

# VERSION HISTORY

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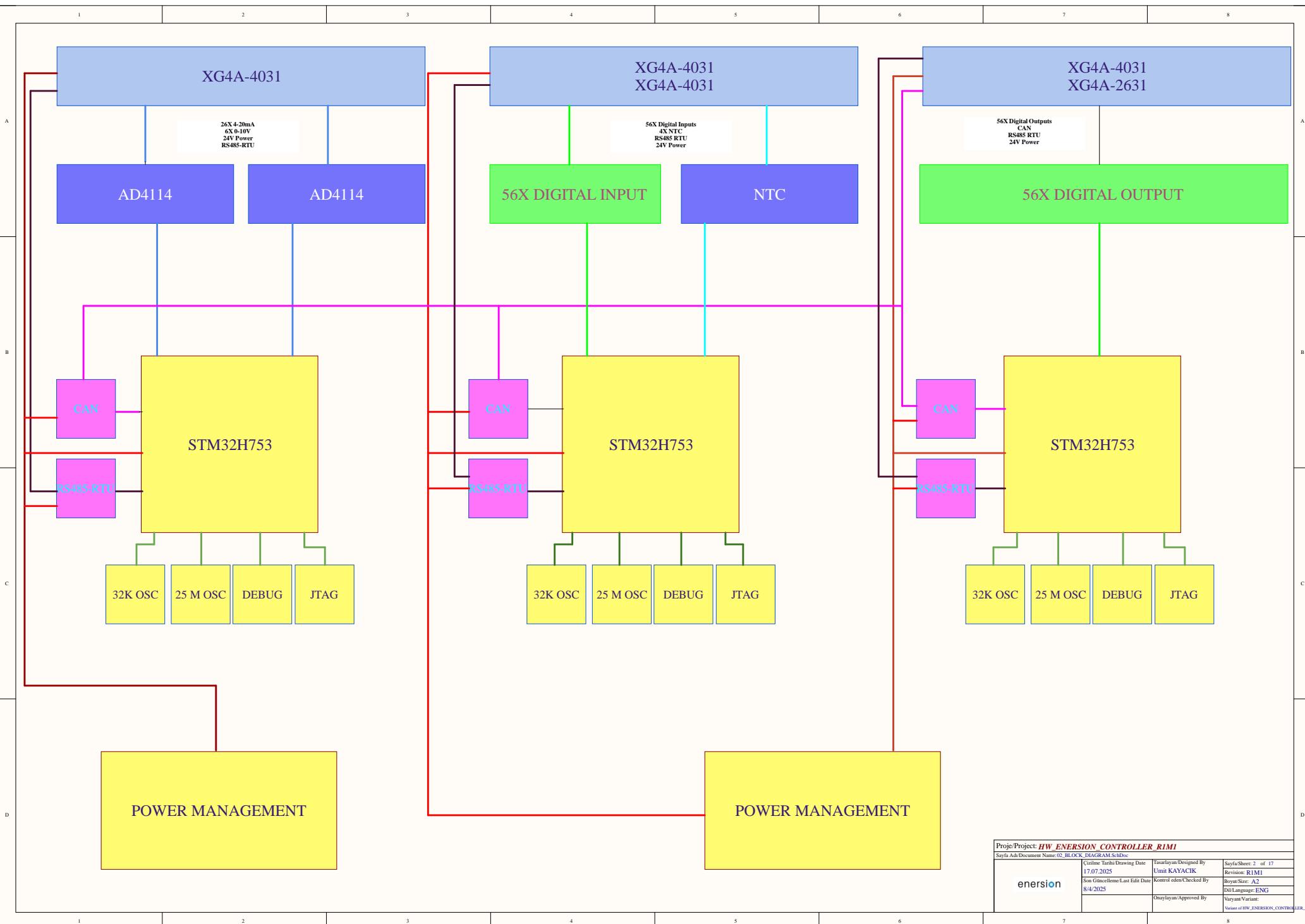
## Index

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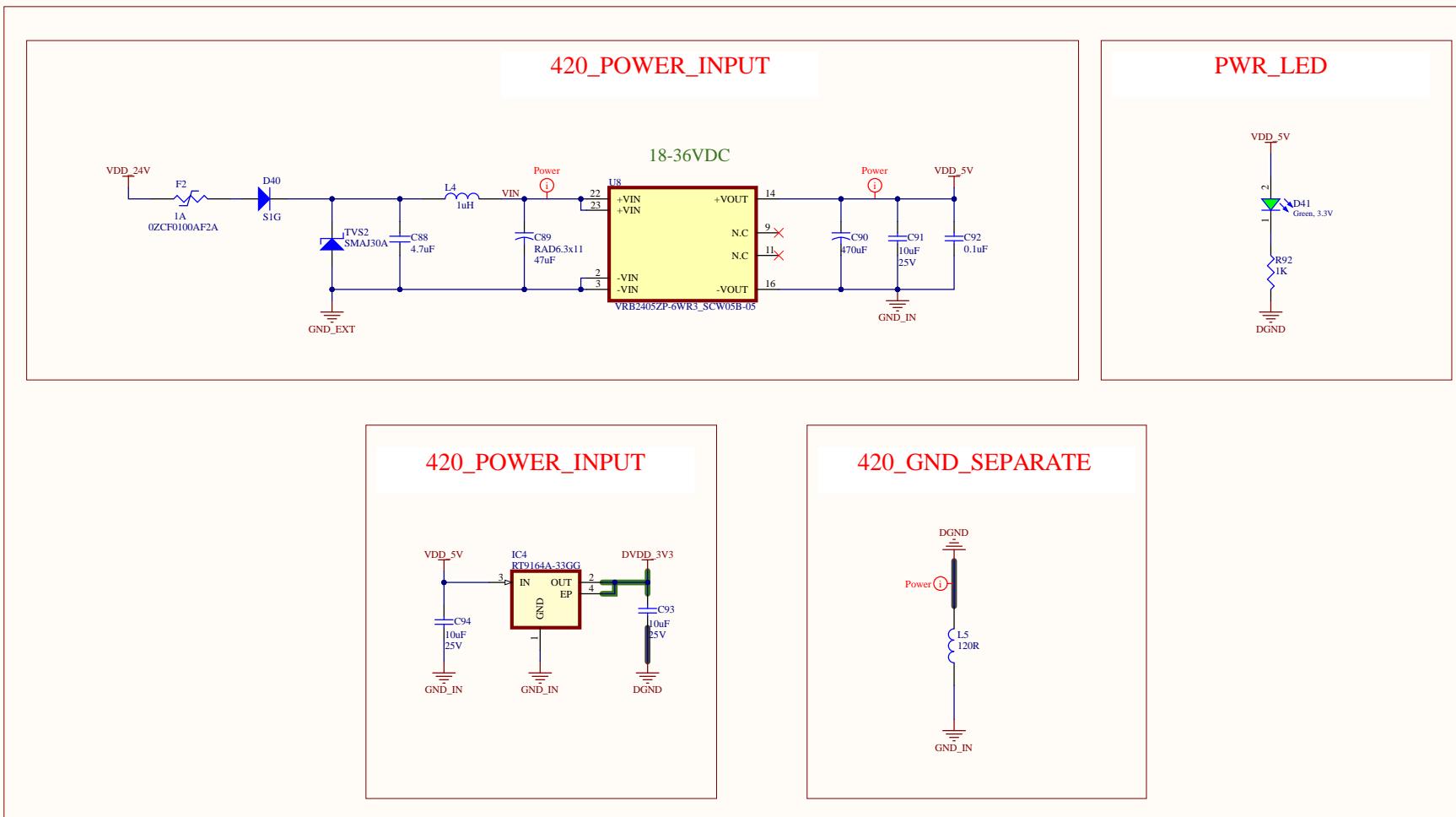
- 01 REVISION HISTORY
- 02 BLOCK DIAGRAM
- 03 4-20 POWER INPUT
- 04 4-20 AD4114 ADC
- 05 4-20 MCU 753
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Revision	Description	Date	Owner
R1M1	Initial Commit	8/7/2025	Umit KAYACIK

