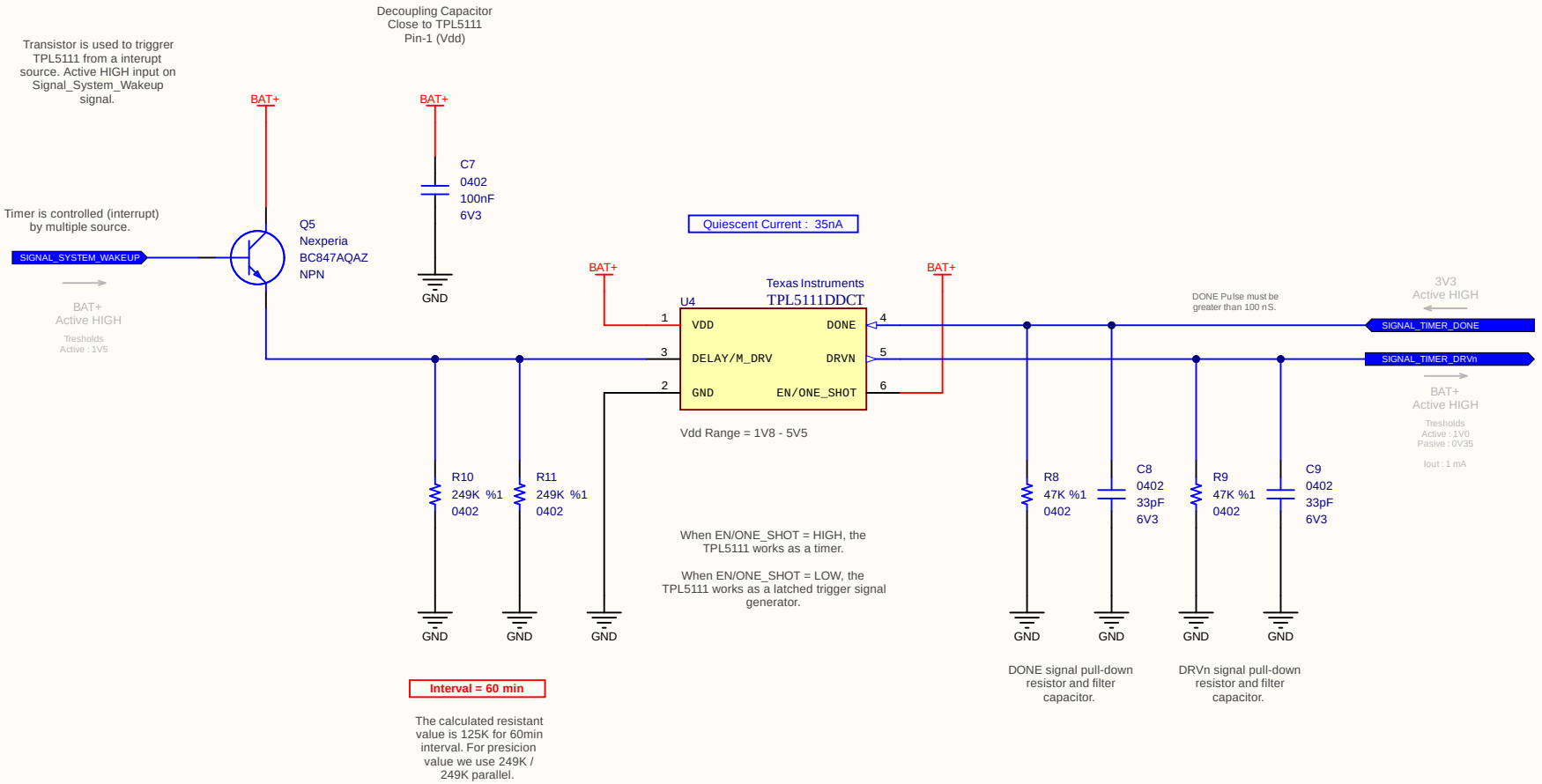




B1

Title	System Wake up Resources Logic Gates		
Size: A3	**Number:** AA001	**Revision:** B106AA	
Date: 6.06.2020	**Time:** 22:28:36	**Sheet** 8 of 37	
File:	C:\Altium Projects\STF\P102 - Weather Station\Modules\B106AA\Schematic\System Wake Interupt Logic.SchDoc		

Ovoo Electronics
Küçük İhsaniye Mah.
Mızraklı Sok. No:15
Meram / Konya
Turkiye



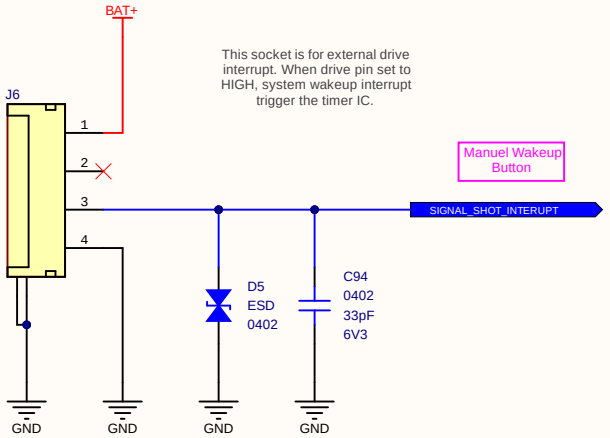
B2

Title	**Sleep Management (Timer)**		
Size: A4	**Number:** AA001	**Revision:** B106AA	
Date: 6.06.2020	**Time:** 22:28:36	**Sheet** 9 of 37	
File:	C:\Altium Projects\STF\P102 - Weather Station\Modules\B106AA\Schematic\Time Management.SchDoc		

Ovoo Electronics
Küçük İhsaniye Mah.
Mızraklı Sok. No:15
Meram / Konya
Turkiye

OVOO

External Wakeup Socket



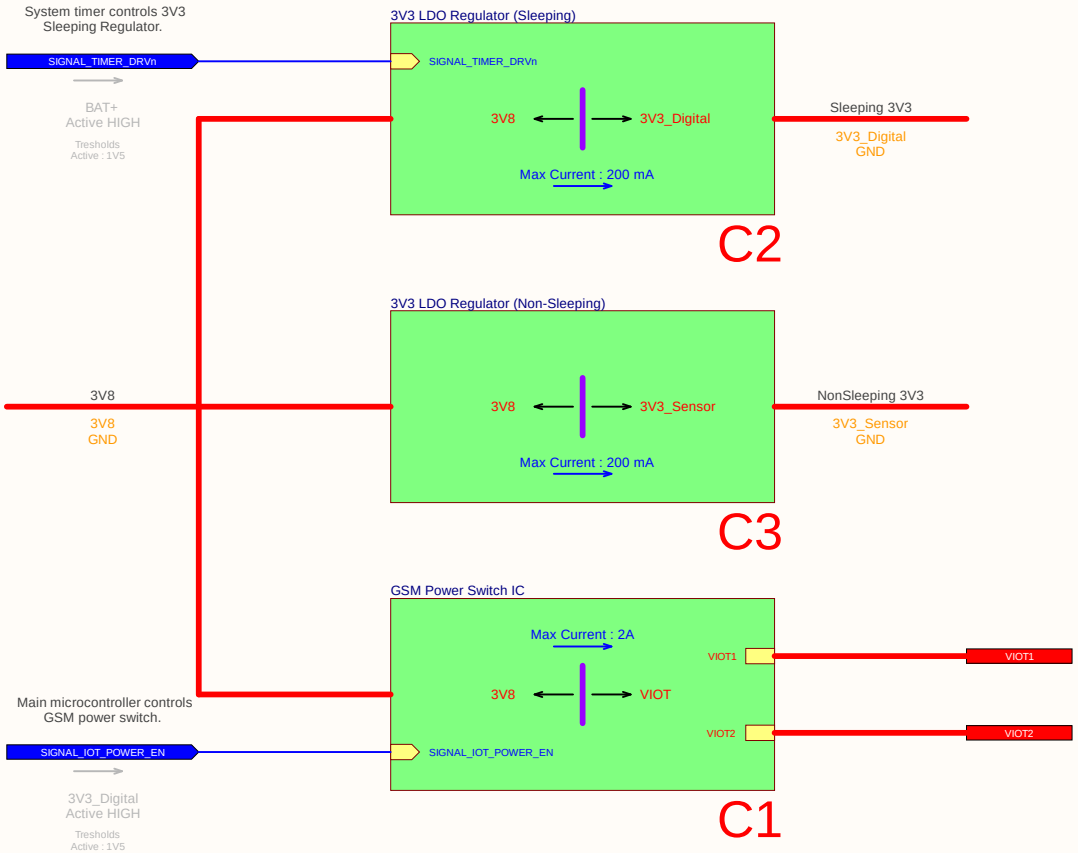
Socket input ESD protection.

B3

Title	**Manuel Wake-up Button**		
Size: A4	**Number:** AA001	**Revision:** B106AA	
Date: 6.06.2020	**Time:** 22:28:36	**Sheet** 10 of 37	
File:	C:\Altium Projects\STF\P102 - Weather Station\Modules\B106AA\Schematic\Manuel Wake-up and Latch.SchDoc		

Ovoo Electronics
Küçük İhsaniye Mah.
Mızraklı Sok. No:15
Meram / Konya
Turkiye

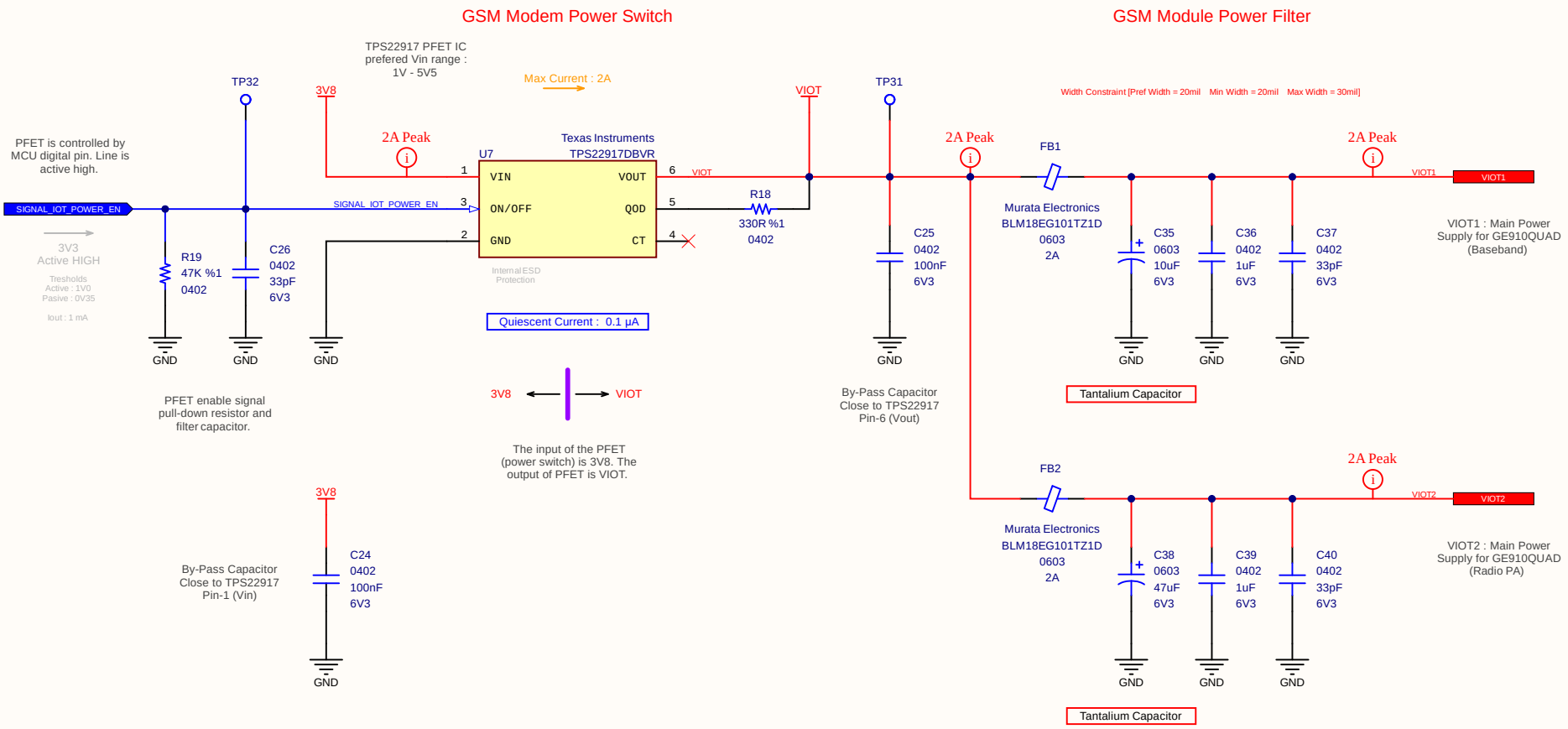
OVOO



Title	**System Power Regulators & GSM IoT Power Switch**		
Size: A4	**Number:** AA001	**Revision:** B106AA	
Date: 6.06.2020	**Time:** 22:28:36	**Sheet** 11 of 37	
File: C:\Altium Projects\STF\P102 - Weather Station\Modules\B106AA\Schematic\Power Regulator.SchDoc			

