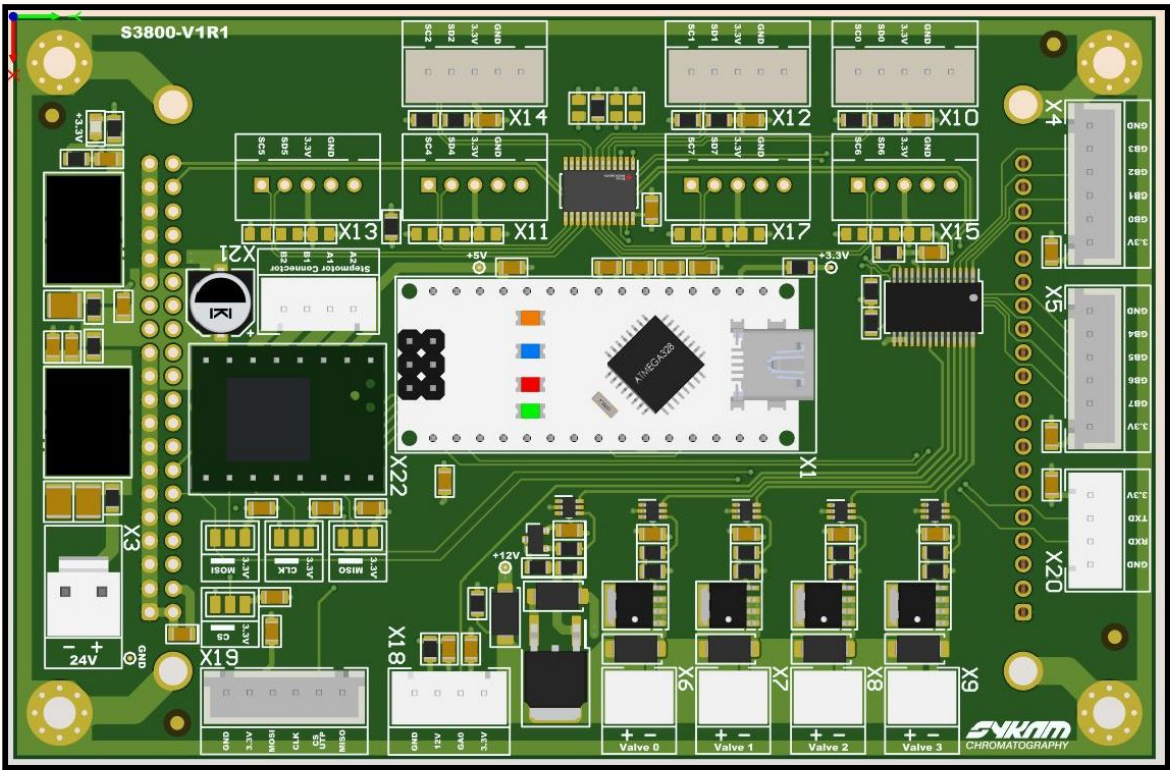



Projekt Name: **S3800.PrjPCB**
Variant: **S3800-V1R1**
Printdate: **09.03.2023**
Revision: **V1R1**
Status: **Release**

| PAGE: | INDEX: |
|-------|---------------------------------|
| 1 | Cover Page |
| 2 | Block Diagram |
| 3 | Hardware Boot Sequence |
| 4 | Additional Parts |
| 5 | Revision History |
| 6 | Arduino Nano or Every, 5V |
| 7 | Powersupplies 12V, 3.3V |
| 8 | I ² C Digital I/O |
| 9 | I ² C Switch |
| 10 | TFT Interface |
| 11 | Valve Control 1 - 4 |
| 12 | Arduino Modul Stepmotor Control |
| 13 | Design Notes |



Blockdiagramm

not used

| | | | | |
|----------------------------------|-------------------|----------------|---|---|
| Title: Blockdiagramm | | | SYKAM GmbH Gewerbering 15 86922 Eresing Germany https://sykam.com |  |
| Customer: Sykam GmbH | | | | |
| Size: A3 | PNr: G_Partnumber | Version: V1R1 | | |
| Date: 09.03.2023 | Time: 09:05:03 | Sheet: 2 of 13 | | |
| File: [02]-BLOCK-DIAGRAMM.SchDoc | | | | |
| | | | Engineer: Stephan Diel | |

Hardware Boot-Sequence of Voltage-Levels:

not used

Mechanic & Additional Parts/Software/Modules

Printed Circuit Board:

X

Fiducials: *TOP only*



Optical Fiducials: *TOP only*

Testpoints:

X

Dust Cap for CAN Ports:

X

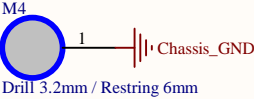
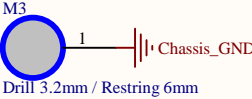
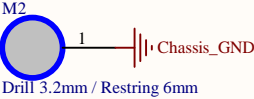
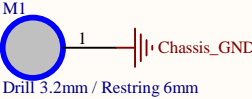
Mechanical Notes:

X

Firmware:

X

Mounting Holes:



Jumpers:

X

PCB Branding/Signs:



Modifikation Box:

X


Version & Variant:

X

Additional Info:


| Zylinderschrauben | | | | | |
|-------------------|-----------|----|-----|-----|-----|
| | | | | | |
| d | l (mm) | b | d1 | k | s |
| | von - bis | mm | mm | mm | mm |
| M1,6 | 5 - 16 | 15 | 3 | 1,6 | 1,5 |
| M2 | 3 - 20 | 16 | 3,8 | 2 | 1,5 |
| M2,5 | 4 - 20 | 17 | 4,5 | 2,5 | 2 |
| M3 | 4 - 50 | 18 | 5,5 | 3 | 2,5 |
| M4 | 4 - 70 | 20 | 7 | 4 | 3 |
| M5 | 6 - 90 | 22 | 8,5 | 5 | 4 |
| M6 | 6 - 100 | 24 | 10 | 6 | 5 |
| M8 | 10 - 100 | 28 | 13 | 8 | 6 |
| M10 | 12 - 80 | 32 | 16 | 10 | 8 |
| M12 | 20 - 70 | 36 | 18 | 12 | 10 |

YES




| INPUT | | OUTPUT |
|-------|---|--------|
| A | B | |
| 0 | 0 | 0 |
| 1 | 0 | 0 |
| 0 | 1 | 0 |
| 1 | 1 | 1 |

NOT




| INPUT | | OUTPUT |
|-------|---|--------|
| A | B | |
| 0 | 0 | 1 |
| 1 | 0 | 0 |
| 0 | 1 | 1 |
| 1 | 1 | 0 |

AND




| INPUT | | OUTPUT |
|-------|---|--------|
| A | B | |
| 0 | 0 | 0 |
| 1 | 0 | 0 |
| 0 | 1 | 0 |
| 1 | 1 | 1 |

OR




| INPUT | | OUTPUT |
|-------|---|--------|
| A | B | |
| 0 | 0 | 0 |
| 1 | 0 | 1 |
| 0 | 1 | 1 |
| 1 | 1 | 1 |

XOR




| INPUT | | OUTPUT |
|-------|---|--------|
| A | B | |
| 0 | 0 | 0 |
| 1 | 0 | 1 |
| 0 | 1 | 1 |
| 1 | 1 | 0 |

NAND




| INPUT | | OUTPUT |
|-------|---|--------|
| A | B | |
| 0 | 0 | 1 |
| 1 | 0 | 1 |
| 0 | 1 | 1 |
| 1 | 1 | 0 |

NOR



| INPUT | | OUTPUT |
|-------|---|--------|
| A | B | |
| 0 | 0 | 1 |
| 1 | 0 | 0 |
| 0 | 1 | 0 |
| 1 | 1 | 0 |

XNOR



| INPUT | | OUTPUT |
|-------|---|--------|
| A | B | |
| 0 | 0 | 1 |
| 1 | 0 | 0 |
| 0 | 1 | 0 |
| 1 | 1 | 1 |

| | | | |
|--|-----------------------------------|--|--|
| Title: Additional BOM Parts | | | <div><div>SYKAM GmbH Gewerbering 15 86922 Eresing Germany https://sykam.com</div><div></div></div> |
| Customer: Sykam GmbH | | | |
| Size: A3 | PNr: G_Partnumber | Version: V1R1 | |
| Date: 09.03.2023 | Time: 09:05:03 | Sheet: 4 of 13 | |
| File: [04]-ADDITIONAL-BOM-PARTS.SchDoc | | | |
| Engineer: Stephan Diel | | | |


Stackup & Calculations:

Highspeed/Lowspeed Interfaces:

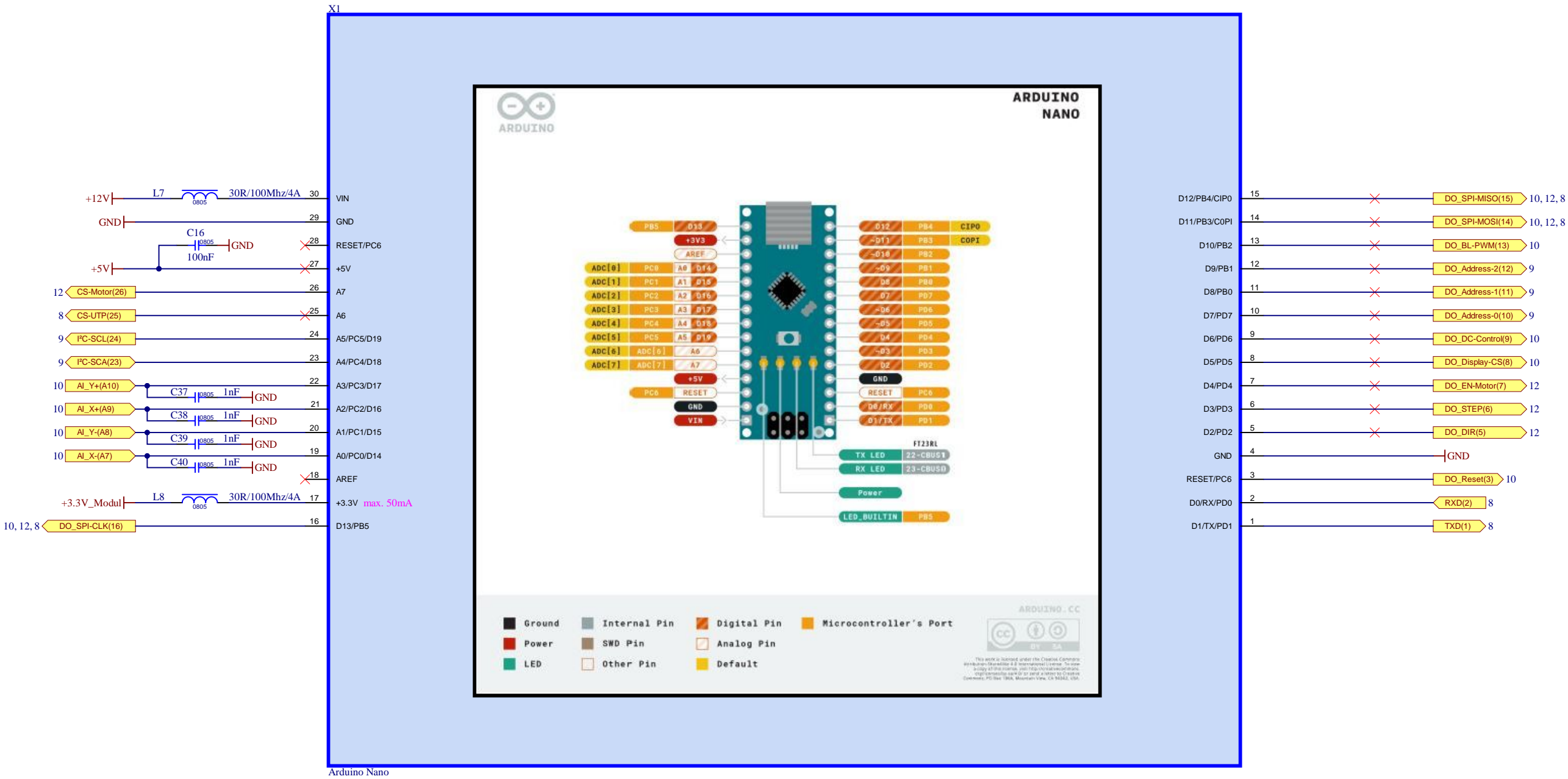
not used

Layer Stackup:

not used

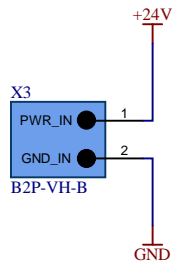
| | | | | |
|--|-------------------|----------------|---|---|
| Title: Stackup & Calculations: | | | SYKAM GmbH Gewerbering 15 86922 Eresing Germany https://sykam.com |  |
| Customer: Sykam GmbH | | | | |
| Size: A3 | PNr: G_Partnumber | Version: V1R1 | | |
| Date: 09.03.2023 | Time: 09:05:03 | Sheet: 5 of 13 | | |
| File: [05]-DOC-REVISION-HISTORY.SchDoc | | | | |
| | | | Engineer: Stephan Diel | |