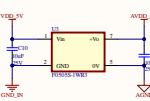
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Cizilme Tarihi/Drawing Date	Tasarlayan/Designed By	Sayfa/Sheet: 1 of 17	
11.07.2025	Umit KAYACIK	Revision: RIMI	
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8/4/2025		Dil/Language: ENG	
	Onaylan/Approved By	Varyant/Variant:	
		Variant of HW_ENERSION_CONTROLLER_RIMI	



Proje/Project: HW ENERISION CONTROLLER RIMI	
Sayfa Adı/Document Name: 02_BLOCK_DIAGRAM_SchDwg	Cizim Tarihi/Drawing Date: 17.07.2025
	Tasarlayan/Designed By: Umit KAYACIK
	Sayfa Sheet: 2 of 17
	Revision: RIMI
	Boyut/Size: A2
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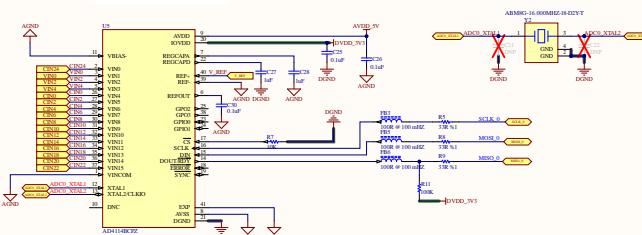


Proje/Project: <b>HW_ENERSION_CONTROLLER_RIMI</b>			
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Cizilme Tarihi/Drawing Date		Tasarlayan/Designed By	
17.07.2025		Umit KAYACIK	Sayfa/Sheet: 3 of 17 Revision: RIMI
Son Güncelleme/Last Edit Date		Kontrol eden/Checked By	
8/4/2025		Boyu/Size: A3 Dil/Language: ENG	
Onaylanı/Approved By		Varyant/Variant: Variant of HW_ENERSION_CONTROLLER_RIMI	



ADC 0

**AD4114\_0**

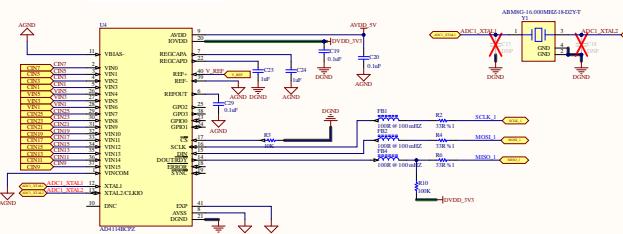


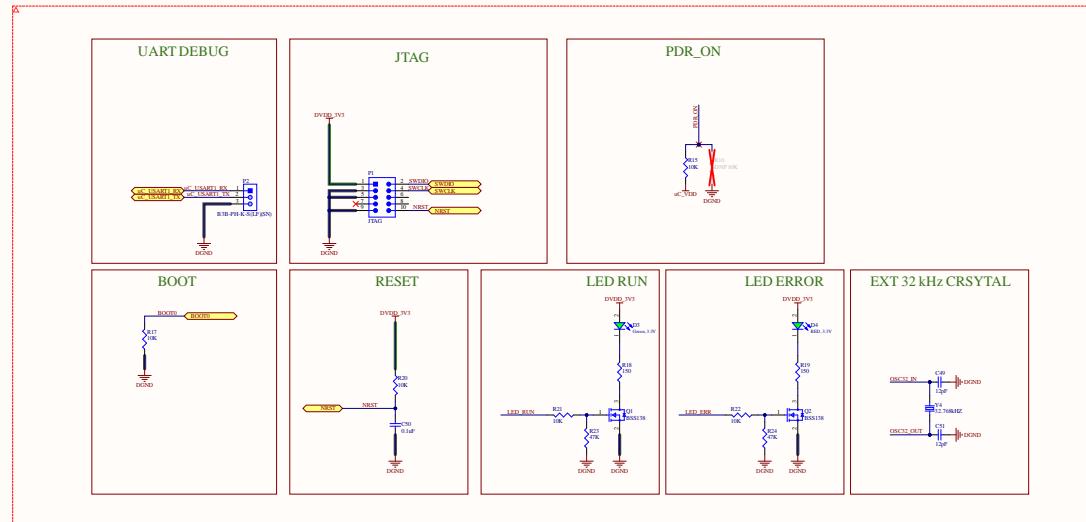
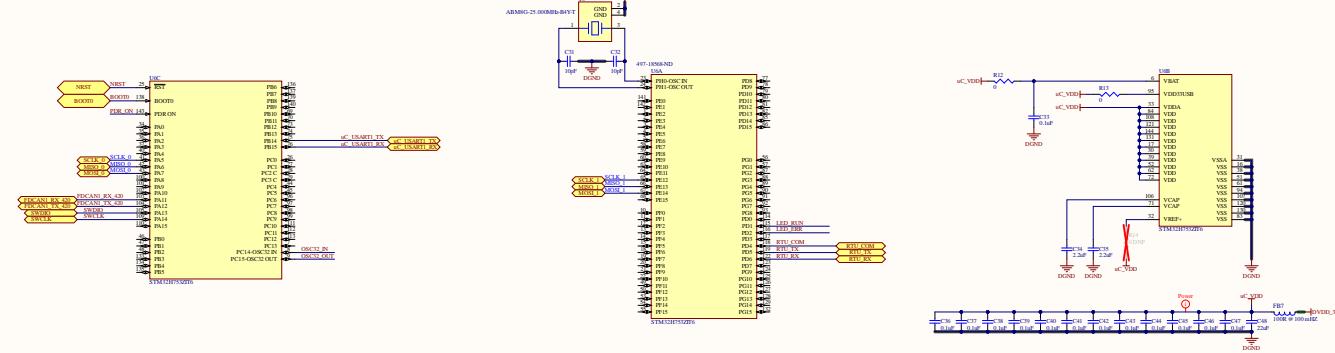
## Reference Voltage