Ovoo Electronics
Küçük İhsaniye Mah.
Mızraklı Sok. No:15
Meram / Konya
Turkiye

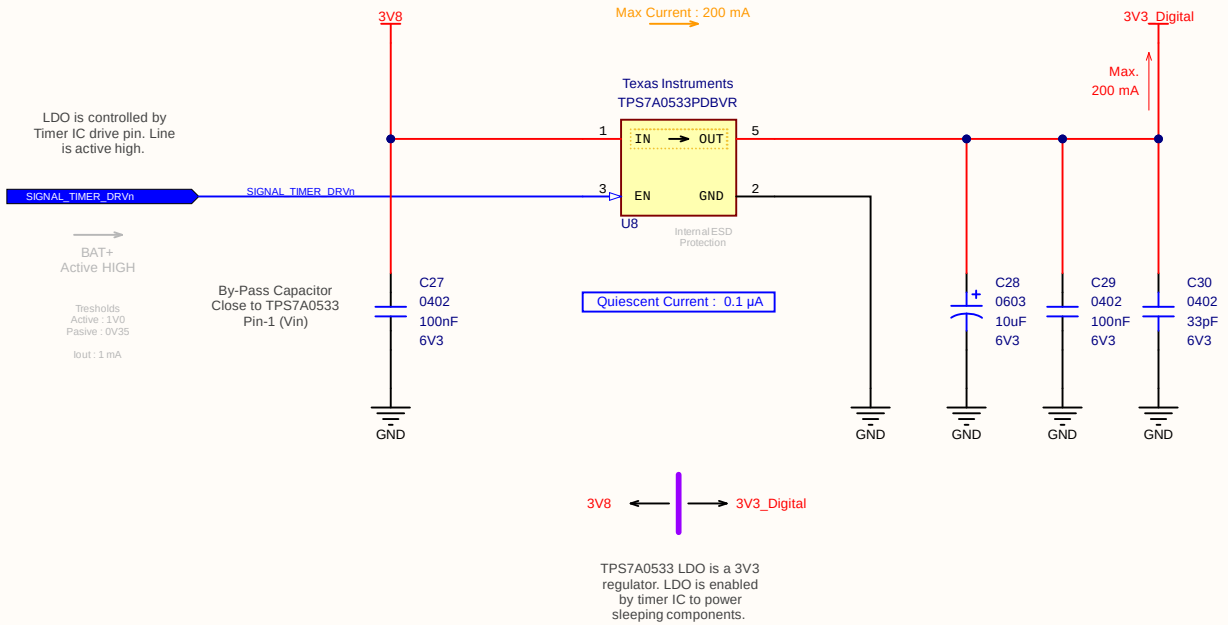
OVOO



C1

Title	GSM Module Power On/Off Switch IC & IoT Power Filter		
Size: A4	**Number:** AA001	**Revision:** B106AA	
Date: 6.06.2020	**Time:** 22:28:36	**Sheet** 12 of 37	
File: C:\Altium Projects\STF\P102 - Weather Station\Modules\B106AA\Schematic\GSM Power On-Off Switch IC.SchDoc			

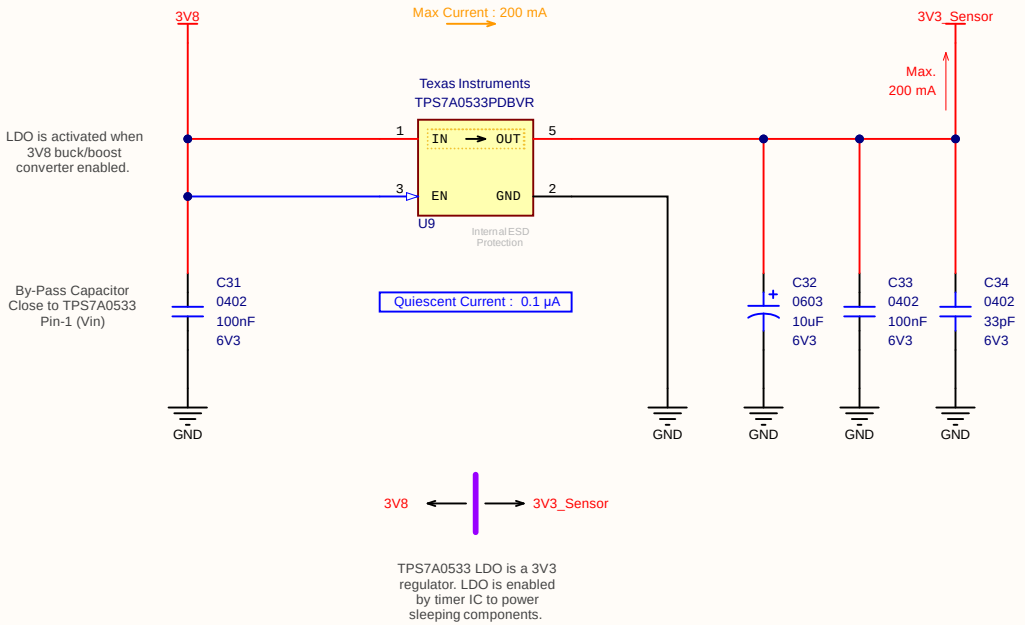
Ovoo Electronics
Küçük İhsaniye Mah.
Mızraklı Sok. No:15
Meram / Konya
Turkiye



C2

Title	3V3 LDO Voltage Regulator (Sleeping)		
Size: A4	**Number:** AA001	**Revision:** B106AA	
Date: 6.06.2020	**Time:** 22:28:37	**Sheet** 13 of 37	
File:	C:\Altium Projects\STF\P102 - Weather Station\Modules\B106AA\Schematic\3V3 LDO Regulator (Sleeping).SchDoc		

Ovoo Electronics
Küçük İhsaniye Mah.
Mızraklı Sok. No:15
Meram / Konya
Turkiye

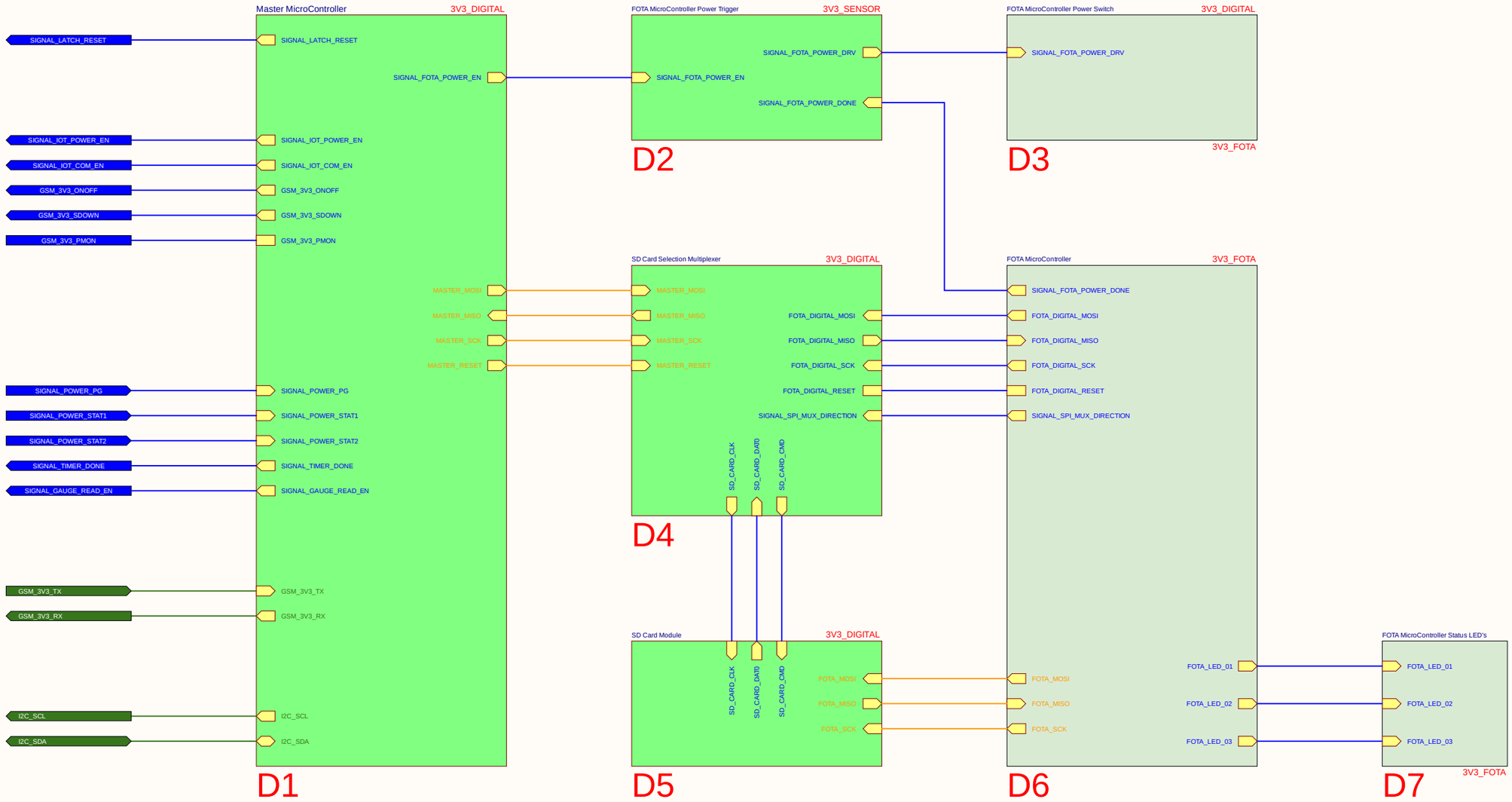


C3

Title	**3V3 LDO Voltage Regulator (NonSleeping)**		
Size: A4	**Number:** AA001	**Revision:** B106AA	
Date: 6.06.2020	**Time:** 22:28:37	**Sheet** 14 of 37	
File:	C:\Altium Projects\STF\P102 - Weather Station\Modules\B106AA\Schematic\3V3 LDO Regulator (NonSleeping).SchDoc		

Ovoo Electronics
Küçük İhsaniye Mah.
Mızraklı Sok. No:15
Meram / Konya
Turkiye

OVOO

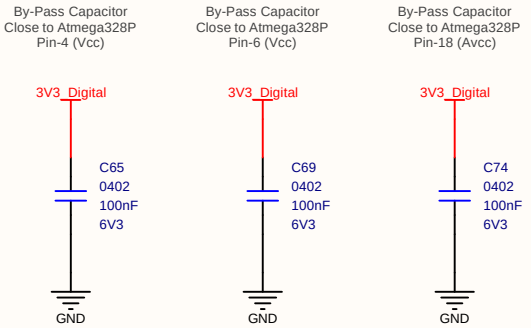


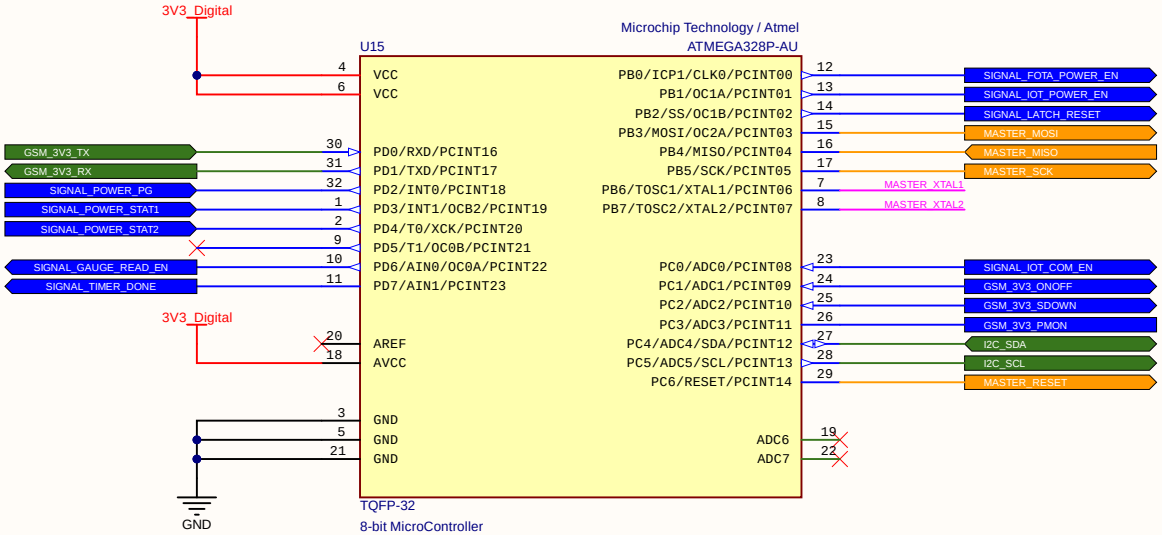
Title	Main Microcontroller & FOTA Microcontroller		
Size: A3	**Number:** AA001	**Revision:** B106AA	
Date: 6.06.2020	**Time:** 22:28:37	**Sheet** 15 of 37	
File:	C:\Altium Projects\STF\P102 - Weather Station\Modules\B106AA\Schematic\Microcontroller.SchDoc		

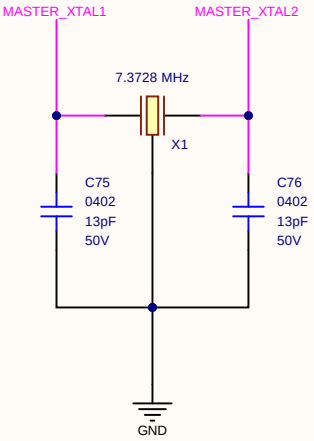
Ovoo Electronics
Küçük İhsaniye Mah.
Muzaklı Sok. No:15
Meram / Konya
Turkiye

B106AA Module have two on-board MCU.