Arduino Nano or Every

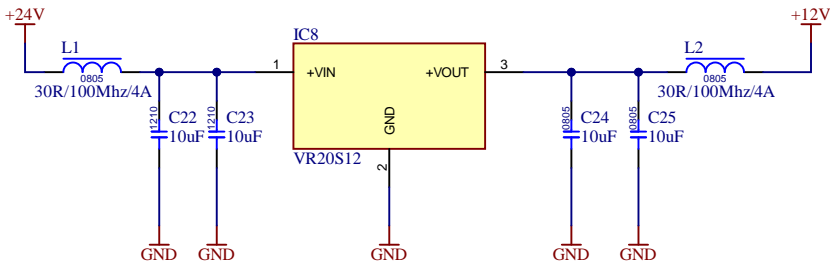


Powersupplies and Connector

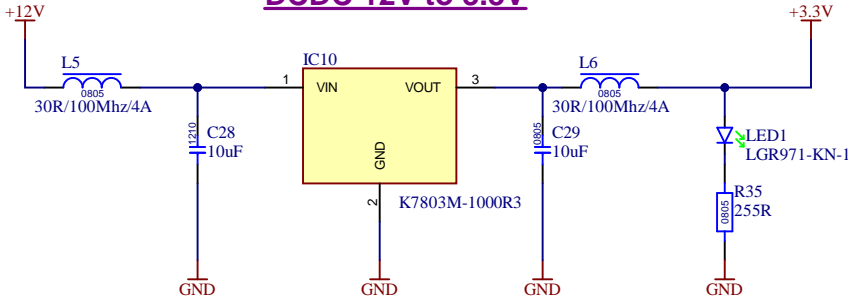
Power Connector



DCDC 24V to 12V

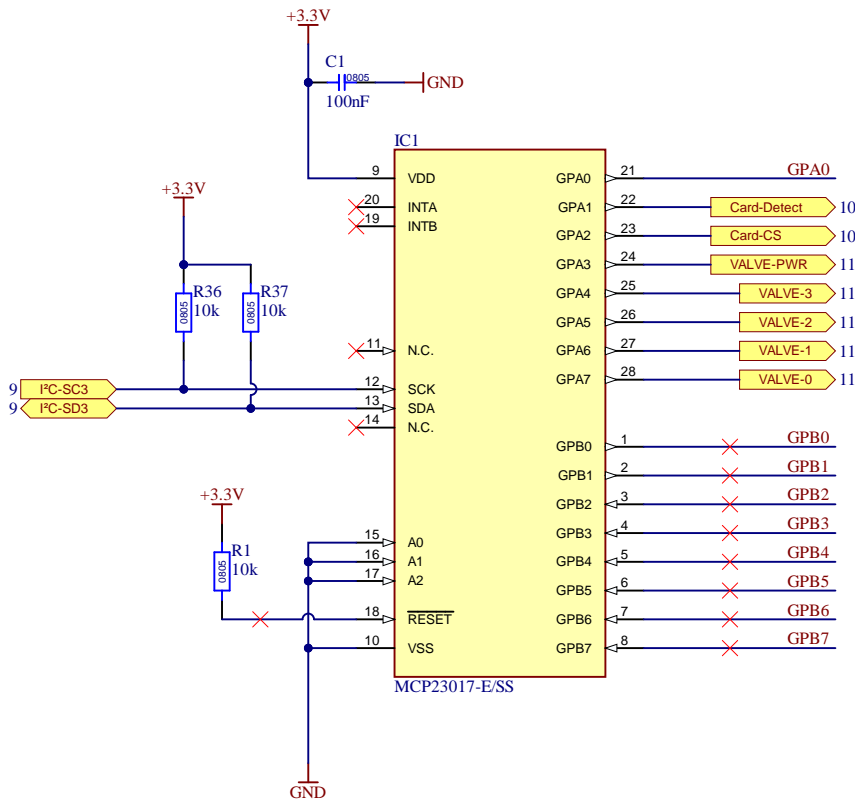


DCDC 12V to 3.3V

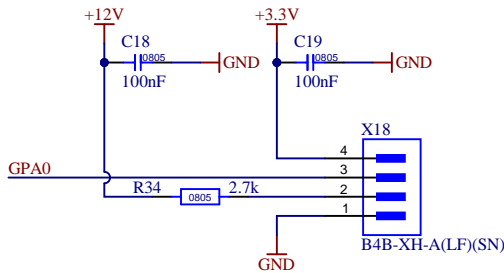


I²C Digital-IO

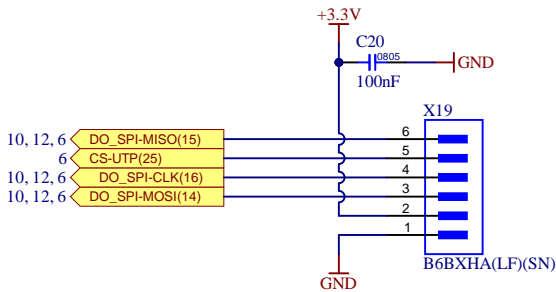
I²C Portexpander



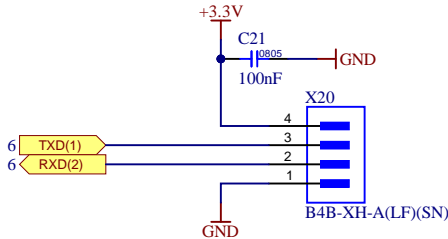
Opto-Coupler Spare



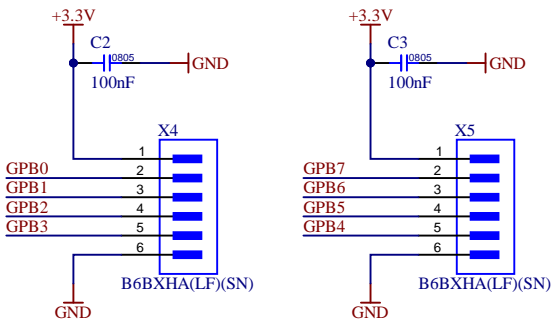
UTP-Communications To Debo SPI RJ45



RS232 to TTL



Optional I/O



