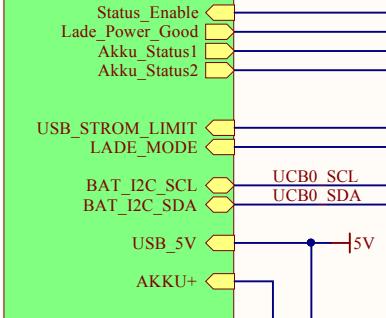
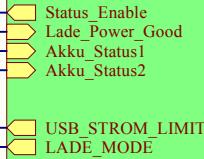


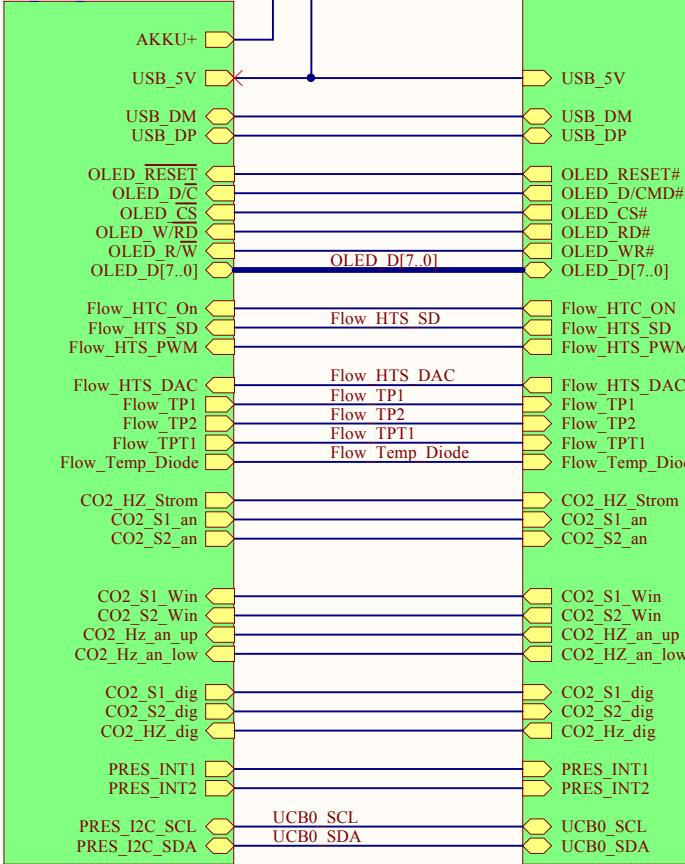
Akku
EIS Main Akku.SchDoc



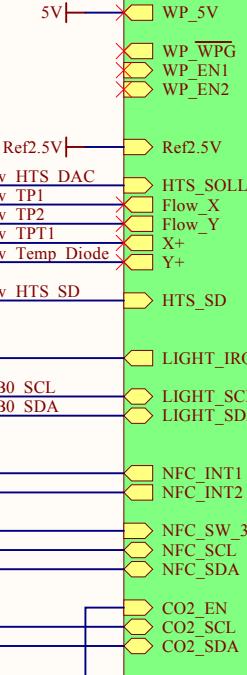
Designator
EIS Main MSP430F6638.SchDoc



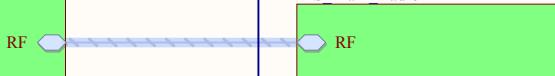
Interface
EIS Main Interface.SchDoc



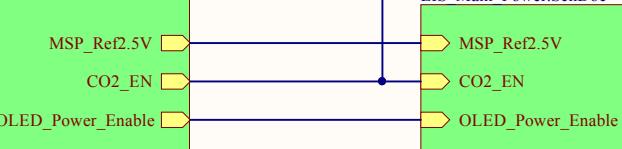
SensorInterface
EIS Main SensorInterface.SchDoc



Radio
EIS Main Radio

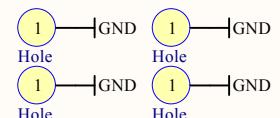


Designator
EIS Main Power.SchDoc



Rudis Änderungen:

- Bestellnummern für alle Bauteile hinzugefügt
- J300 -> bei Digi-Key statt bei Farnell bestellt
- Grund: Farnell Min.bestellmenge = 125 Stück
- Footprint angelegt: WE_694102304002
- in Schematic: 6 weitere (unsichtbare) Pins entfernt
- Original: AGND und GND ist verbunden über Net-Tie
- aber was ist mit DGND (oder DGnd)?
- nach Rücksprache mit Jürgen:
- USB-Part und auch P1 (+P2) auf normal GND (vorher DGND)
- 4 x Befestigungsbohrung hinzugefügt
- Hahn-Schickard-Logo hinzugefügt
- Outputjob für Bestückungsdruck hinzugefügt
- der µBGA hat einen so kleinen Pitch, dass ich mit 0.15mm Leiterbahnen nicht verdrahten kann
- Die Platine wird also teurer!!!



Hahn-Schickard
LOGO

Project Name: ESIMA_EIS.PrbPcb

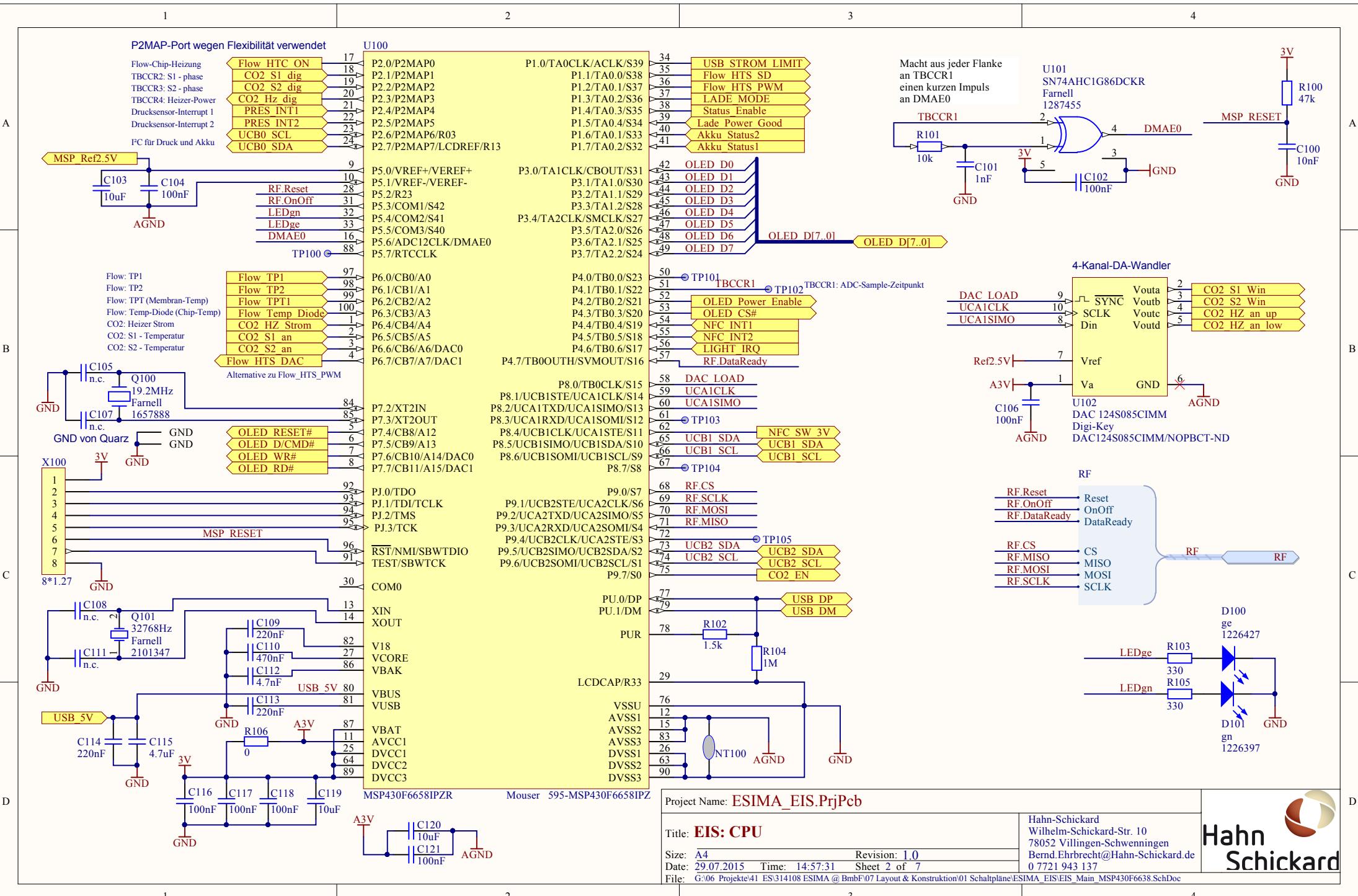
Title: EIS: Main

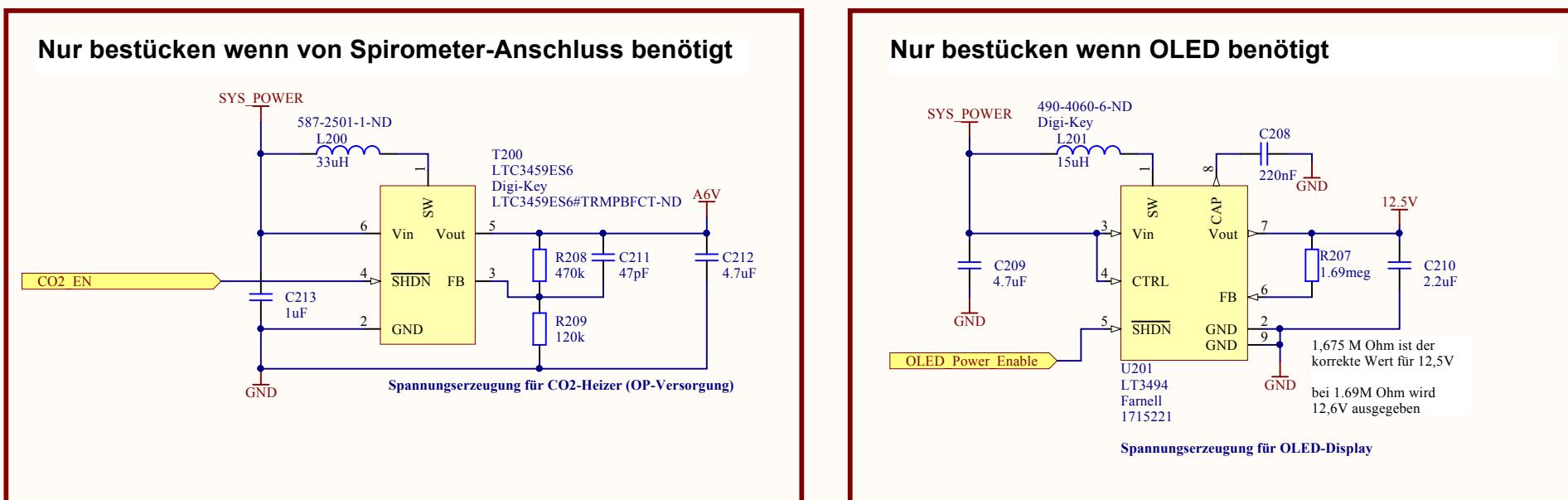
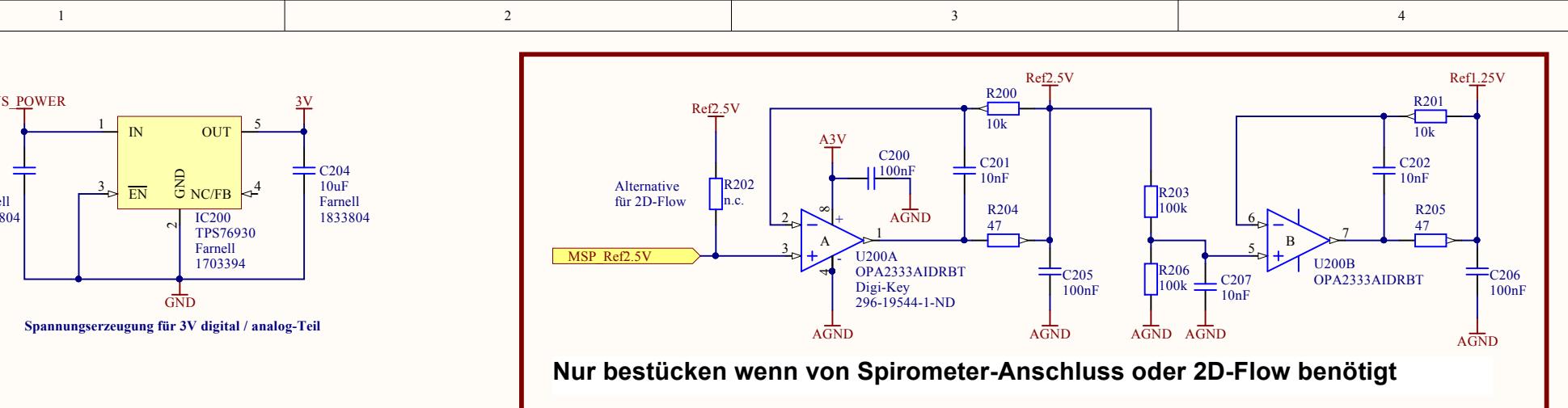
Size: A4 Revision: 1.0