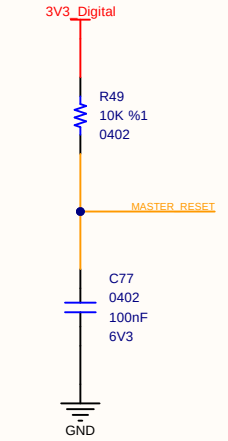
One is master microcontroller for sensor measurement, handling data and communicate with GSM modem (UART). We use ATMEGA328P-AU as master MCU with 7.3728 Mhz external crystal and 3V3 voltage level.







Master MCU is working at 7.3728 Mhz for minimise UART communication errors.

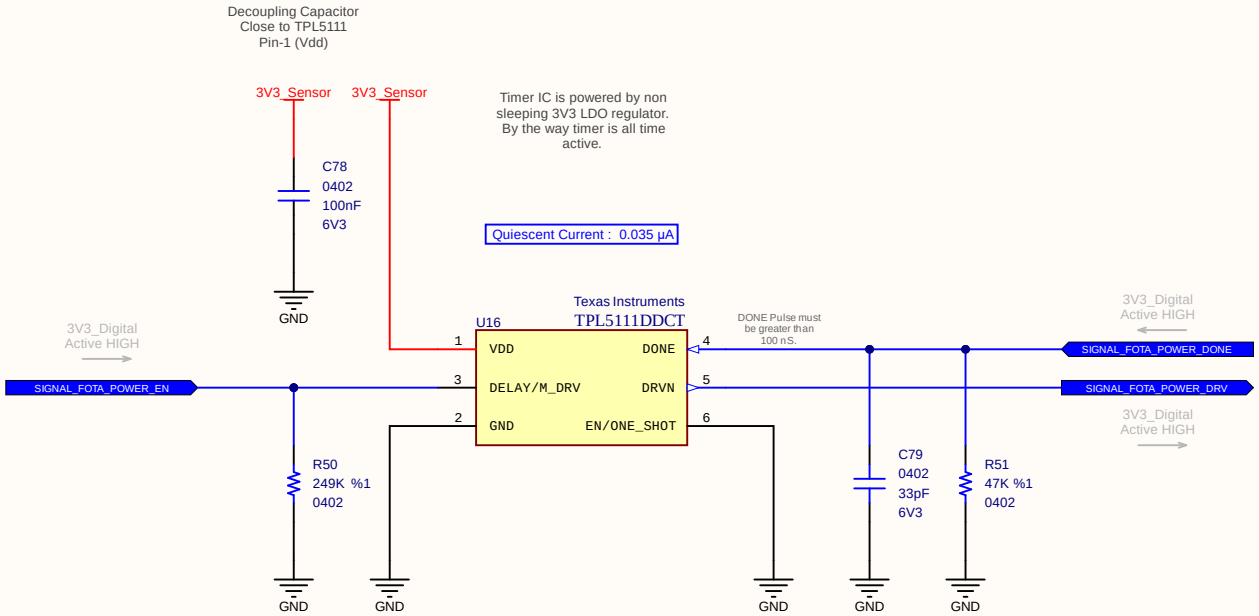


Master MCU Reset Line. Pull-up.

D1

Title	Master MicroController		
Size: A4	**Number:** AA001	**Revision:** B106AA	
Date: 6.06.2020	**Time:** 22:28:37	**Sheet** 16 of 37	
File:	C:\Altium Projects\STF\P102 - Weather Station\Modules\B106AA\Schematic\Master MicroController.SchDoc		

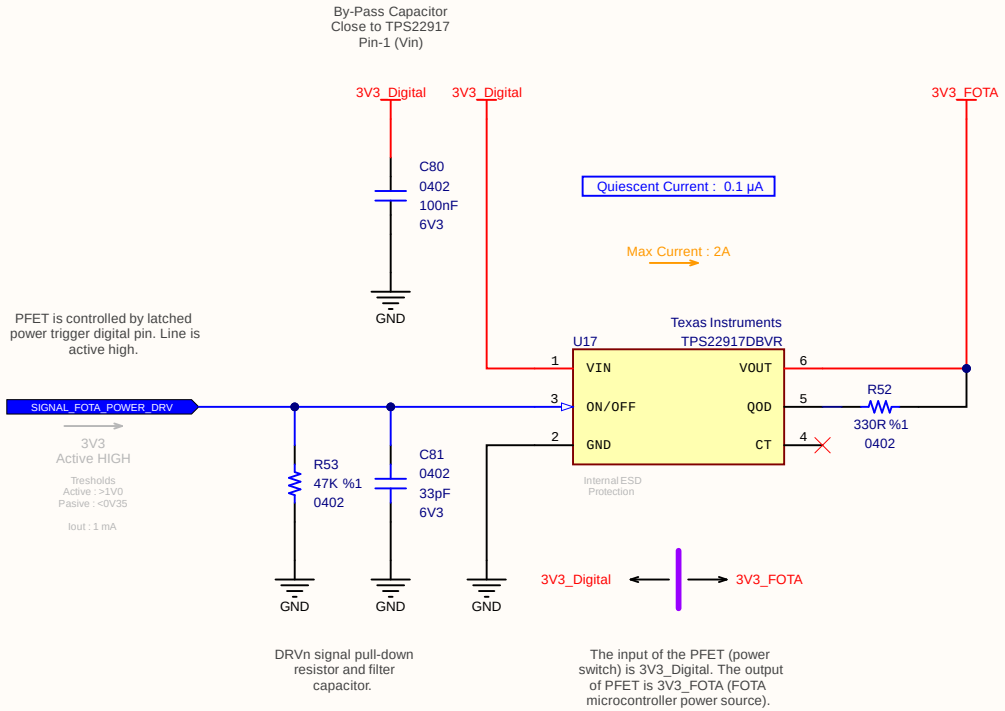
Ovoo Electronics
Küçük İhsaniye Mah. Mızraklı Sok. No:15
Meram / Konya
Turkiye



D2

Title	FOTA MicroController Latched Power Trigger		
Size: A4	**Number:** AA001	**Revision:** B106AA	
Date: 6.06.2020	**Time:** 22:28:37	**Sheet** 17 of 37	
File:	C:\Altium Projects\STF\P102 - Weather Station\Modules\B106AA\Schematic\FOTA MicroController Power Trigger.SchDoc		

Ovoo Electronics
Küçük İhsaniye Mah.
Mızraklı Sok. No:15
Meram / Konya
Turkiye

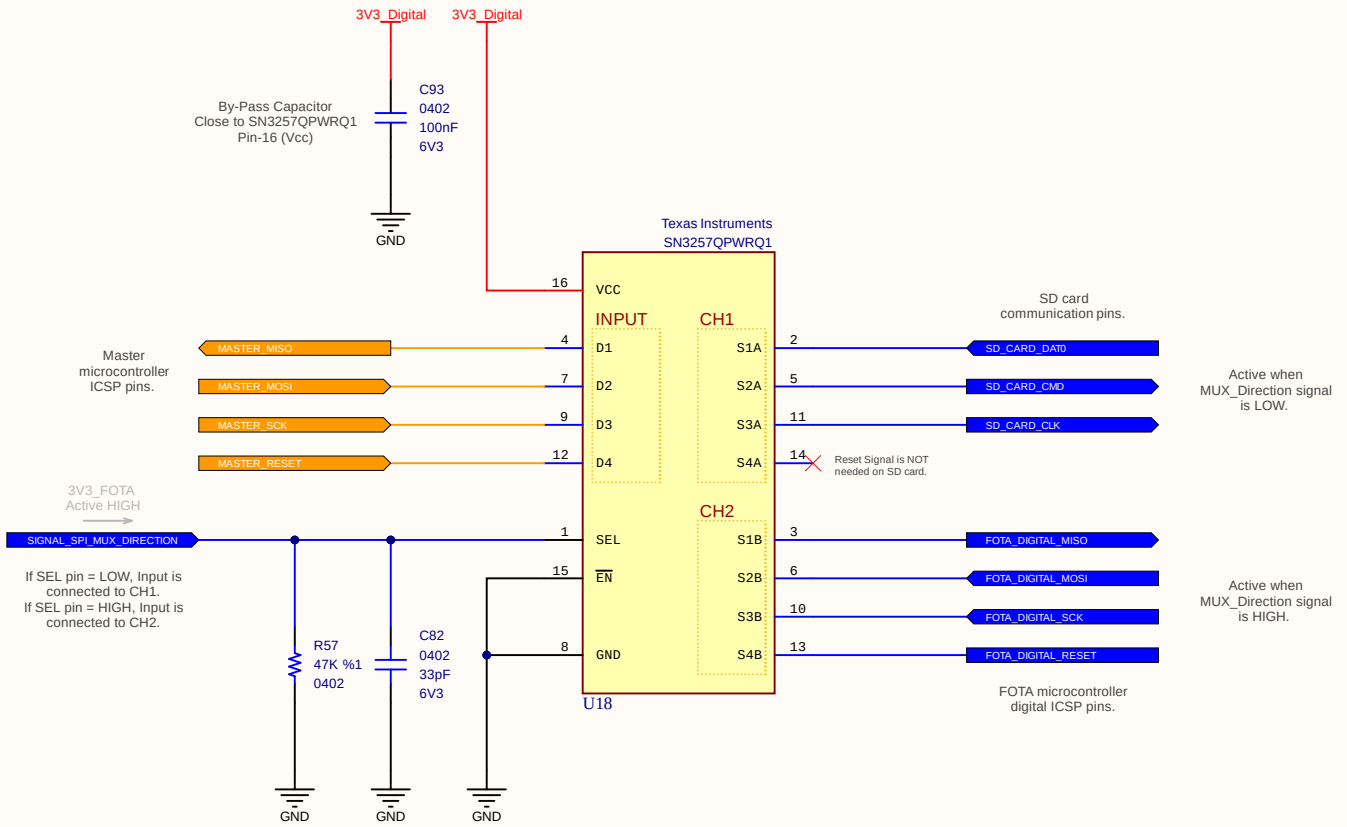


D3

Title	FOTA MicroController Power Switch		
Size: A4	**Number:** AA001	**Revision:** B106AA	
Date: 6.06.2020	**Time:** 22:28:37	**Sheet** 18 of 37	
File:	C:\Altium Projects\STF\P102 - Weather Station\Modules\B106AA\Schematic\FOTA MicroController Power Switch.SchDoc		

Ovoo Electronics
Küçük İhsaniye Mah.
Mızraklı Sok. No:15
Meram / Konya
Turkiye

OVOO

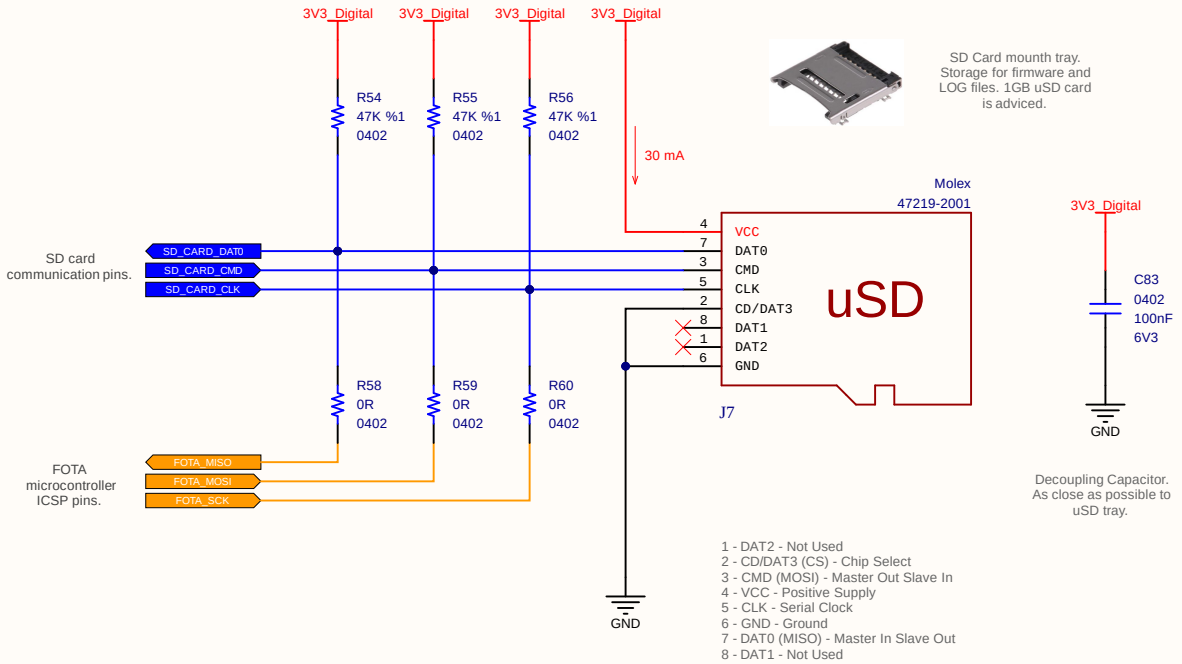


D4

Title	SD/ICSP Selection Multiplexer		
Size: A4	**Number:** AA001	**Revision:** B106AA	
Date: 6.06.2020	**Time:** 22:28:37	**Sheet** 19 of 37	
File:	C:\Altium Projects\STF\P102 - Weather Station\Modules\B106AA\Schematic\SD Card Selection Multiplexer.SchDoc		