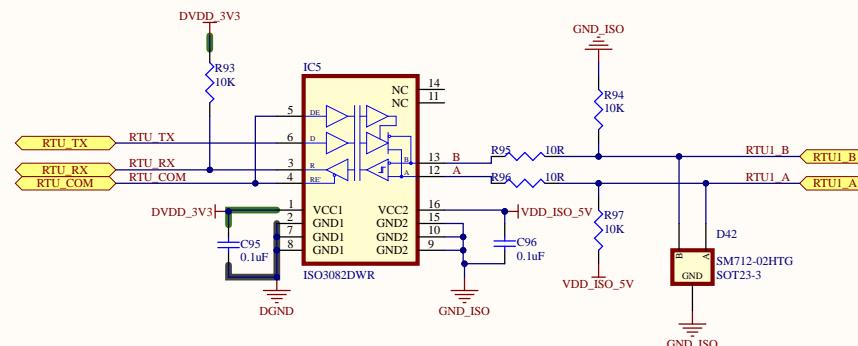
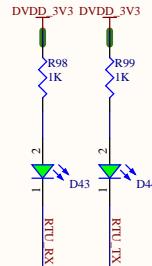
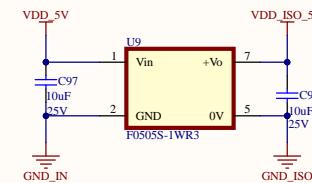
ADC 1

AD4114\_1

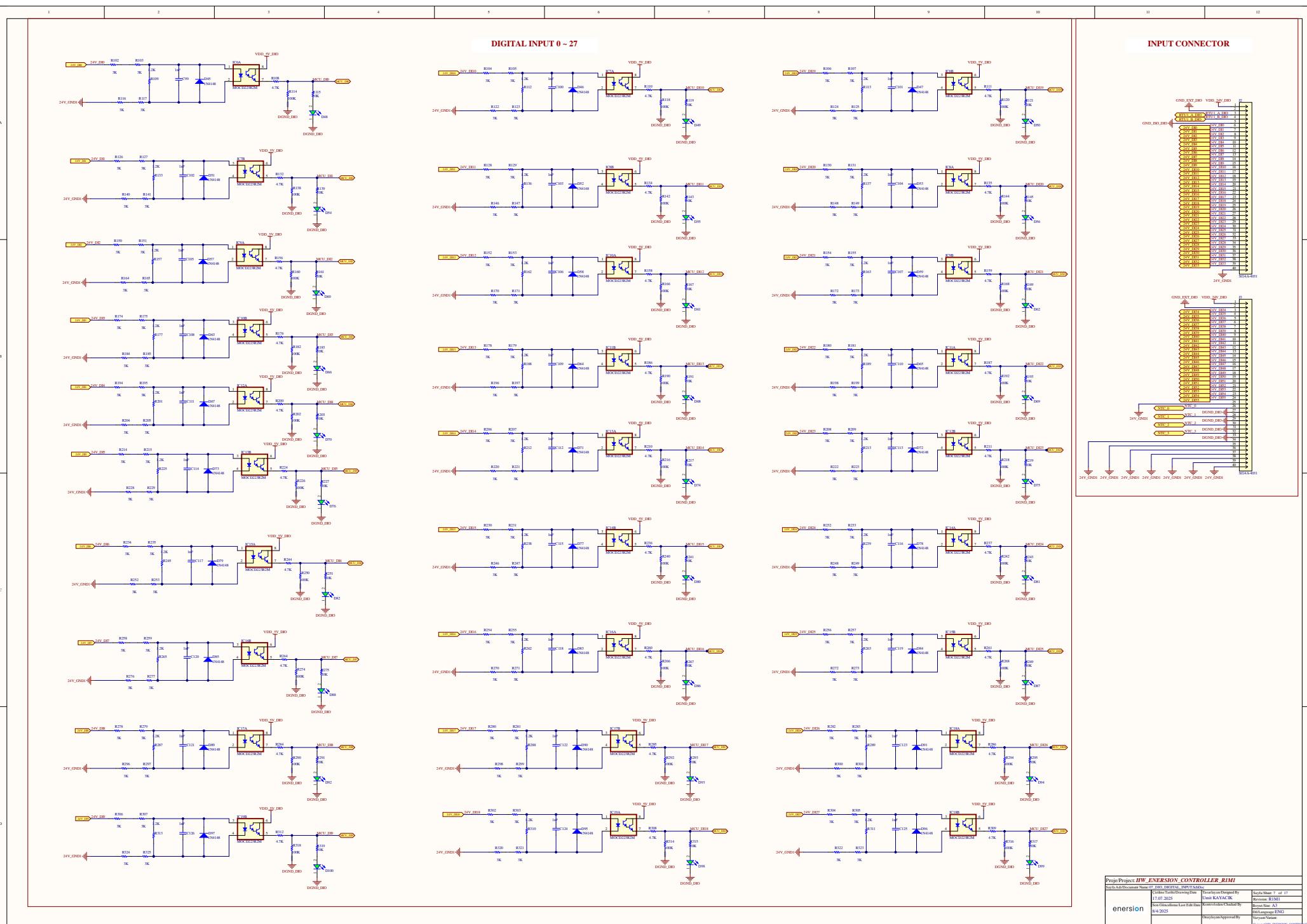




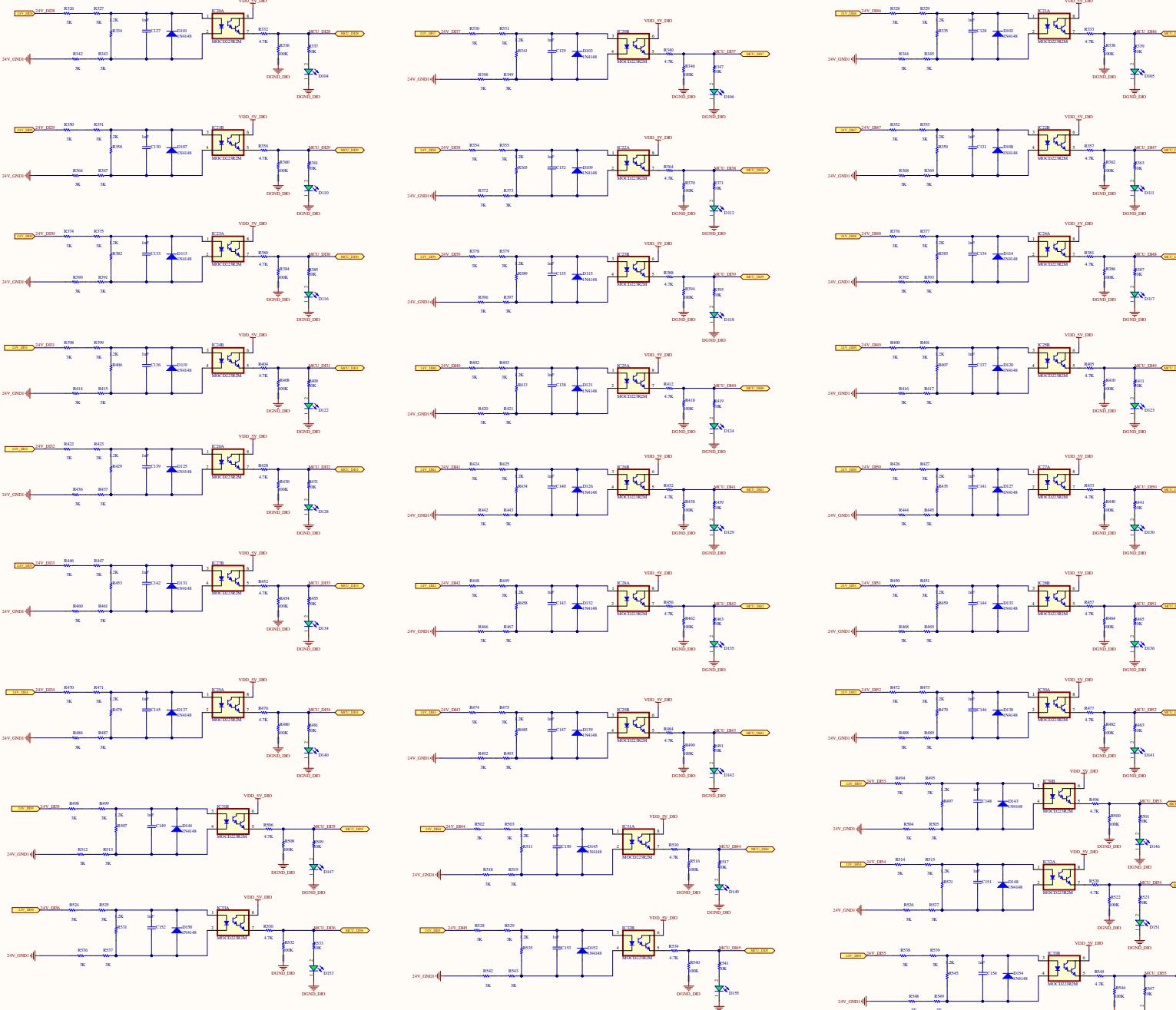
Project/Project: <b><i>HW_ENSERNER_CONTROLLER_RIMI</i></b>	
Key/Adv Document Name:	HW_ENSERNER_CONTROLLER_RIMI
Customer/Tech/Designing Date:	17.07.2025
Customer/Last Edit Date:	04/2025
Review/Editor/Check By:	Umit KAYAICK
Review/Editor/Check By:	Son Gencayen
Review/Editor/Check By:	Yavuz Akin
Review/Editor/Check By:	Ali DIL
Language ENG:	
Language TR:	
QA/Sign/Approved By:	Yavuz Akin
Varyant/Variant:	
Value of HW_ENSERNER_CONTROLLER_RIMI	