Title: FC Digital-IO

Customer: Sykam GmbH

Size: A3

PNr: G_Partnumber

Version: V1R1

Date: 09.03.2023

Time: 09:05:03

Sheet: 8 of 13

File: [09]-Digital-IO.SchDoc

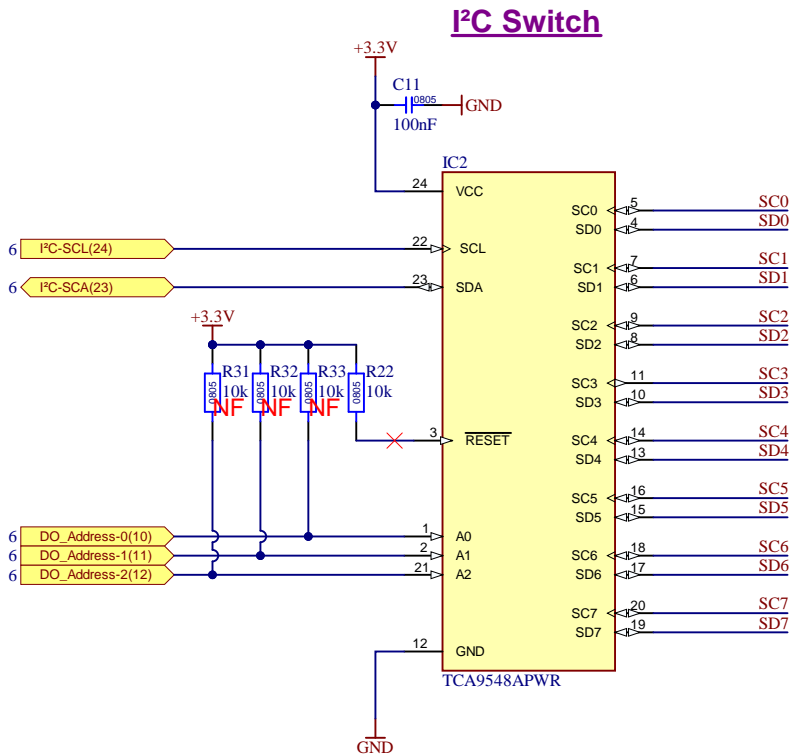
SYKAM GmbH
Gewerbering 15
86922 Eresing
Germany

<https://sykam.com>

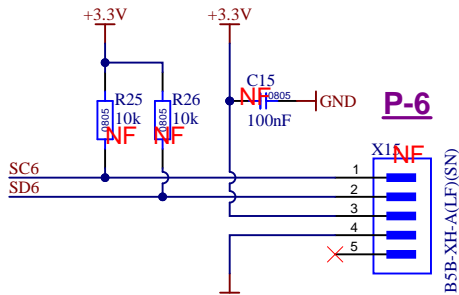
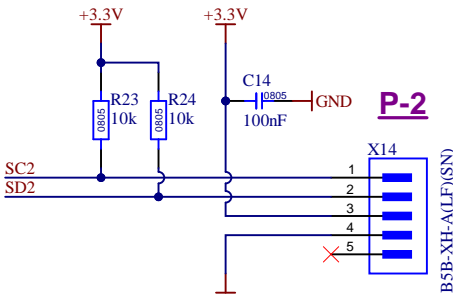
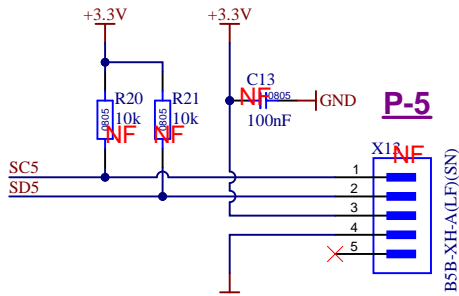
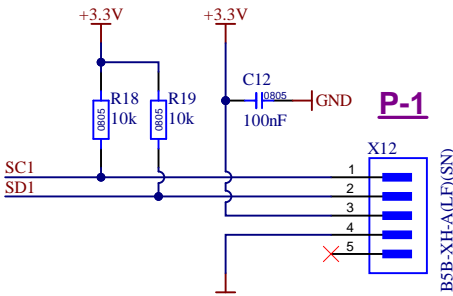
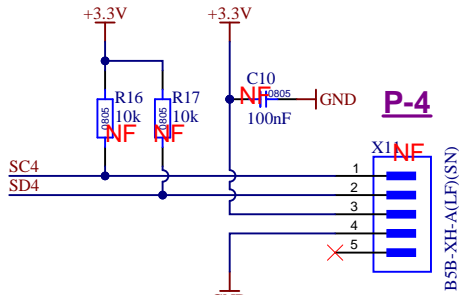
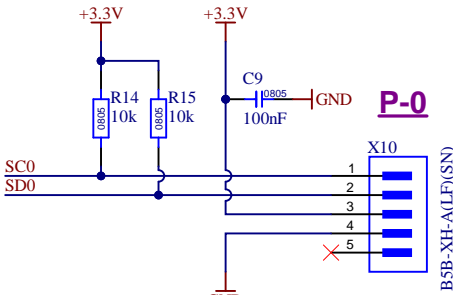
Engineer: Stephan Diel