Ovoo Electronics
Küçük İhsaniye Mah.
Mızraklı Sok. No:15
Meram / Konya
Turkiye

OVOO



D5

Title	Micro SD Card Module		
Size: A4	**Number:** AA001	**Revision:** B106AA	
Date: 6.06.2020	**Time:** 22:28:37	**Sheet** 20 of 37	
File:	C:\Altium Projects\STF\P102 - Weather Station\Modules\B106AA\Schematic\SD Card Module.SchDoc		

Ovoo Electronics
Küçük İhsaniye Mah.
Mızraklı Sok. No:15
Meram / Konya
Turkiye

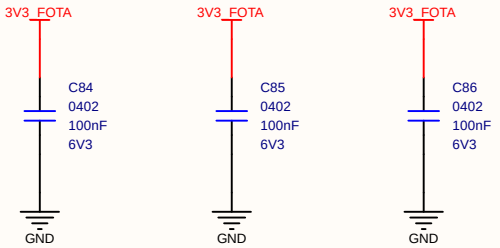
B106AA Module have two on-board MCU.

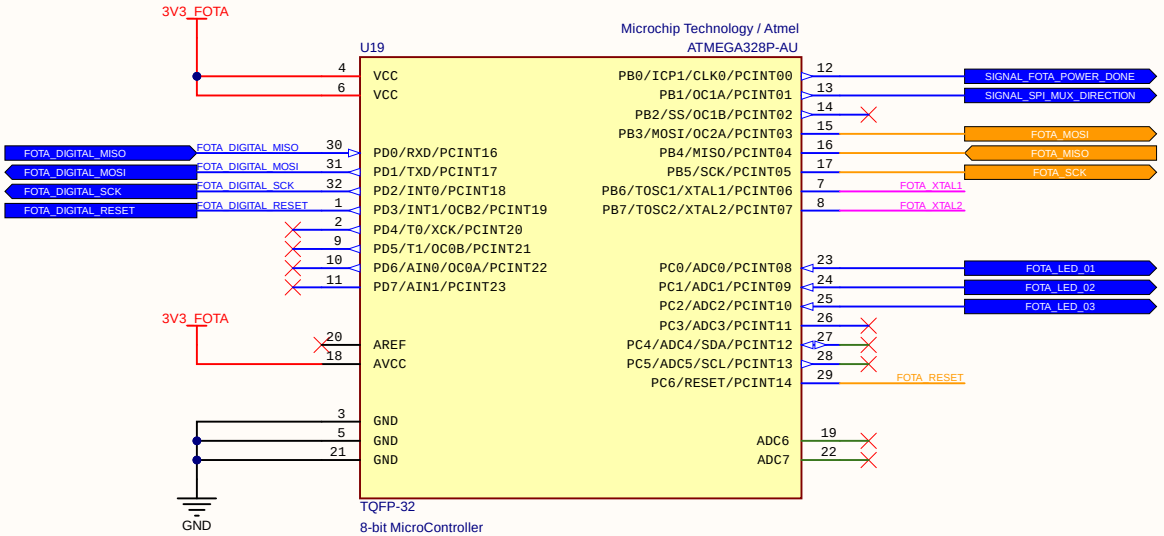
Second microcontroller is a firmware over the air controller. This MCU is burn firmware to the main MCU.

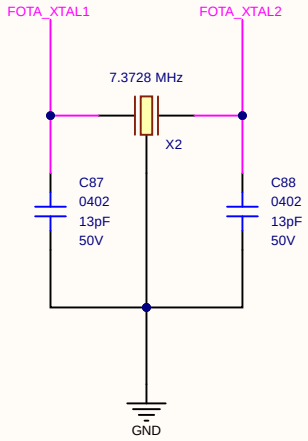
By-Pass Capacitor Close to Atmega328P Pin-4 (Vcc)

By-Pass Capacitor Close to Atmega328P Pin-6 (Vcc)

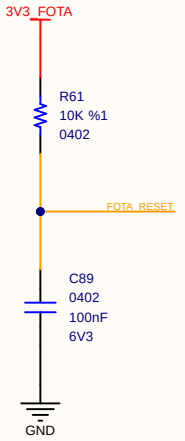
By-Pass Capacitor Close to Atmega328P Pin-18 (Avcc)







FOTA MCU is working at 7.3728 Mhz.

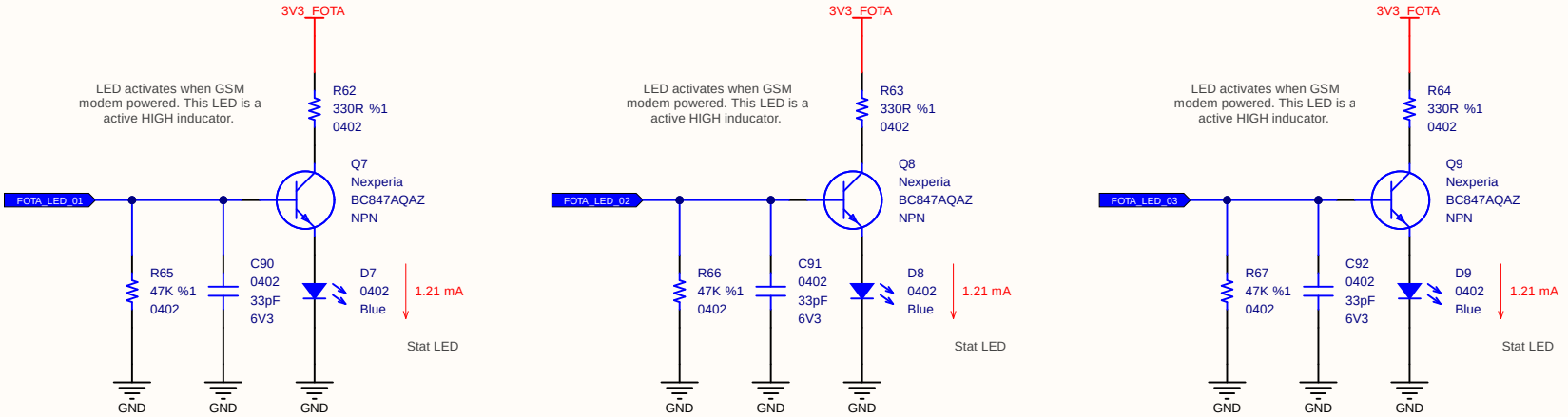


FOTA MCU Reset Line. Pull-up.

D6

Title	FOTA MicroController		
Size: A4	Number: AA001	Revision: B106AA	
Date: 6.06.2020	Time: 22:28:37	Sheet 21 of 37	
File: C:\Altium Projects\STF\P102 - Weather Station\Modules\B106AA\Schematic\FOTA MicroController.SchDoc			

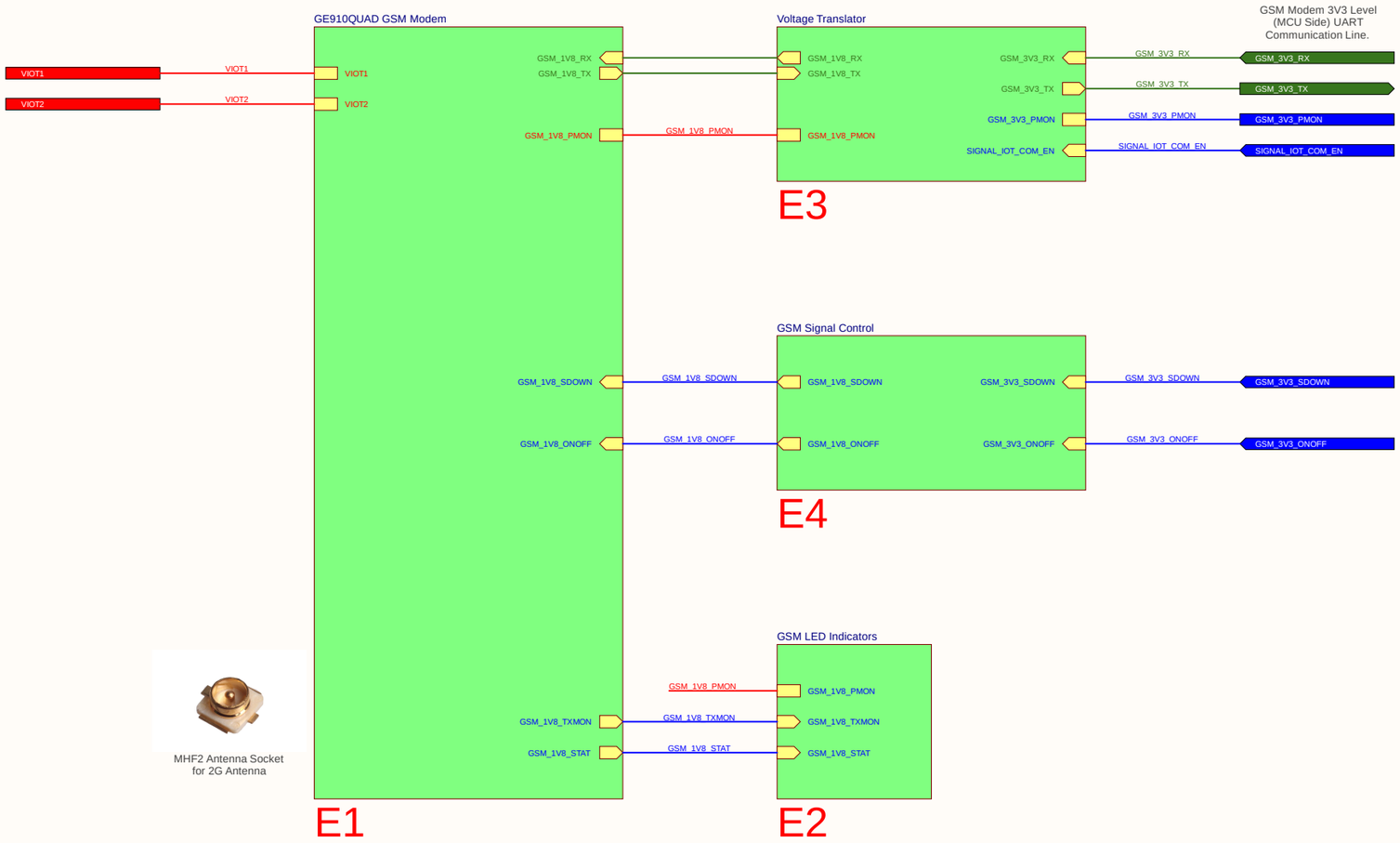
Ovoo Electronics
Küçük İhsaniye Mah.
Mızraklı Sok. No:15
Meram / Konya
Turkiye