**RS485****RX-TX LED****RS485 ISOLATION****GND JUMPER****485A PULL DOWN**

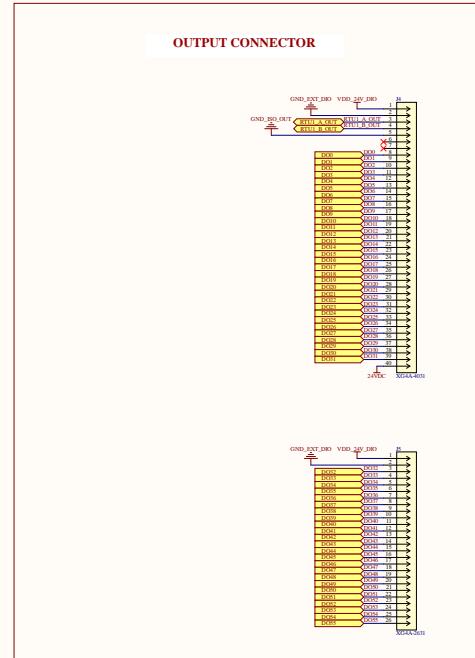
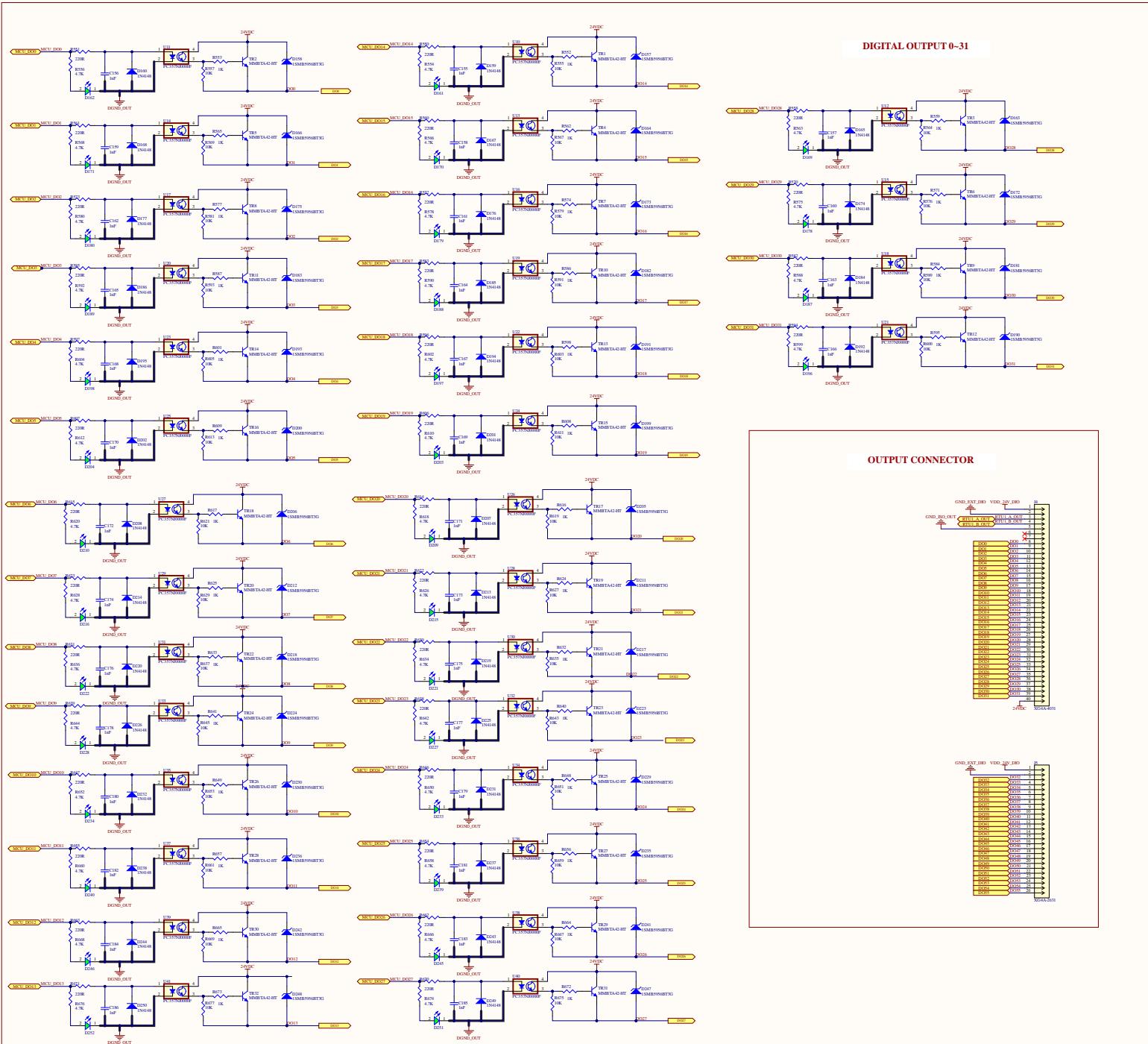
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	Son Güncelleme/Last Edit Date 8/4/2025	Kontrol eden/Checked By	Revision: RIMI
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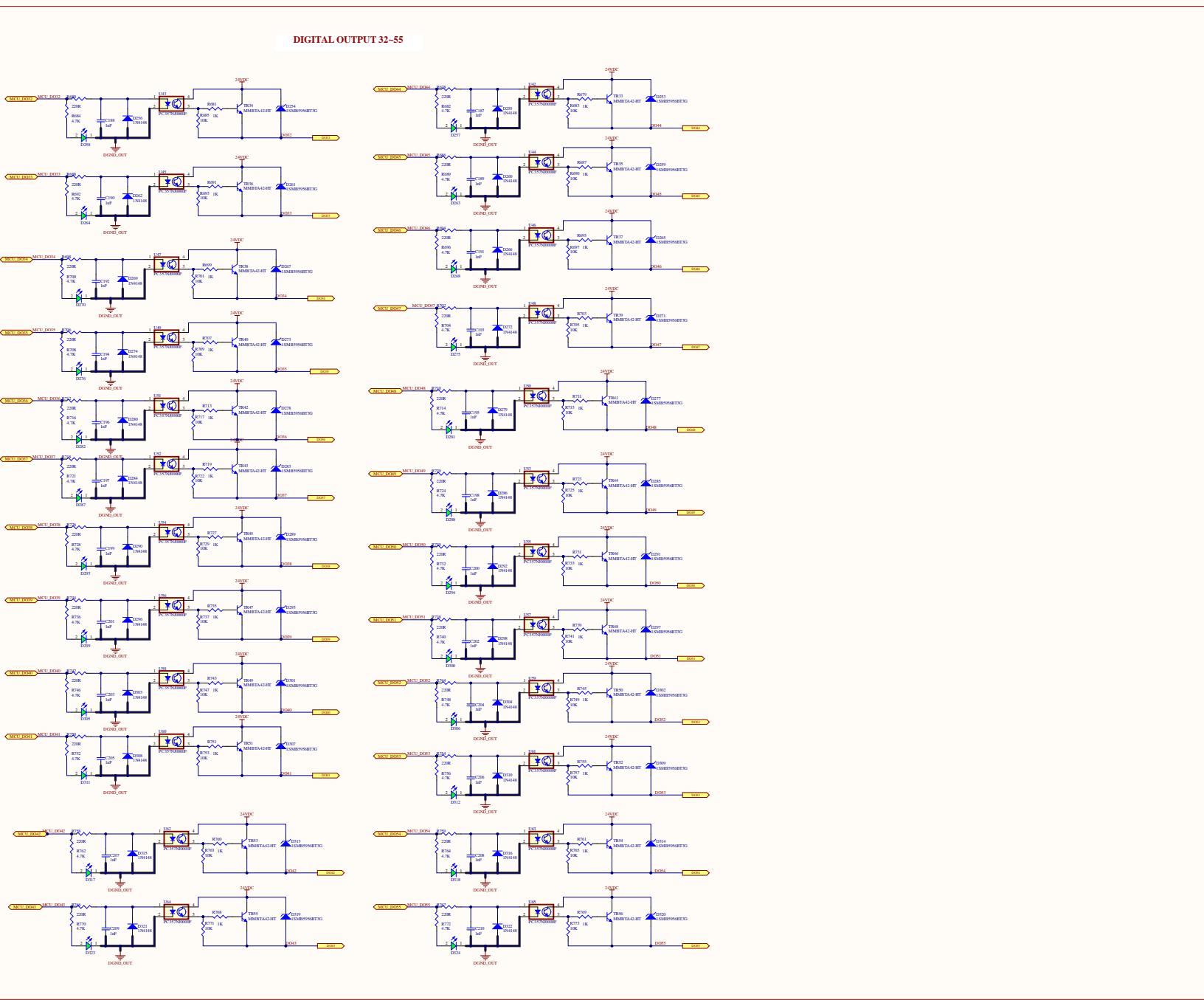