SYKAM
CHROMATOGRAPHY

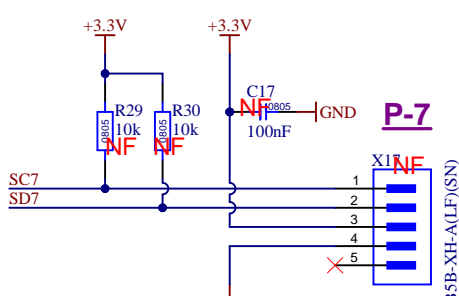
I²C-Switch



I²C Connectoren

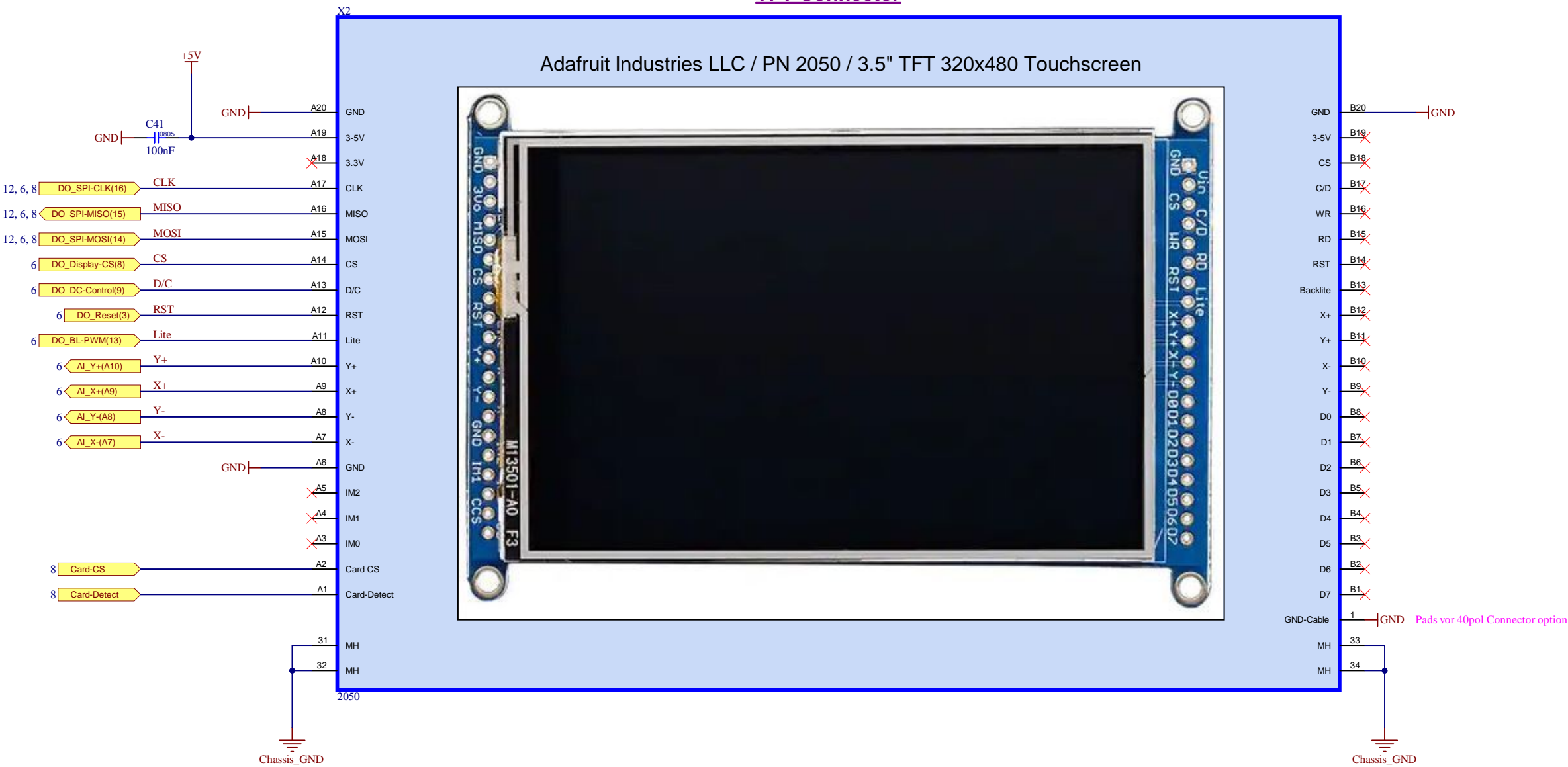


I²C Control Digital I/O



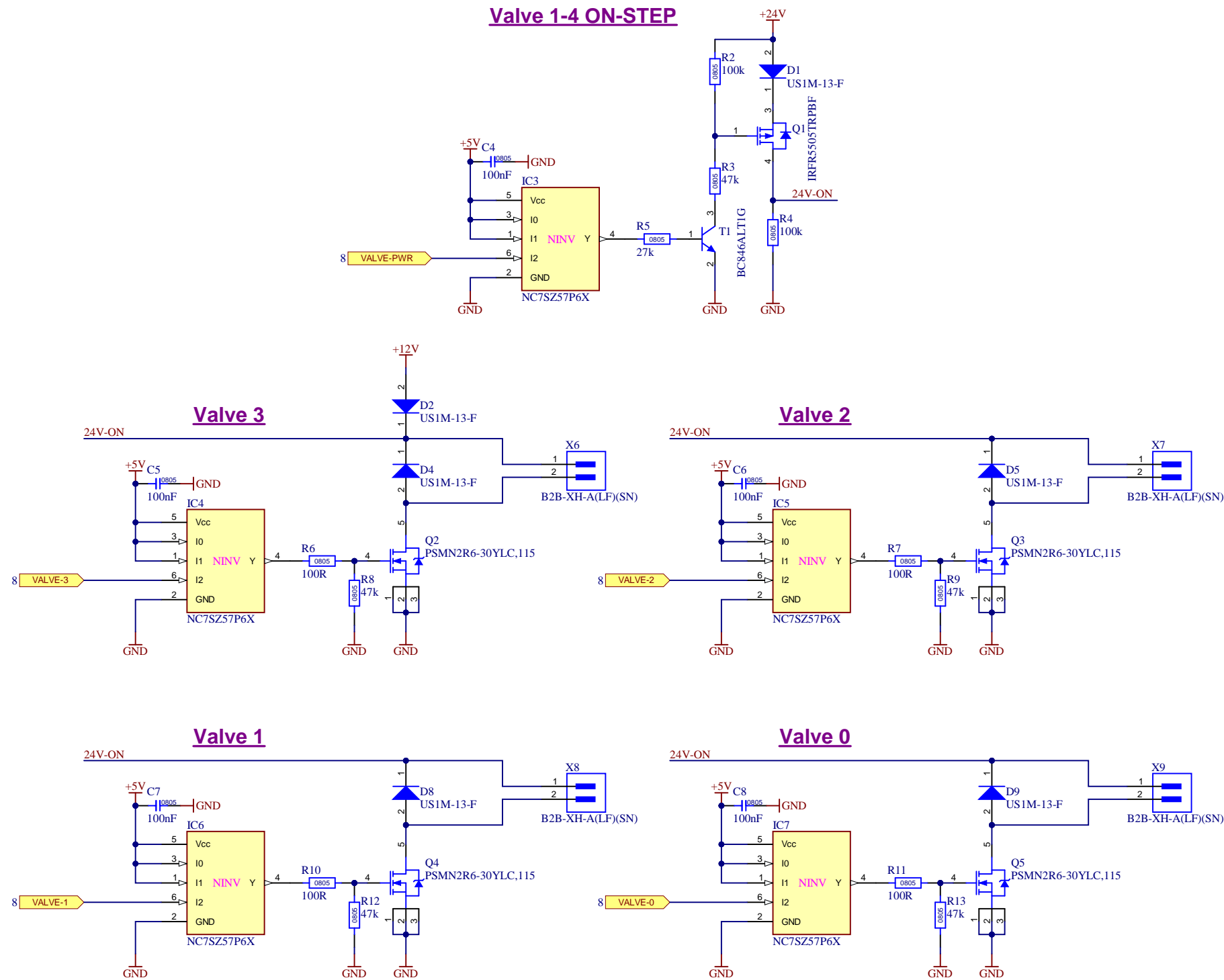
TFT-Interface

TFT Connector



Valve-Control

Valve 1-4 ON-STEP



| | | |
|---------------------------------|-------------------|-----------------|