D7

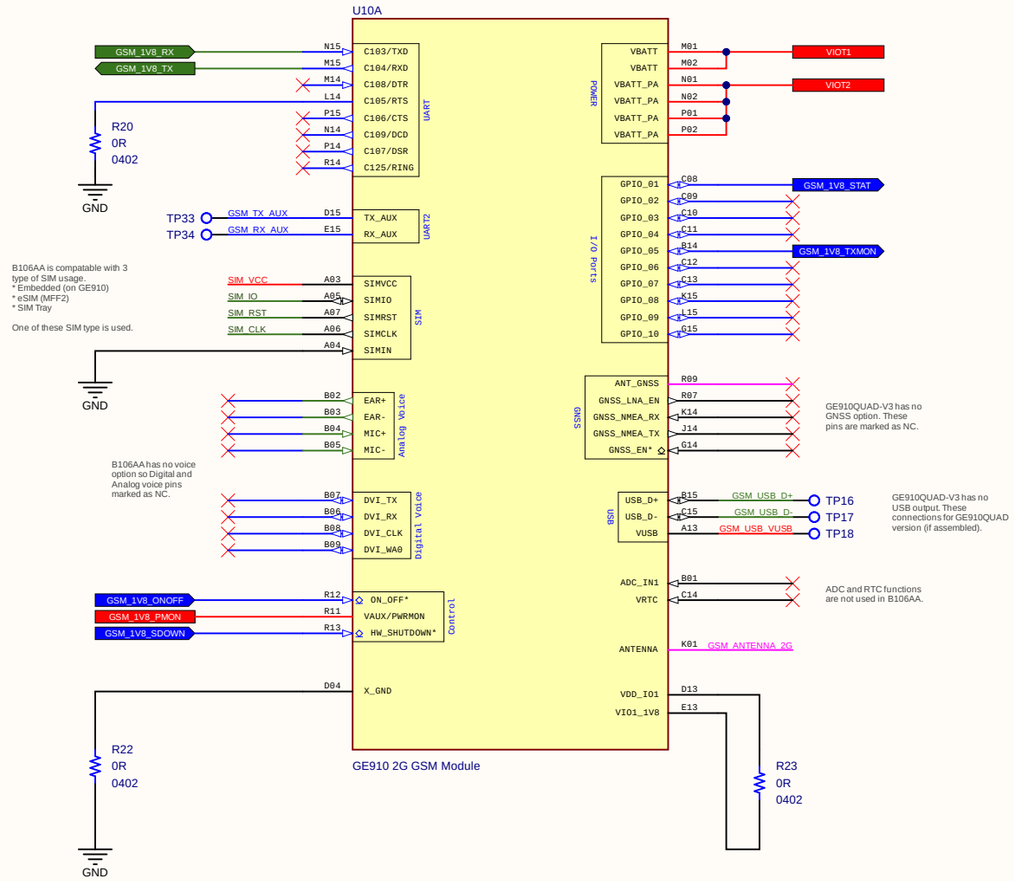
Title	FOTA Microcontroller Status LED's		
Size: A4	**Number:** AA001	**Revision:** B106AA	
Date: 6.06.2020	**Time:** 22:28:37	**Sheet** 22 of 37	
File:	C:\Altium Projects\STF\P102 - Weather Station\Modules\B106AA\Schematic\FOTA MicroController Status LEDs.SchDoc		

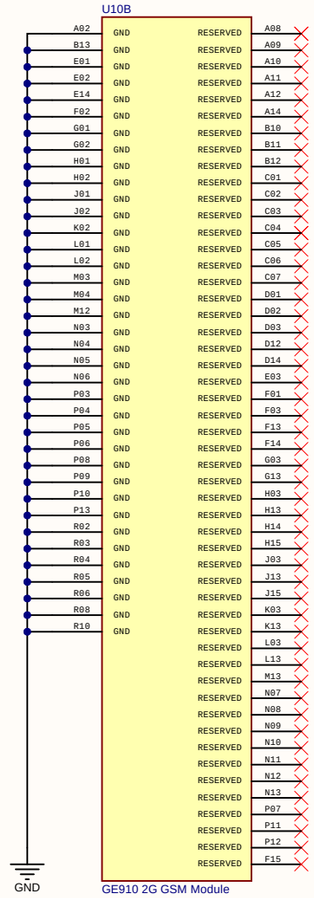
Ovoo Electronics
Küçük İhsaniye Mah.
Mızraklı Sok. No:15
Meram / Konya
Turkiye



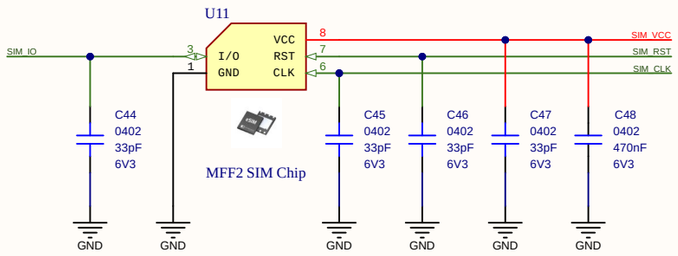
MHF2 Antenna Socket
for 2G Antenna

Title GSM IoT Block Diagram			**Ovoo Electronics** Küçük İhsaniye Mah. Muzaklı Sok. No:15 Meram / Konya Turkiye
Size: A3	**Number:** AA001	**Revision:** B106AA	
Date: 6.06.2020	**Time:** 22:28:37	**Sheet** 23 of 37	
File: C:\Altium Projects\STF\P102 - Weather Station\Modules\B106AA\Schematic\GSM IoT.SchDoc			





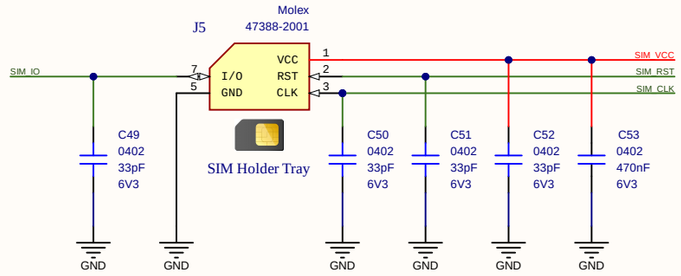
OnBoard eSIM Chip



External SIM (MFF2) is only assembled when GE910QUAD-V3 (not simwise) module is assembled.

SIM_VCC capacitor is chosed according Telit SIM integration guide.

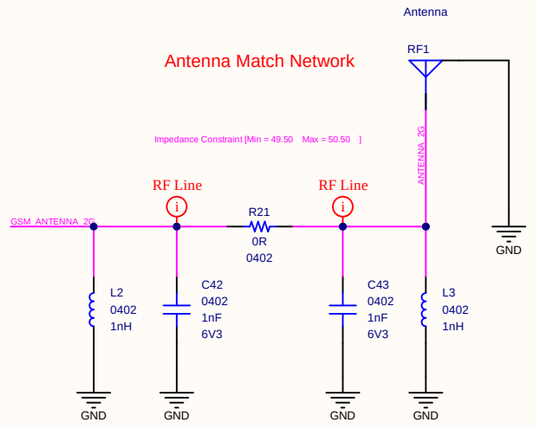
OnBoard Sim Tray



SIM Tray is only assembled when Simwise or E-Sim is not used.

SIM_VCC capacitor is chosed according Telit SIM integration guide.

Antenna Match Network

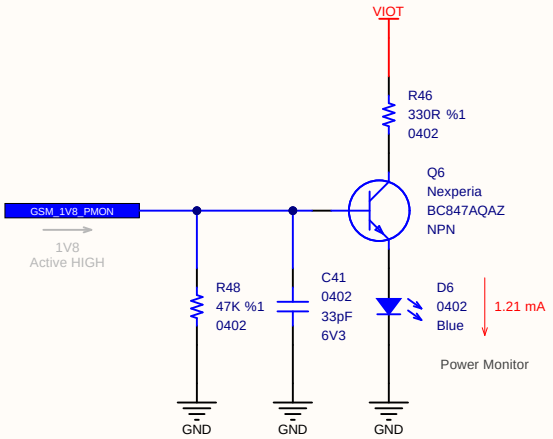


RF Matching network circuit is not placed on production. Only 0R resistor is placed.

E1

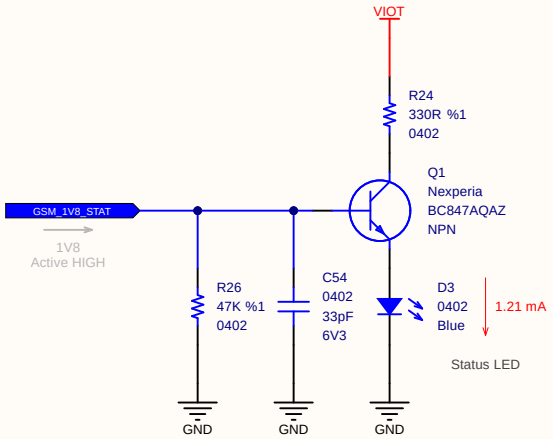
Title GE910 GSM Modem & SIM			**Ovoo Electronics** Küçük İhsaniye Mah. Mızraklı Sok. No:15 Meram / Konya Turkiye
Size: A3	**Number:** AA001	**Revision:** B106AA	
Date: 6.06.2020	**Time:** 22:28:37	**Sheet** 24 of 37	
File: C:\Altium Projects\STF\P102 - Weather Station\Modules\B106AA\Schematic\GE910QUAD Modem.SchDoc			

GSM Power Monitor LED



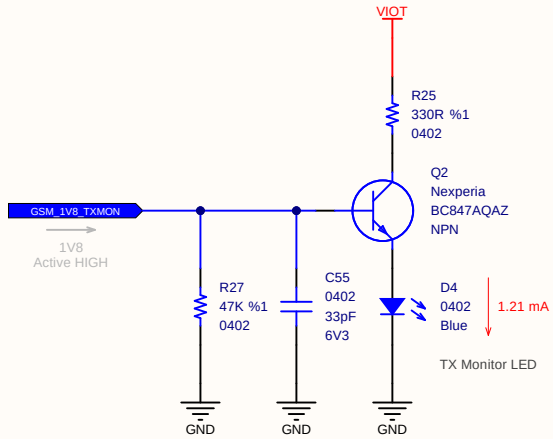
LED activates when GSM modem powered. This LED is a active HIGH inducator.

GSM Connection Status LED



LED activates according to connection. Fast blinking LED is indicates searching GSM connection. Slow blinking LED is indicates GSM connection is established.

RF Tx Monitor LED



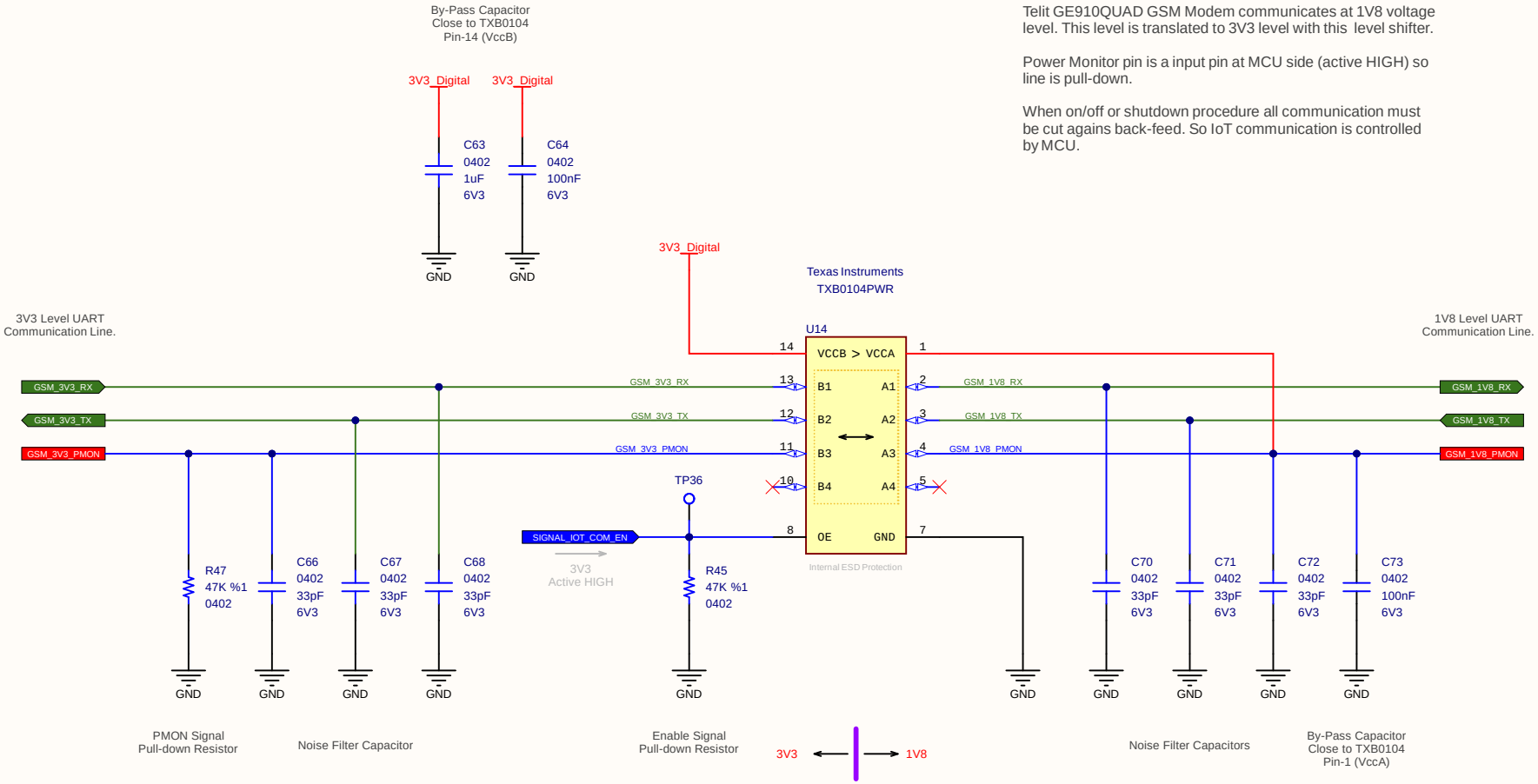
LED activates when GSM modem sending data to internet.