**DIGITAL INPUT 28 ~ 55**

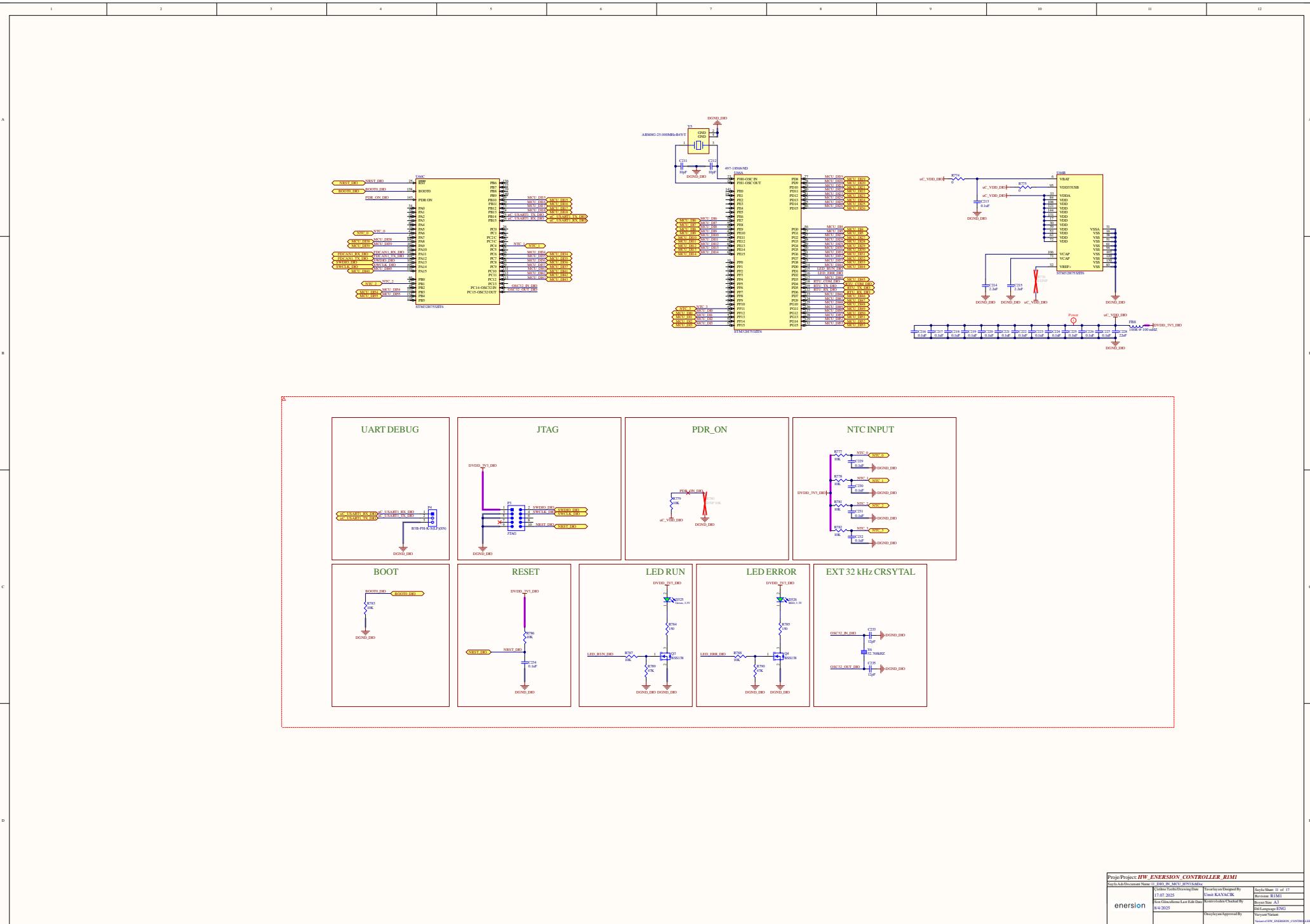


Project: HW_EMERSION_CONTROLLER_RIMI	
Last Update Date:	
Designing Date:	17.07.2025
Designing By:	Kavak, Umut
Review Date:	17.07.2025
Review By:	KAYAICK
Review Note:	RIMI
Design Check Date:	17.07.2025
Design Check By:	KAYAICK
Design Check Note:	RIMI
Design Approval Date:	17.07.2025
Design Approval By:	KAYAICK
Design Approval Note:	RIMI
Design Review Date:	17.07.2025
Design Review By:	KAYAICK
Design Review Note:	RIMI

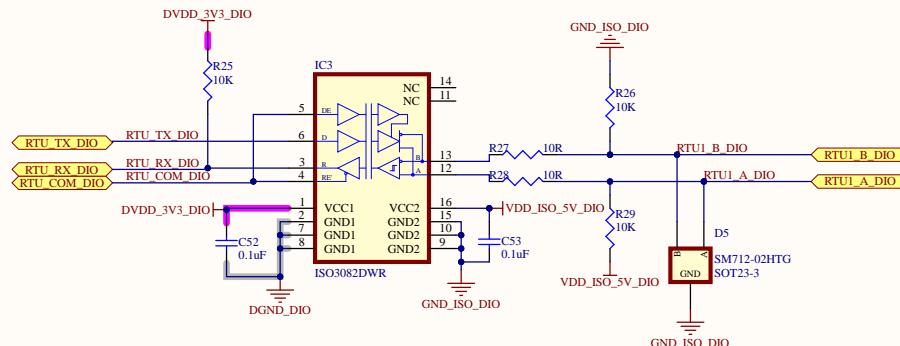




Project: Project HW\_EMERSON\_CONTROLLER\_RIMI  
 Job No.: Job No.: 00000000000000000000000000000000  
 Drawing Date: Drawing Date: 17.07.2025  
 Designed By: Design By: Umut KAYACIK  
 Revise Date: Revise Date: R3MI  
 Last Edit Date: Last Edit Date: 04/2025  
 Checked By: Checked By: EENG  
 Approved By: Approved By: Varaydin  
 Owner of HW\_EMERSON\_CONTROLLER\_RIMI: LBB-EMERSON

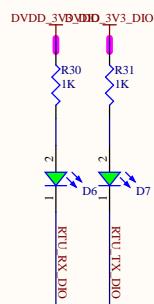


A

**RS485**

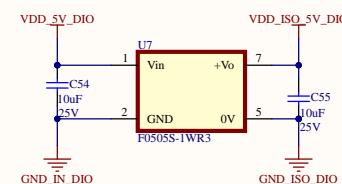
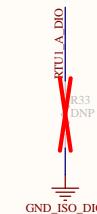
B

B

**RX-TX LED**

C

C

**RS485 ISOLATION****GND JUMPER****485A PULL DOWN**

D

D

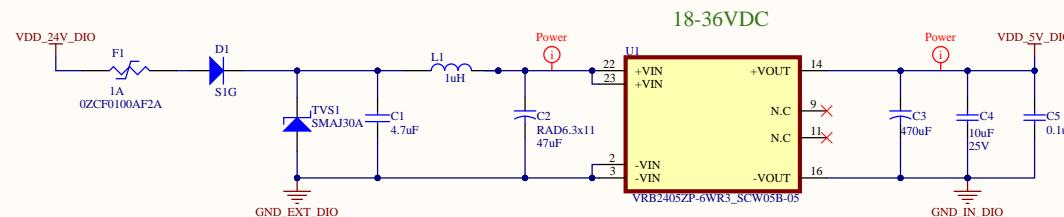
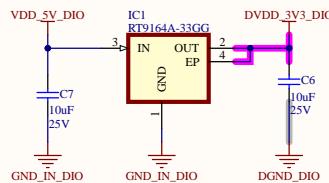
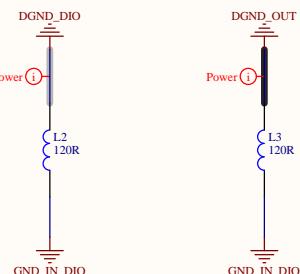
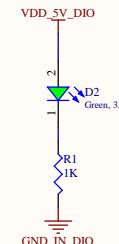
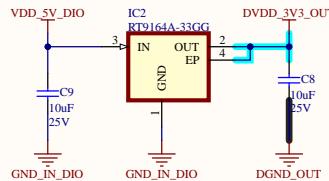
Proje/Project: **HW\_ENERSION\_CONTROLLER\_RIMI**

Sayfa Adı/Document Name: 12\_DIO\_COMM\_RS485\_RTU.SchDoc

Cizilme Tarihi/Drawing Date 17.07.2025	Tasarlayan/Designed By Umit KAYACIK	Sayfa/Sheet: 12 of 17 Revision: RIMI
Son Güncelleme/Last Edit Date 8/4/2025	Kontrol eden/Checked By	Boyut/Size: A3 Dil/Language: ENG
		Varyant/Variant: Variant of HW_ENERSION_CONTROLLER_RIMI

enersion

A

**DIO\_POWER\_INPUT****DIO\_POWER\_INPUT****DIO\_GND\_SEPARATE****PWR\_LED****OUT\_POWER\_INPUT**Proje/Project: **HW\_ENERSION\_CONTROLLER\_RIMI**