Date: 29.07.2015 Time: 14:57:31 Sheet 1 of 7

File: G:\06 Projekte\41 ES314108 ESIMA @ BmbF\07 Layout & Konstruktion\01 Schaltpläne\ESIMA_EIS_Main.SchDoc

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Project Name: **ESIMA_EIS.PrjPcb**

Title: **EIS: Netzteile**

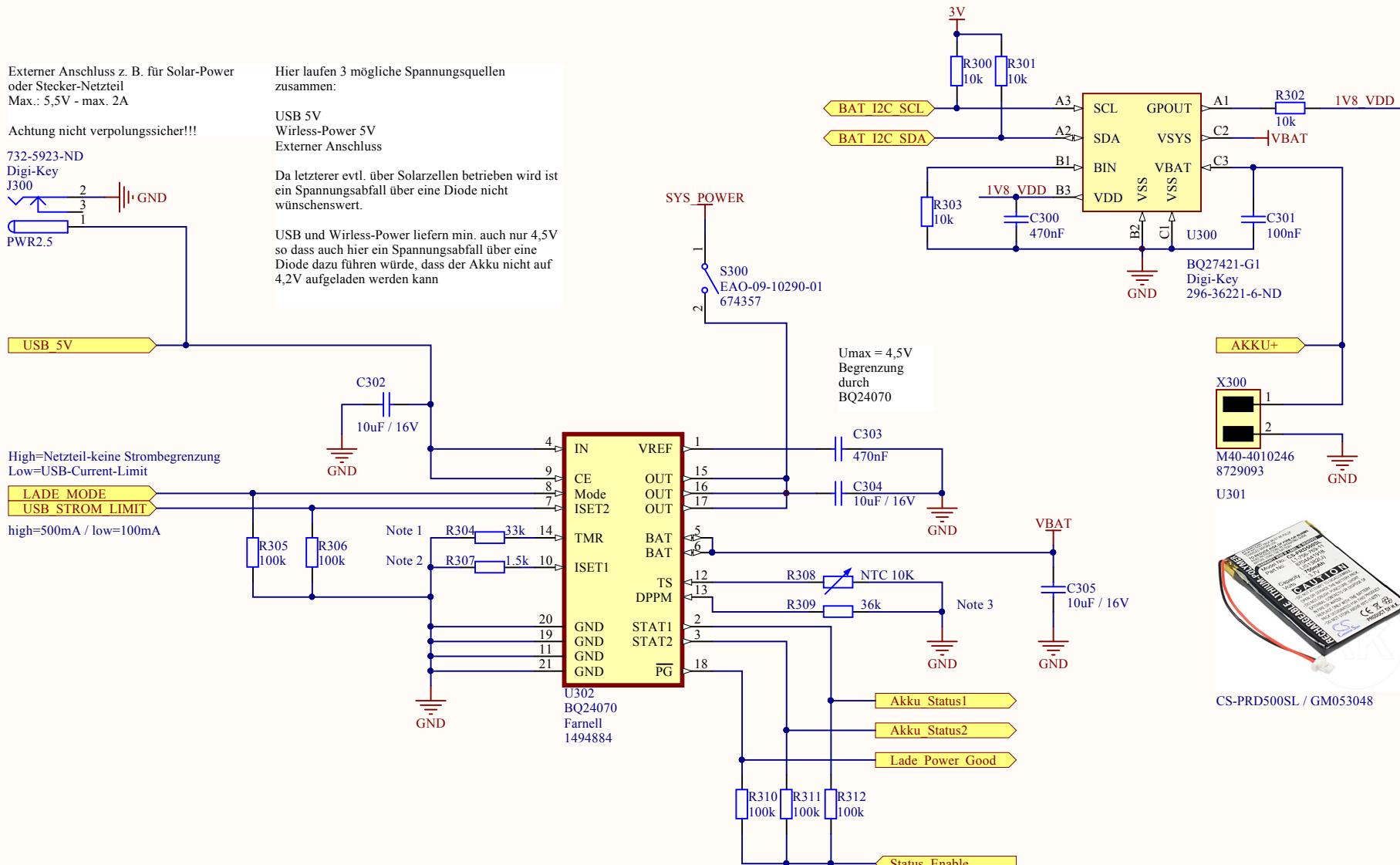
Size: **A4** Revision: **1.0**

Date: **29.07.2015** Time: **14:57:32** Sheet **3 of 7**