E2

Title	GSM Modem Signal Indicator LED's		
Size: A4	**Number:** AA001	**Revision:** B106AA	
Date: 6.06.2020	**Time:** 22:28:37	**Sheet** 25 of 37	
File:	C:\Altium Projects\STF\P102 - Weather Station\Modules\B106AA\Schematic\GSM LED Indicators.SchDoc		

Ovoo Electronics
Küçük İhsaniye Mah.
Mızraklı Sok. No:15
Meram / Konya
Turkiye

OVOO



Telit GE910QUAD GSM Modem communicates at 1V8 voltage level. This level is translated to 3V3 level with this level shifter.

Power Monitor pin is a input pin at MCU side (active HIGH) so line is pull-down.

When on/off or shutdown procedure all communication must be cut agains back-feed. So IoT communication is controlled by MCU.

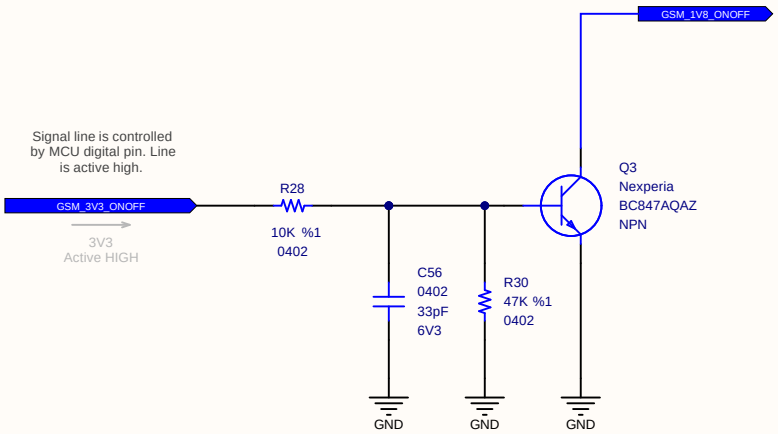
E3

Title	3V3 - 1V8 Voltage Level Translator		
Size: A4	**Number:** AA001	**Revision:** B106AA	
Date: 6.06.2020	**Time:** 22:28:37	**Sheet** 26 of 37	
File: C:\Altium Projects\STF\P102 - Weather Station\Modules\B106AA\Schematic\Bidirectional Voltage Translator.SchDoc			

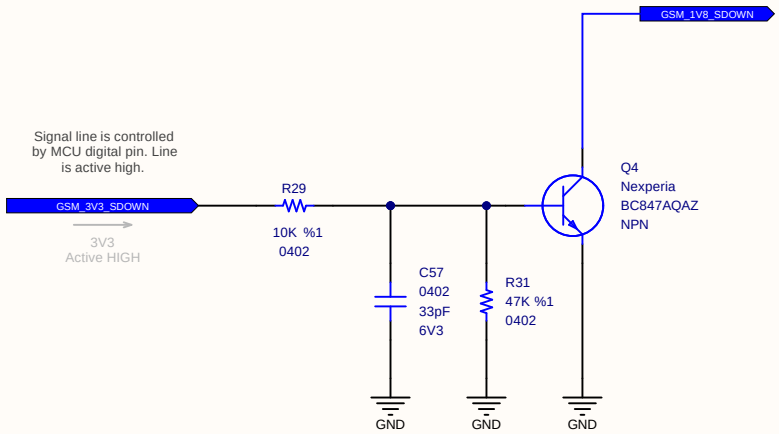
Ovoo Electronics
Küçük İhsaniye Mah.
Mızraklı Sok. No:15
Meram / Konya
Turkiye

OVOO

GSM Module On/Off Signal



GSM Module Shut Down Signal



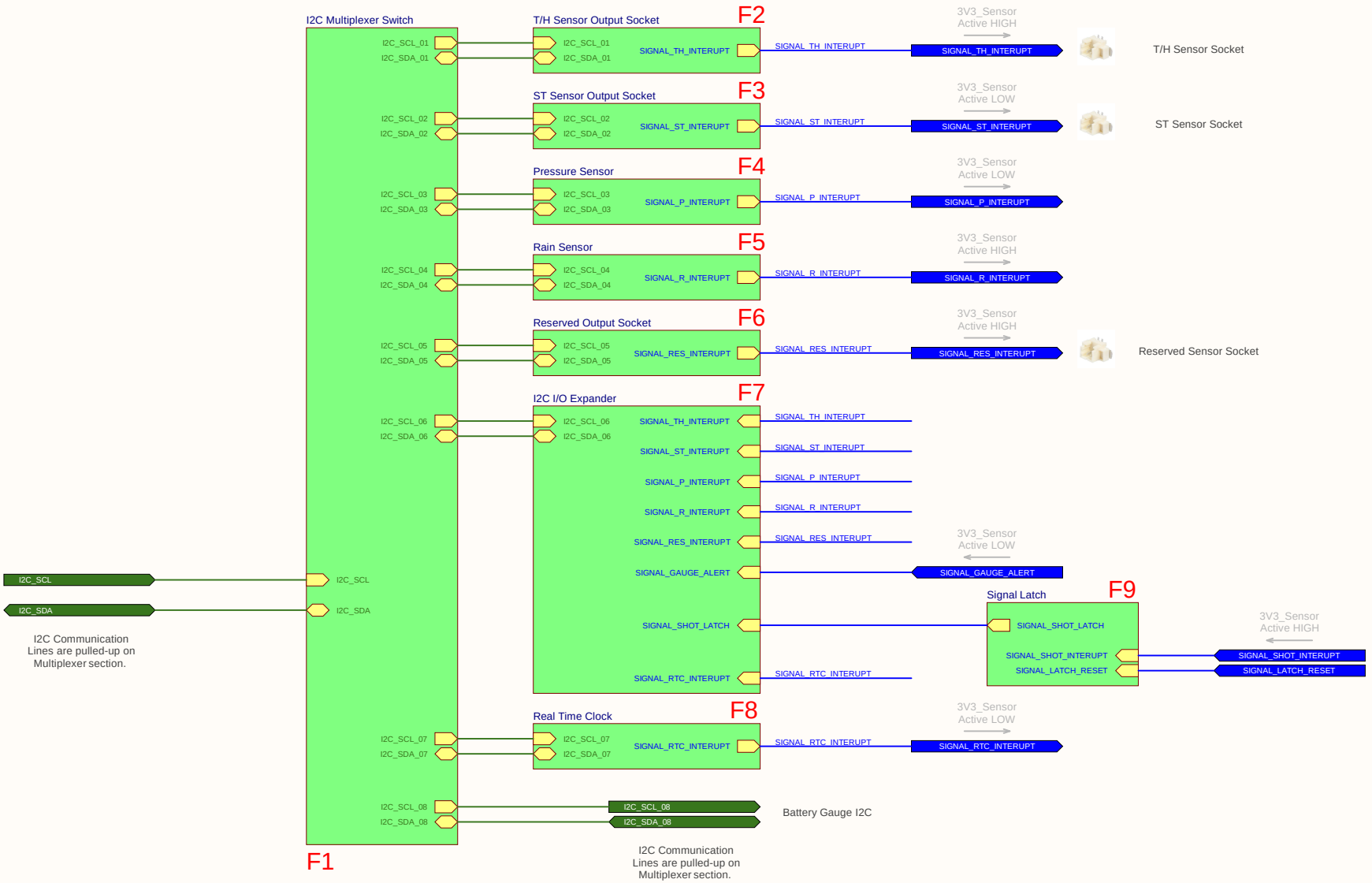
GE910 GSM Modem have an On/Off pin for power on. To turn on the GE910 the pad ON-OFF* must be tied low for at least 5 seconds and then released. The maximum current that can be drained from the ON-OFF* pad is 0.2mA. This pin is a open collector pin so tie this pin to GND via a transistor.

GE910QUAD GSM modem has a "Shut Down" pin for unconditional shut down. The unconditional hardware shutdown must always be implemented on the boards and the software must use it as an emergency exit procedure. To turn off modem tie this pin to GND for 200mS. This pin is a open collector pin so tie this pin to GND via a transistor.

E4

Title	GSM Control Signal Management		
Size: A4	**Number:** AA001	**Revision:** B106AA	
Date: 6.06.2020	**Time:** 22:28:37	**Sheet** 27 of 37	
File:	C:\Altium Projects\STF\P102 - Weather Station\Modules\B106AA\Schematic\GSM Signal Control.SchDoc		

Ovoo Electronics
Küçük İhsaniye Mah.
Mızraklı Sok. No:15
Meram / Konya
Turkiye



Title	I2C Sensor Network		
Size: A4	**Number:** AA001	**Revision:** B106AA	
Date: 6.06.2020	**Time:** 22:28:37	**Sheet** 28 of 37	
File: C:\Altium Projects\STF\P102 - Weather Station\Modules\B106AA\Schematic\I2C Sensor Network.SchDoc			

Ovoo Electronics
Küçük İhsaniye Mah.
Mızraklı Sok. No:15
Meram / Konya
Turkiye

Decoupling Capacitor.
As close as possible to
TCA9547 pin-24.

I2C 3V3 Pull-up
Resistors.

Power Consumption : 15 µA

Texas Instruments
TCA9548APWR

3V3_Digital

C109
0402
100nF
6V3

R36
10K %1
0402

R68
10K %1
0402

R69
10K %1
0402

R70
10K %1
0402

R71
10K %1
0402

R72
10K %1
0402

R73
10K %1
0402

R74
10K %1
0402

R75
10K %1
0402

R76
10K %1
0402

R77
10K %1
0402

R78
10K %1
0402

R79
10K %1
0402

R80
10K %1
0402

R81
10K %1
0402

R82
10K %1
0402

R83
10K %1
0402

R84
10K %1
0402

R89
10K %1
0402

C110
0402
100nF
6V3

GND

I2C_SCL
I2C_SDA

VCC
SCL
SDA
RESET
A0
A1
A2
GND
IN
Adr.

CH0 SCL0 SDA0
CH1 SCL1 SDA1
CH2 SCL2 SDA2
CH3 SCL3 SDA3
CH4 SCL4 SDA4
CH5 SCL5 SDA5
CH6 SCL6 SDA6
CH7 SCL7 SDA7

I2C_SCL_01 I2C_SDA_01 — T/H Sensor
I2C_SCL_02 I2C_SDA_02 — ST Sensor
I2C_SCL_03 I2C_SDA_03 — P Sensor
I2C_SCL_04 I2C_SDA_04 — R Sensor
I2C_SCL_05 I2C_SDA_05 — RES Sensor
I2C_SCL_06 I2C_SDA_06 — I/O Expander
I2C_SCL_07 I2C_SDA_07 — RTC
I2C_SCL_08 I2C_SDA_08 — Battery Gauge

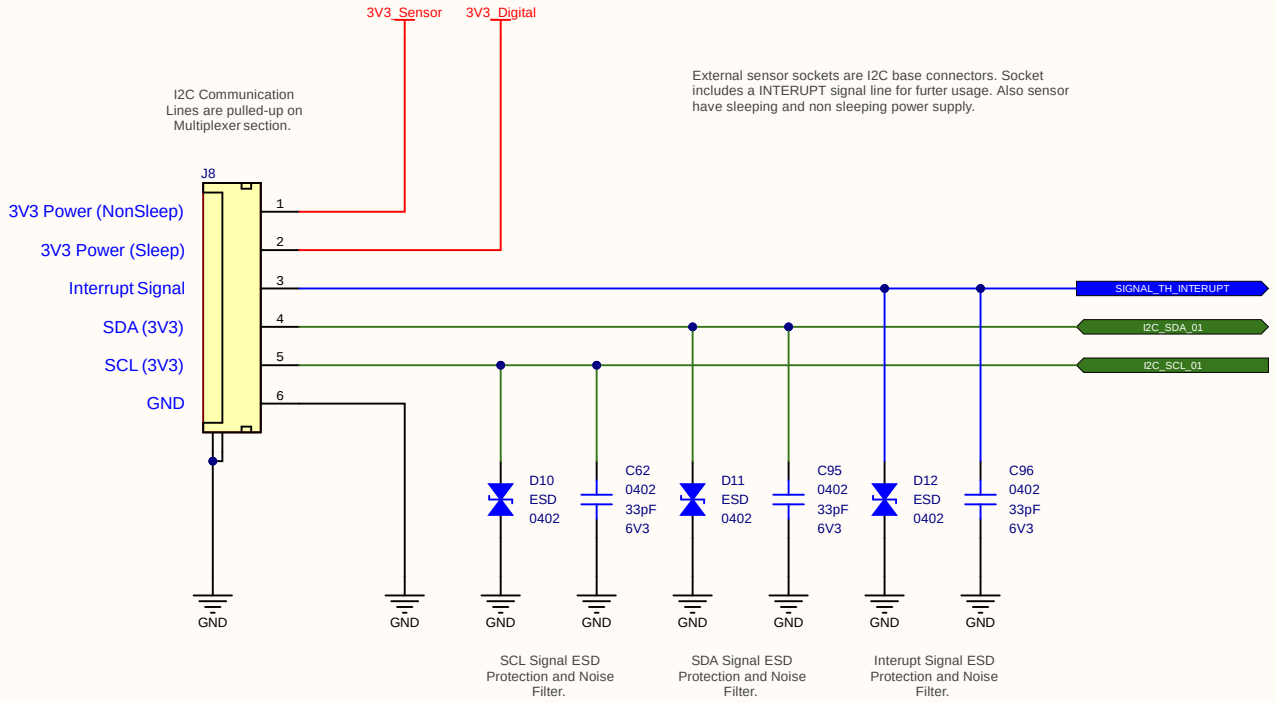
U20

Vcc Range = 1V65 - 5V5

F1

Title	I2C 8 Channel Multiplexer		
Size: A3	**Number:** AA001	**Revision:** B106AA	
Date: 6.06.2020	**Time:** 22:28:38	**Sheet** 29 of 37	
File:	C:\Altium Projects\STF\P102 - Weather Station\Modules\B106AA\Schematic\I2C Multiplexer.SchDoc		