Sayfa Adı/Document Name: 13\_DIO\_POWER\_INPUT.SchDoc

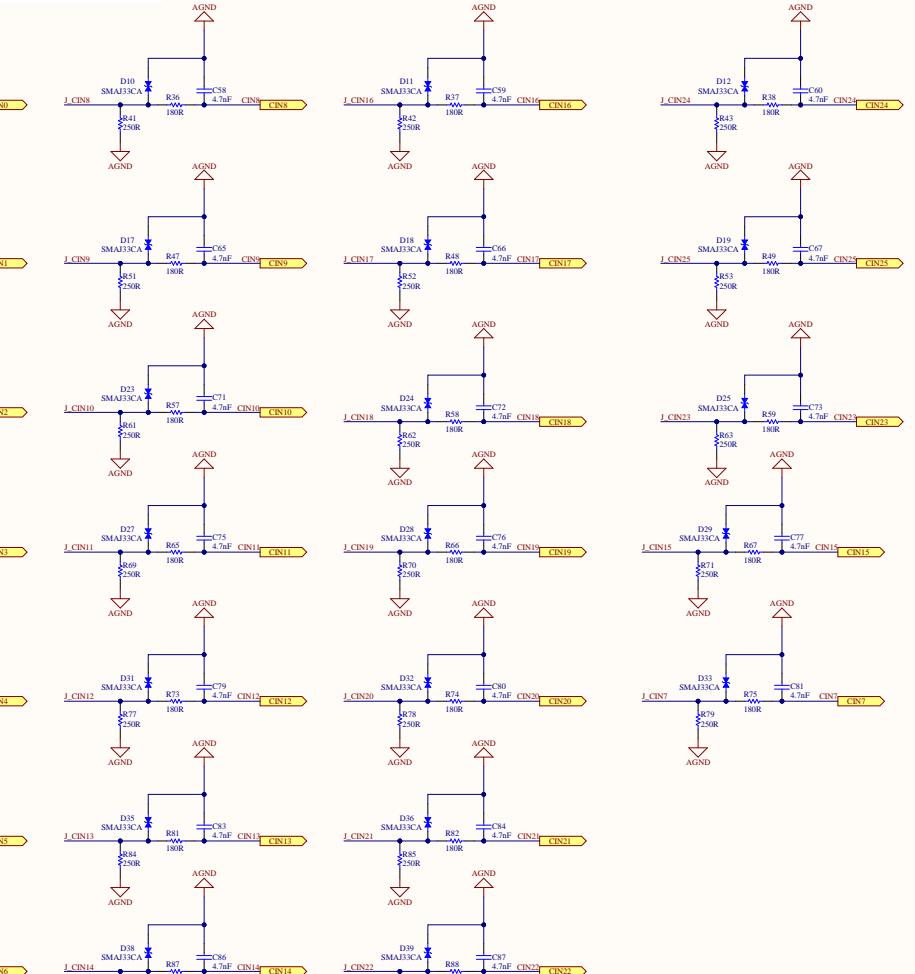
enersion	Tasarlanan/Designed By Umit KAYACIK	Sayfa/Sheet: 13 of 17
	Revision: RIMI	
Son Güncelleme/Last Edit Date 8/4/2025	Kontrol eden/Checked By	
	Boyu/Size: A3	
Dil/Language: ENG		
	Onaylanı/Approved By	
Variant/Variant: Variant of HW_ENERSION_CONTROLLER_RIMI		

V min=0.004A×250Ω=1V  
V min=0.020A×250Ω=5V

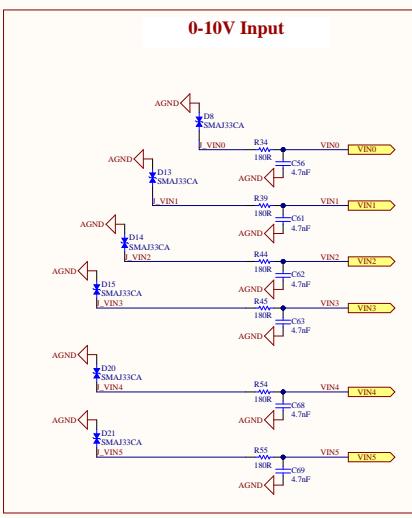
ADC Output Code at Zero =  $(2^{24} * 1 * 0.1)/2.5 = 671088.64$   
ADC Output Code at FS =  $(2^{24} * 5 * 0.1)/2.5 = 3355443.2$   
 $(2^n \times \text{VIN} \times 0.1)/\text{VREF}$

Effective Resolution for 4-20 Input =  $\log((3355443.2 - 671088.64))/\log(2) = 21.36 \text{ Bit}$

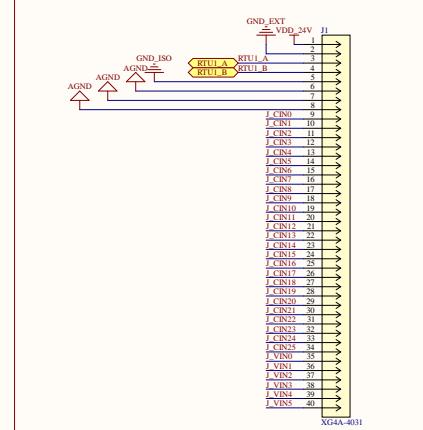
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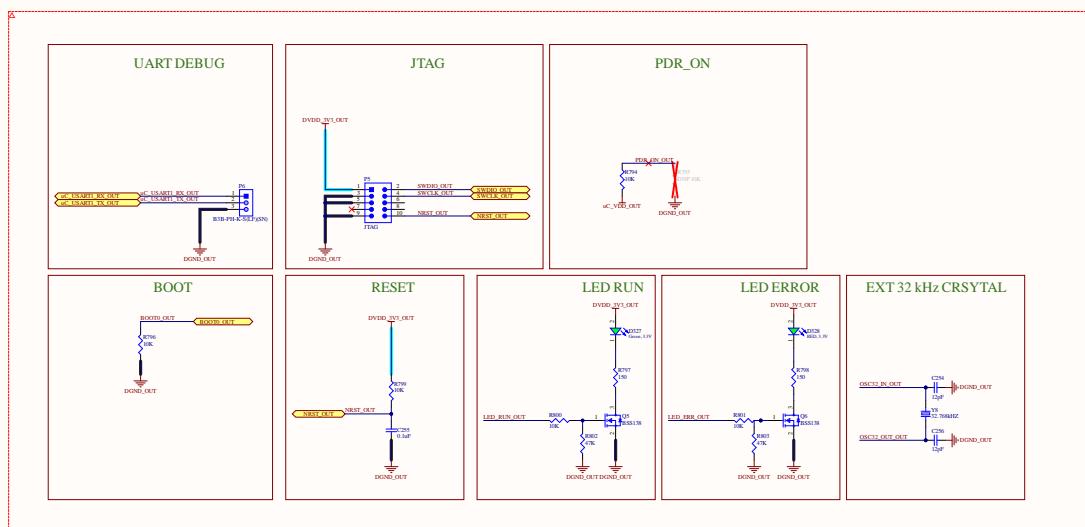
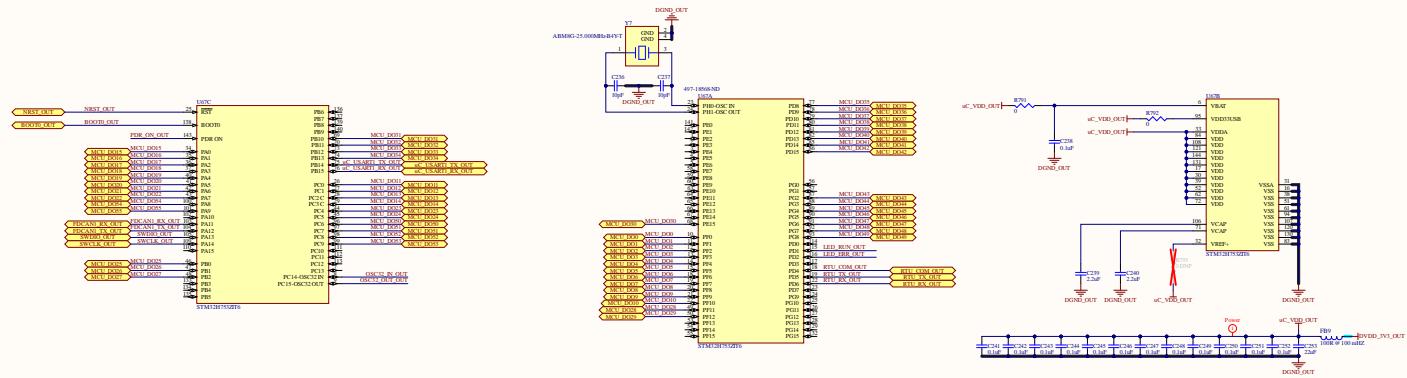