| Title: Valve-Control | | |
| Customer: Sykam GmbH | | |
| Size: A3 | PNr: G_Partnumber | Version: V1R1 |
| Date: 09.03.2023 | Time: 09:05:03 | Sheet: 11 of 13 |
| File: [12]-Valve-Control.SchDoc | | |

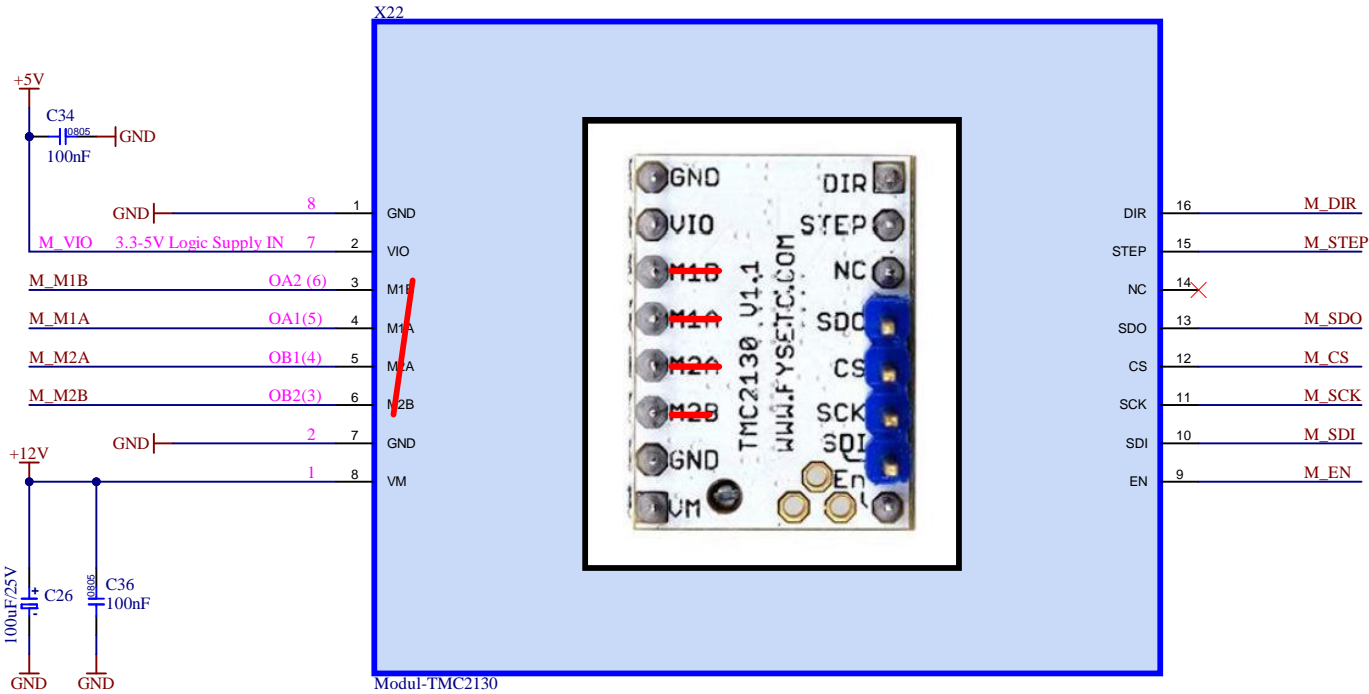
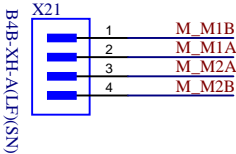
SYKAM GmbH
Gewerbering 15
86922 Eresing
Germany
<https://sykam.com>
Engineer: Stephan Diel