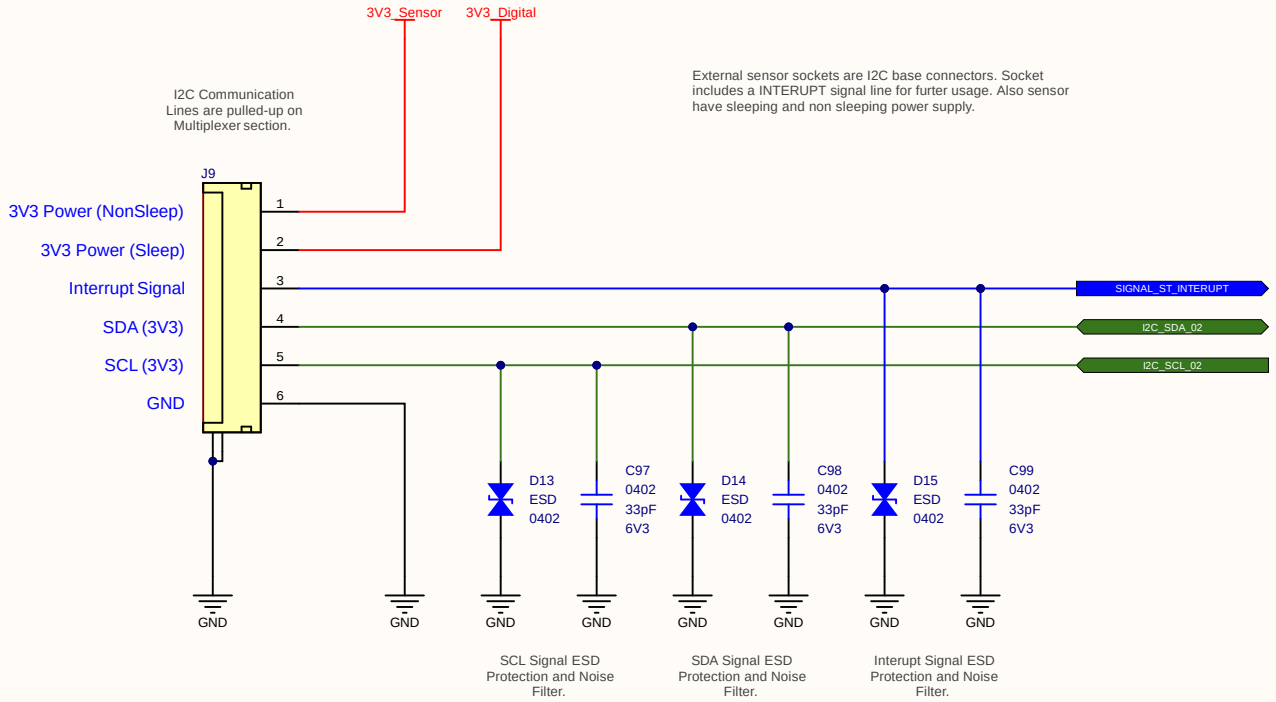
Ovoo Electronics
Küçük İhsaniye Mah.
Mızraklı Sok. No:15
Meram / Konya
Turkiye



F2

Title	Air Temperature & Air Humidity Sensor Output Socket		
Size: A4	**Number:** AA001	**Revision:** B106AA	
Date: 6.06.2020	**Time:** 22:28:38	**Sheet** 30 of 37	
File: C:\Altium Projects\STF\P102 - Weather Station\Modules\B106AA\Schematic\TH Sensor Output Socket.SchDoc			

Ovoo Electronics
Küçük İhsaniye Mah.
Mızraklı Sok. No:15
Meram / Konya
Turkiye

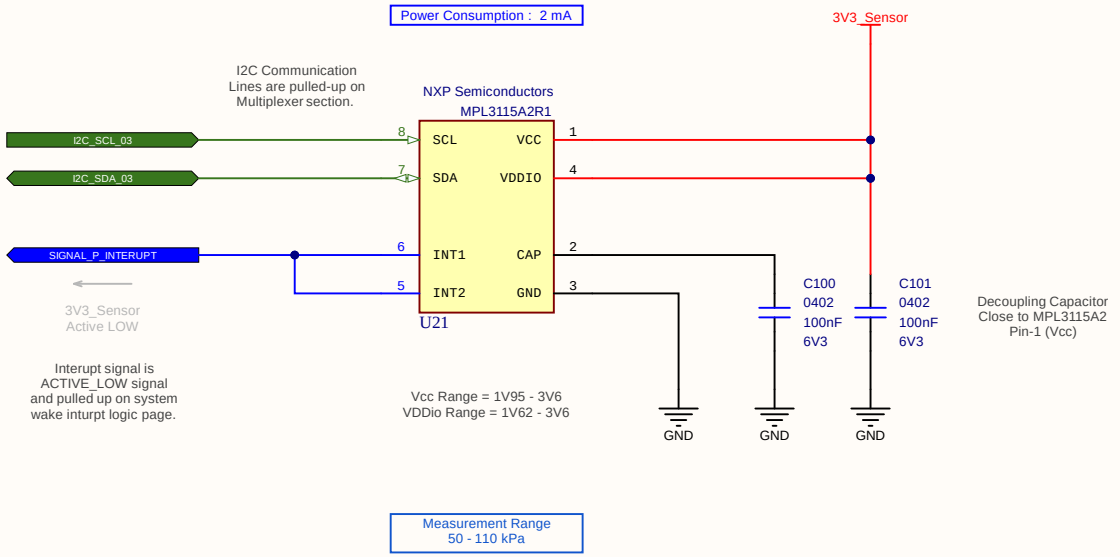


F3

Title	Soil Temperature Sensor Output Socket		
Size: A4	**Number:** AA001	**Revision:** B106AA	
Date: 6.06.2020	**Time:** 22:28:38	**Sheet** 31 of 37	
File:	C:\Altium Projects\STF\P102 - Weather Station\Modules\B106AA\Schematic\ST Sensor Output Socket.SchDoc		

Ovoo Electronics
Küçük İhsaniye Mah.
Mızraklı Sok. No:15
Meram / Konya
Turkiye

OVOO

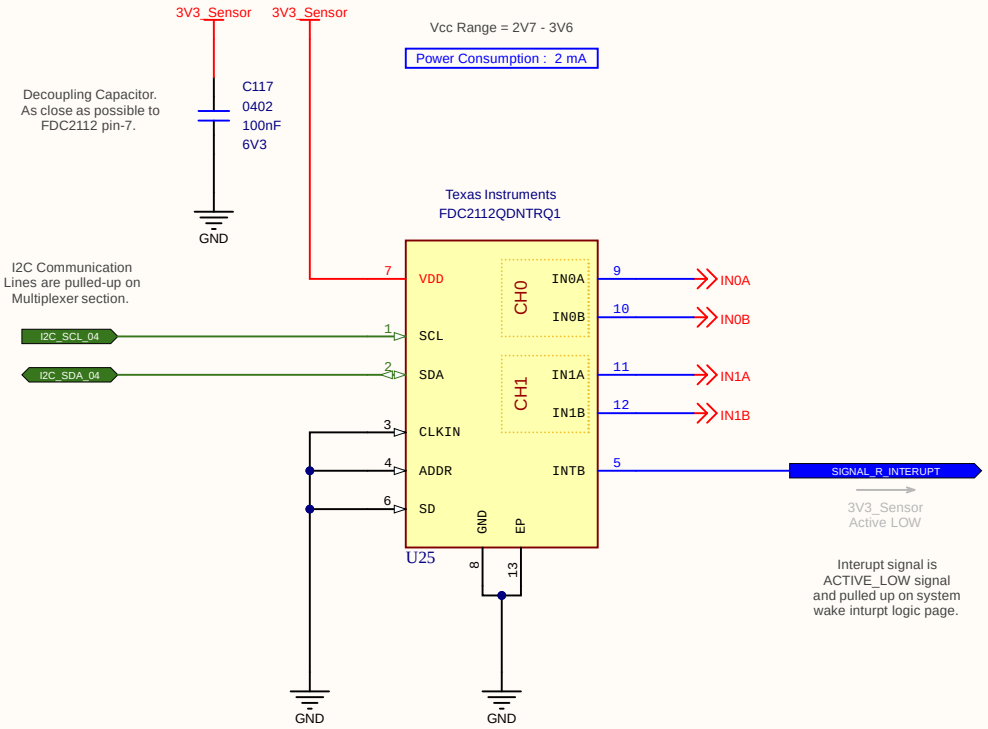


F4

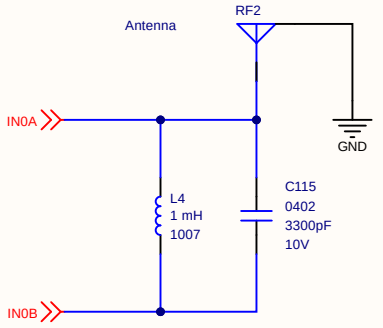
Title	**Pressure Sensor**		
Size: A4	**Number:** AA001	**Revision:** B106AA	
Date: 6.06.2020	**Time:** 22:28:38	**Sheet** 32 of 37	
File:	C:\Altium Projects\STF\P102 - Weather Station\Modules\B106AA\Schematic\Pressure Sensor.SchDoc		

Ovoo Electronics
Küçük İhsaniye Mah.
Mızraklı Sok. No:15
Meram / Konya
Turkiye

OVOO



Rain Sensor Plate 1

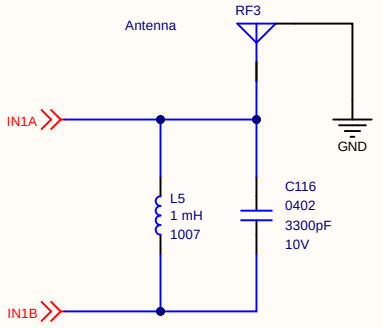


Sense Plate Socket

Sensing plates are connected to B106 with shilded cable. Both side of cable are MHF4 type RF connector. Outher shield of connector connected to GND. L-C tank is on B106 side.

Sensing plates are flex PCB and stick to inside of enclosure.

Rain Sensor Plate 2



Sense Plate Socket

Sensing plates are connected to B106 with shilded cable. Both side of cable are MHF4 type RF connector. Outher shield of connector connected to GND. L-C tank is on B106 side.

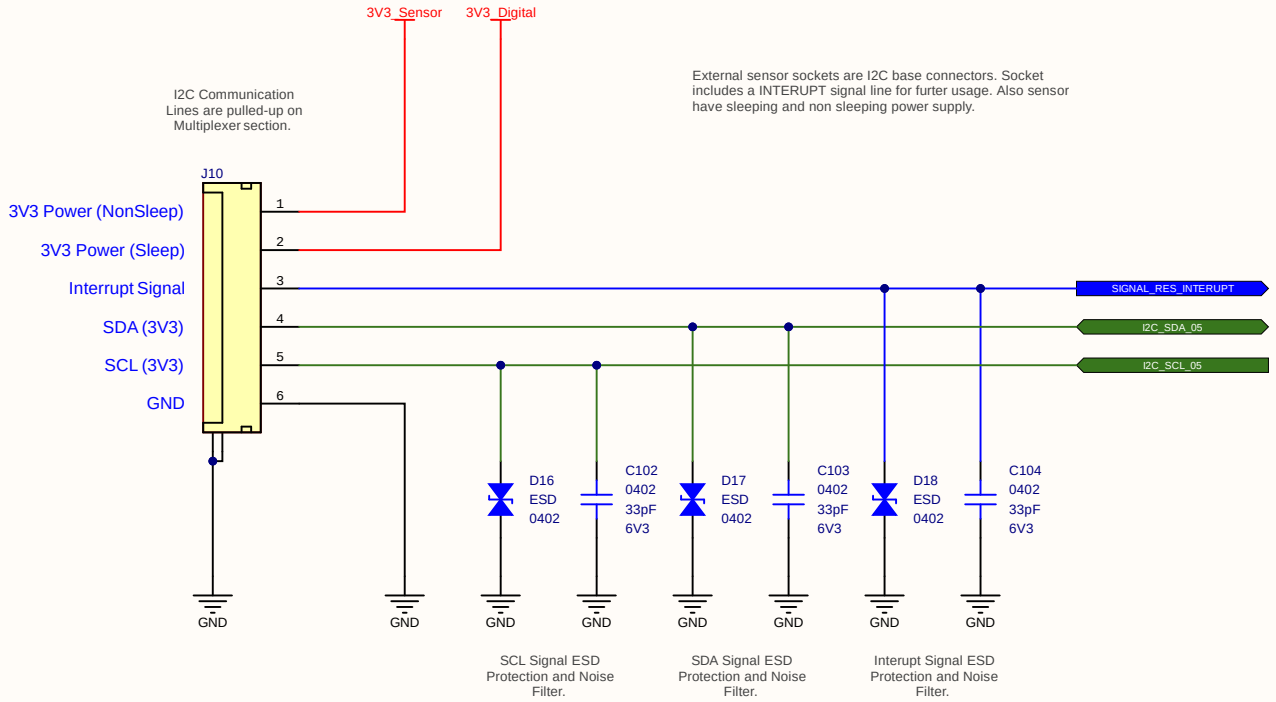
Sensing plates are flex PCB and stick to inside of enclosure.