File: **G:\06 Projekte\41 ES314108 ESIMA @ BmbF\07 Layout & Konstruktion\01 Schaltpläne\ESIMA_EIS_Main_Power.SchDoc**

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Bernd.Ehrbrecht@Hahn-Schickard.de
0 7721 943 137

**Hahn
Schickard**



Note 1: $t(\text{chg}) = K(\text{set}) * R(\text{set}) = 0,360 * 33\text{k} = 3,3\text{h}$

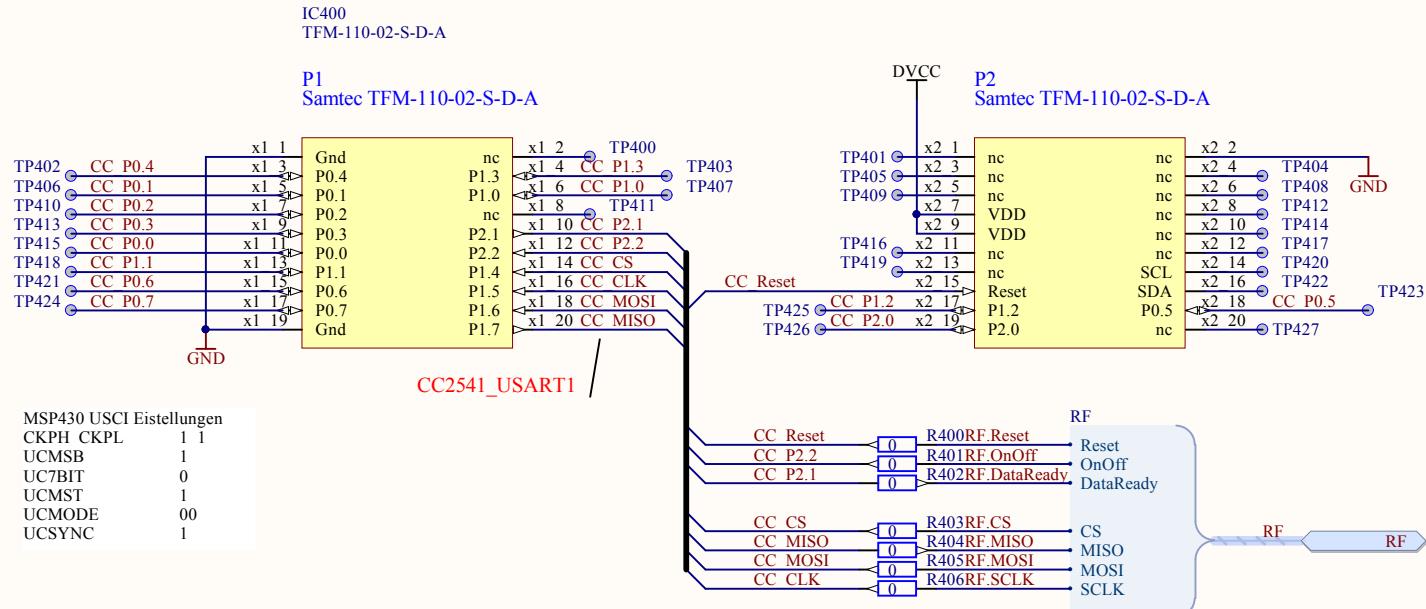
Note 2: $I(\text{set}) = V(\text{set}) * K(\text{set}) / R(\text{set}) = 2,5V * 425 / 1,5K = 708mA$