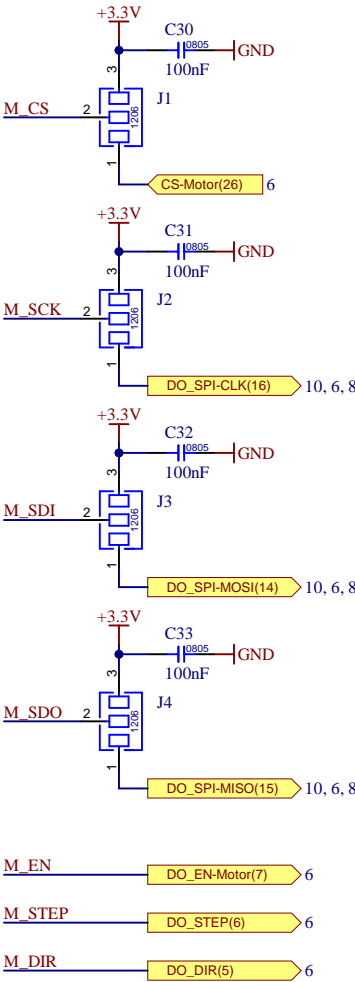
Motorcontroller

Stepmotor Controller Modul

Motor Connector



Solder Jumper Mode / SPI



| | | | | | | |
|---------------------------------|------------------------------------|------------------------------------|--|--|-------------------------|---------------------------------|
| Mod1 [01]-COVERPAGE.SchDoc | Mod2 [02]-BLOCK-DIAGRAMM.SchDoc | Mod3 [03]-HWBOOTSEQUENCE.SchDoc | Mod4 [04]-ADDITIONAL-BOM-PARTS.SchDoc | Mod5 [05]-DOC-REVISION-HISTORY.SchDoc | Mod8 [07]-MCU.SchDoc | Mod9 [08]-PowerSupply.SchDoc |
| Mod10 [09]-Digital-IO.SchDoc | Mod10 [10]-I2C-Switch.SchDoc | Mod10 [11]-TFT-Interface.SchDoc | Mod10 [12]-Valve-Control.SchDoc | Mod10 [13]-Motorcontroller.SchDoc | | |

TEMPLATE NOTES

S3800
Sykam GmbH
G_Partnumber

Set Projekt Parameters:

- 1.) Go to Project -> Project Options -> Parameters
 - 2.) Set Company-, Project- and VersionRevision
- Note: G_ = Project Global Variable, L_ Local Sheet Variable

Mark not mounted Components as:

NF NF

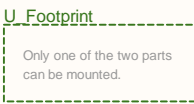
Net Class Example:



Differential signal example:



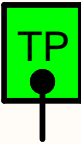
Shared Footprint (Union):



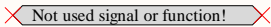
Reserve Contact on Connectors:



Via Testpoint:



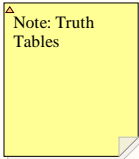
Not Used:



Design Notes:

| | | | | |
|--|---|---|--|--|
| DESIGN NOTE: Example text for informational design notes. | DESIGN NOTE: Example text for cautionary design notes. | DESIGN NOTE: Example text for critical desing notes. | LAYOUT NOTE: Example text for critical layout guidelines. | SOFTWARE NOTE: Example Text for Frimware and Debug notes. |
|--|---|---|--|--|

Digital Operation Notes:




Page Headline

Circuit Heading

Schematic Status Explanation:

- DRAFT - Very early stage of schematic, ignore details.
- PRELIMINARY - Close to final schematic.
- CHECKED - There should not be any mistakes. Tell the engineer if you find one.
- RELEASED - A board with this schematic has been sent to production.

| | | | | |
|-------------------------------------|-------------------|-----------------|---|---|
| Title: S3800 | | | SYKAM GmbH Gewerbering 15 86922 Eresing Germany https://sykam.com |  |
| Customer: Sykam GmbH | | | | |
| Size: A3 | PNr: G_Partnumber | Version: V1R1 | | |
| Date: 09.03.2023 | Time: 09:05:03 | Sheet: 13 of 13 | | |
| File: [TOP-PAGE]-BASEPROJECT.SchDoc | | | | |
| | | | Engineer: Stephan Diel | |