F5

Title	Capacitive Rain Sensor		
Size: A4	**Number:** AA001	**Revision:** B106AA	
Date: 6.06.2020	**Time:** 22:28:38	**Sheet** 33 of 37	
File:	C:\Altium Projects\STF\P102 - Weather Station\Modules\B106AA\Schematic\Capacitive Rain Sensor.SchDoc		

Ovoo Electronics
Küçük İhsaniye Mah.
Mızraklı Sok. No:15
Meram / Konya
Turkiye

OVOO

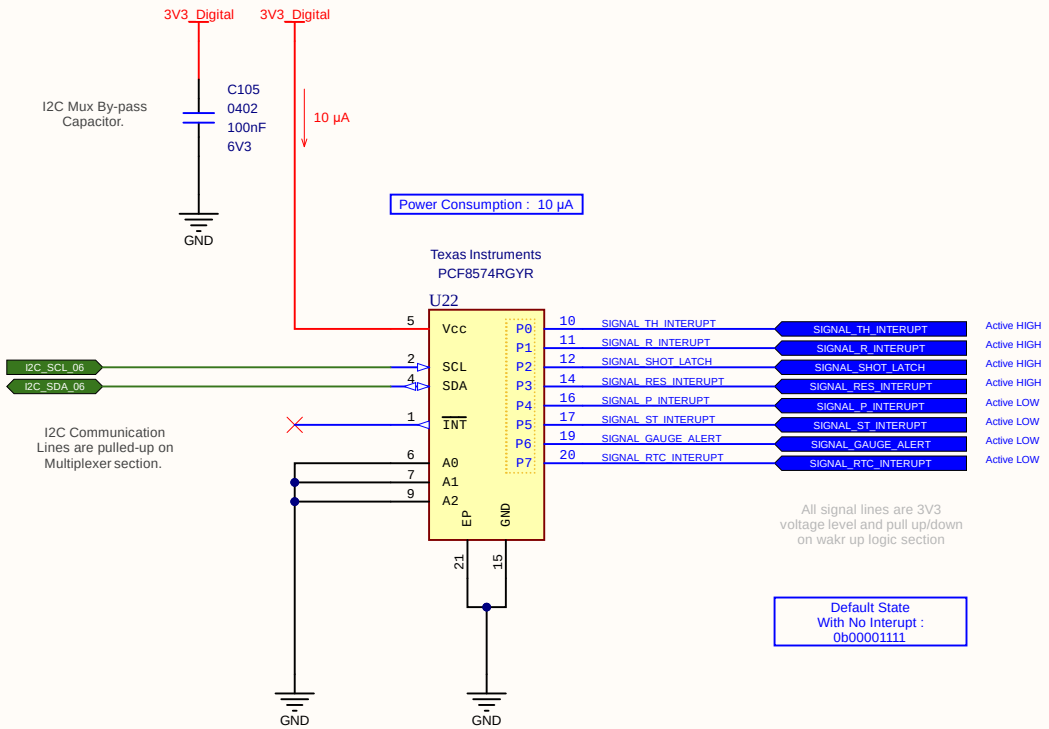


F6

Title	Reserved Sensor Output Socket		
Size: A4	**Number:** AA001	**Revision:** B106AA	
Date: 6.06.2020	**Time:** 22:28:38	**Sheet** 34 of 37	
File: C:\Altium Projects\STF\P102 - Weather Station\Modules\B106AA\Schematic\Reserved Sensor Output Socket.SchDoc			

Ovoo Electronics
Küçük İhsaniye Mah.
Mızraklı Sok. No:15
Meram / Konya
Turkiye

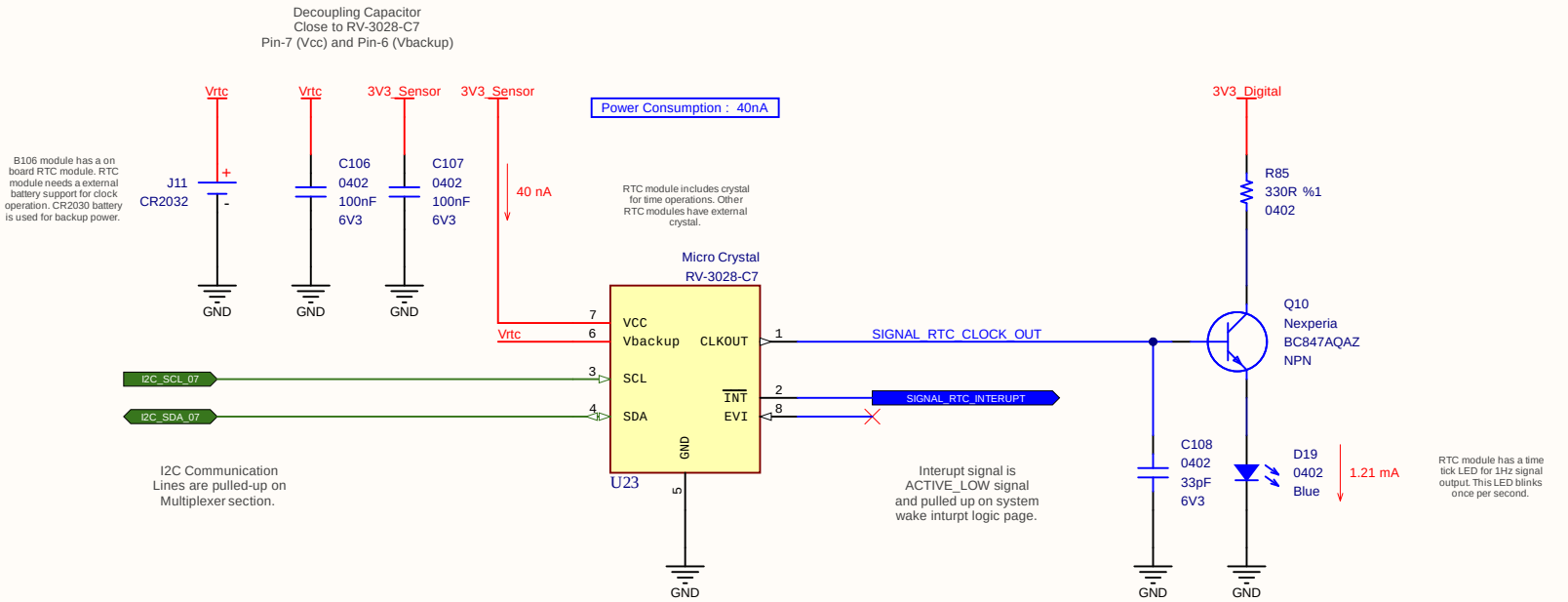
OVOO



F7

Title	I2C I/O Expander for Reading Interrupts		
Size: A4	**Number:** AA001	**Revision:** B106AA	
Date: 6.06.2020	**Time:** 22:28:38	**Sheet** 35 of 37	
File:	C:\Altium Projects\STF\P102 - Weather Station\Modules\B106AA\Schematic\I2C IO Expander.SchDoc		

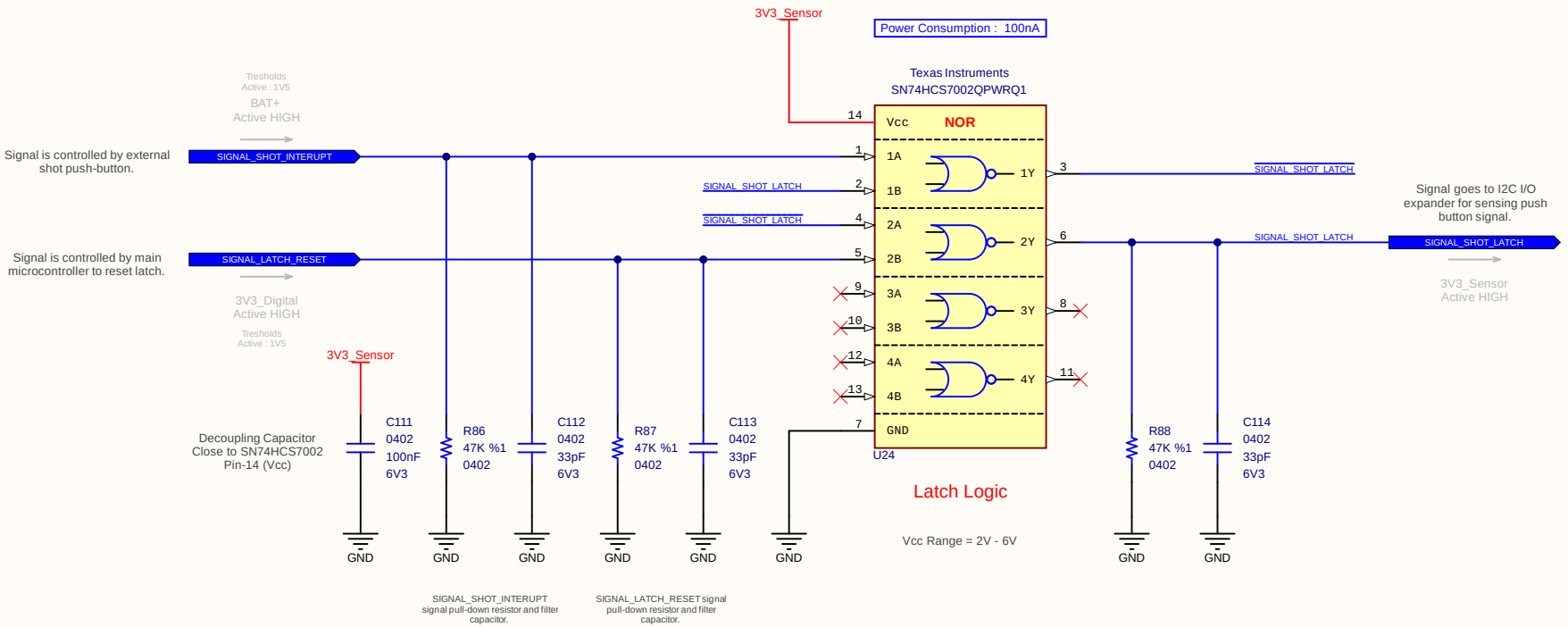
Ovoo Electronics
Küçük İhsaniye Mah.
Mızraklı Sok. No:15
Meram / Konya
Turkiye



F8

Title	Real Time Clock		
Size: A4	**Number:** AA001	**Revision:** B106AA	
Date: 6.06.2020	**Time:** 22:28:38	**Sheet** 36 of 37	
File: C:\Altium Projects\STF\P102 - Weather Station\Modules\B106AA\Schematic\Real Time Clock.SchDoc			

Ovoo Electronics
Küçük İhsaniye Mah.
Mızraklı Sok. No:15
Meram / Konya
Turkiye



System main timer and wake interupt logic includes manuel shot button interupt for wakeup the system. If user pushes the manuel wakeup button system wakes up and send data.

We want to learn wich interupt wakes up the system. All interupt source are latch up until firmware clear the interupt. But shot button is a push button interupt so we need to latch the signal for sensing.

SN74HCS7002 is a 4 channel NOR gate for building "SR Latch flip flop". Latch circuit have 2 input (one is set one is reset) and one output.

If set pin (Signal_Shot_Interupt) goes HIGH output pin (Signal_Shot_Latch) goes HIGH. Output pin latched at HIGH until resep signal is recieved. So all input and output pins are pull-down.

Title	Signal Latch Logic		
Size: A4	**Number:** AA001	**Revision:** B106AA	
Date: 6.06.2020	**Time:** 22:28:38	**Sheet** 37 of 37	
File:	C:\Altium Projects\STF\P102 - Weather Station\Modules\B106AA\Schematic\Signal Latch Logic.SchDoc		

Ovoo Electronics
Küçük İhsaniye Mah.
Mızraklı Sok. No:15
Meram / Konya
Turkiye