#### 0-10V Input

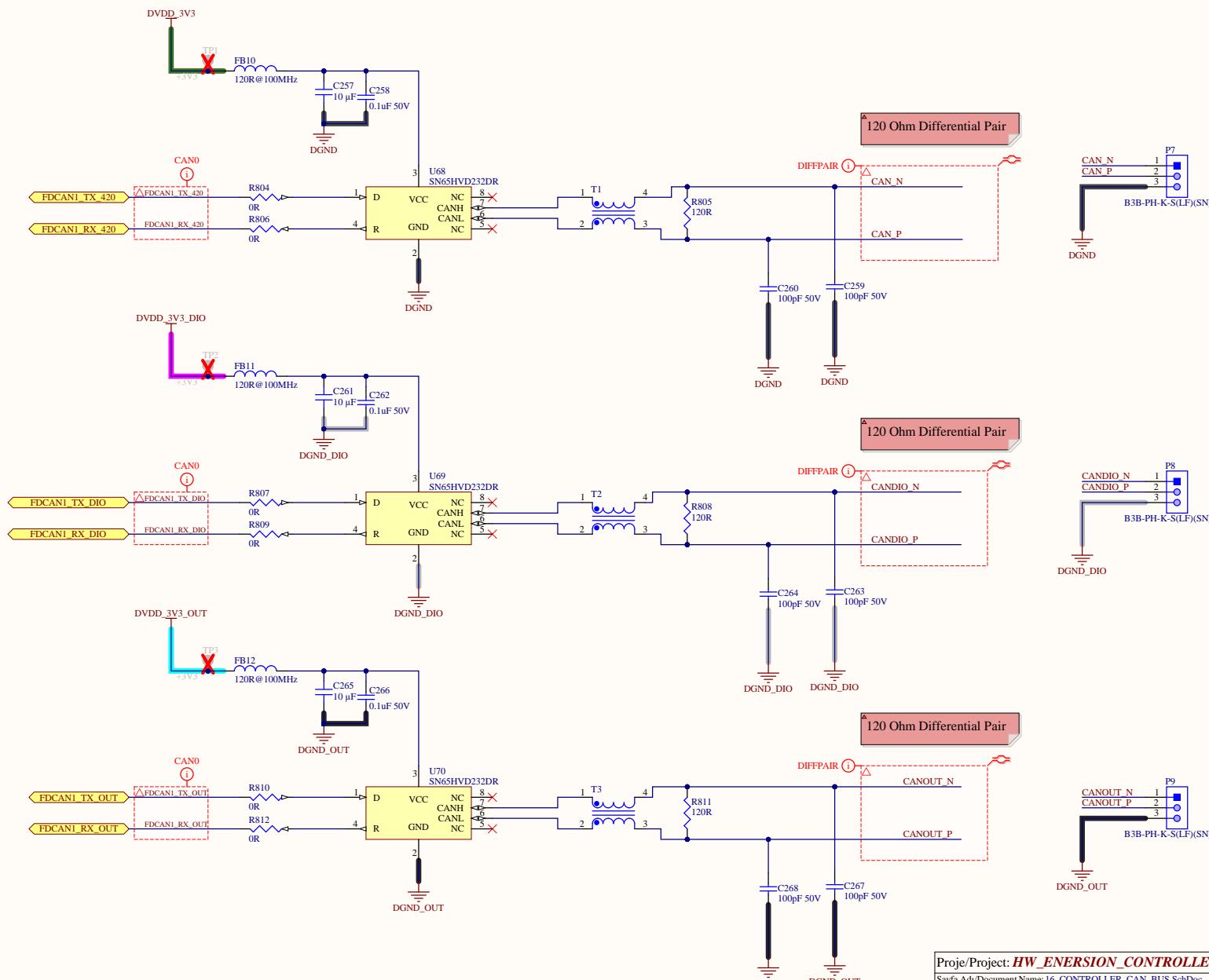


#### 40 Pin Connector





# CANBUS

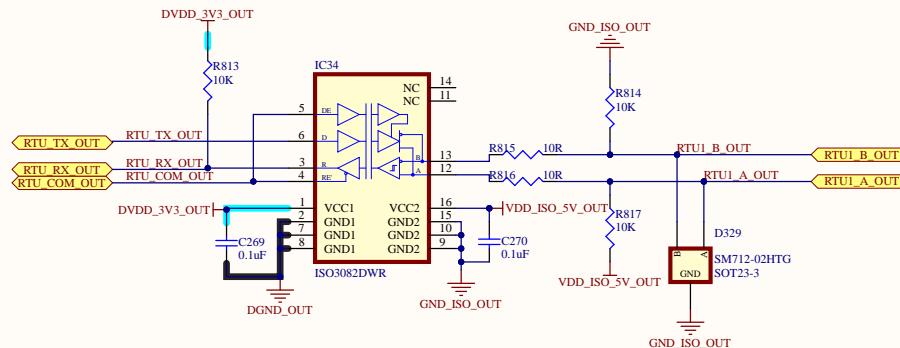


Proje/Project: **HW\_ENERSION\_CONTROLLER\_RIMI**

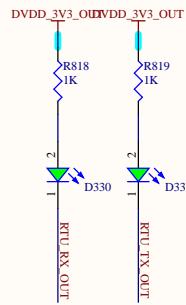
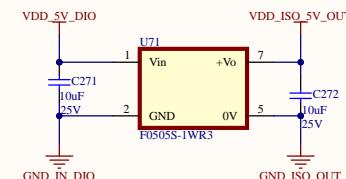
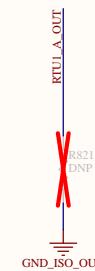
Sayfa Adı/Document Name: 16\_CONTROLLER\_CAN\_BUS.SchDoc

Cizilme Tarihi/Drawing Date 17.07.2025	Tasarlayan/Designed By Umit KAYACIK	Sayfa/Sheet: 16 of 17
Son Güncelleme/Last Edit Date 8/7/2025	Kontrol eden/Checked By	Revision: RIMI
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		Dil/Language: ENG
	Onaylan/Approved By	Varyant/Variant:
		Variant of HW_ENERSION_CONTROLLER_RIMI

A

**RS485**

B

**RX-TX LED****RS485 ISOLATION****GND JUMPER****485A PULL DOWN**

C

Proje/Project: **HW\_ENERSION\_CONTROLLER\_RIMI**

Sayfa Adı/Document Name: 17\_DIO\_OUT\_COMM\_RS485\_RTU.SchDoc

Cizilme Tarihi/Drawing Date 17.07.2025	Tasarlayan/Designed By Umit KAYACIK	Sayfa/Sheet: 17 of 17
Son Güncelleme/Last Edit Date 8/4/2025	Kontrol eden/Checked By	Revision: RIMI
		Boyuť/Size: A3
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