Note 3: $V(DPPM-Reg) = I(DPPM-SET) * SF * R(DPPM)R(DPPM) = 100 \mu A * 1.15 * 36k = 4.14V$

Project Name: ESIMA_EIS.PrjPcb	
Title: EIS: Akkulader und Überwachung	Hahn-Schickard Wilhelm-Schickard-Str. 10 78052 Villingen-Schwenningen Bernd.Ehrbrecht@Hahn-Schickard.de 0 7721 943 137
Size: A4	Revision: 1.0
Date: 29.07.2015	Time: 14:57:32
File: G:\06_Projekte\41_ESI\314108_ESIMA @Bnef07\1_layout & Konstruktion\01_Schaltpläne\ESIMA_EIS.EIS.Main_Akku.SchDoc	Sheet 4 of 7

A

1



SPI Hardware Konfiguration

	Funkmodul	Sensormodul	
Pin- Name	Slave	Master	Funktionsbeschreibung
CLk	I	O	SPI Seriell Clock
MOSI	I	O	SPI Master Out - Slave In
MISO	O	I	SPI Master In - Slave Out
CS	I	O	SPI Chip Select (Active Low)
RF_DataReady	O	I	Daten von Basisstation empfangen (Active Low)
RF_Reset	I	O	Reset Funkmodul (Active Low)
RF_OnOff	I	O	Radio On/Off (Active Low)

Project Name: **ESIMA_EIS.PrjPcb**

Title: **EIS: Funk-Anbindung**

Size: A4 Revision: 1.0

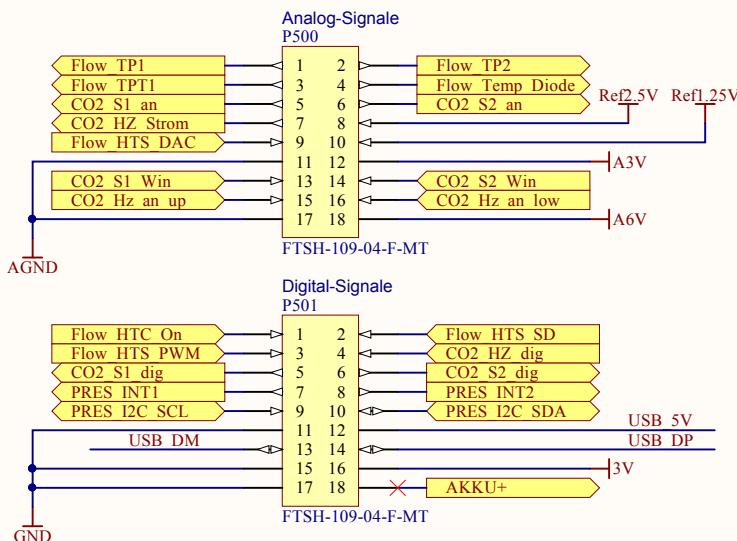
Date: 29.07.2015 Time: 14:57:32 Sheet 5 of 7

File: G:\06_Projekte\41_ES\314108_ESIMA@BmbF\07_Layout & Konstruktion\01_Schaltpläne\ESIMA_EIS\EIS_Main_Radi

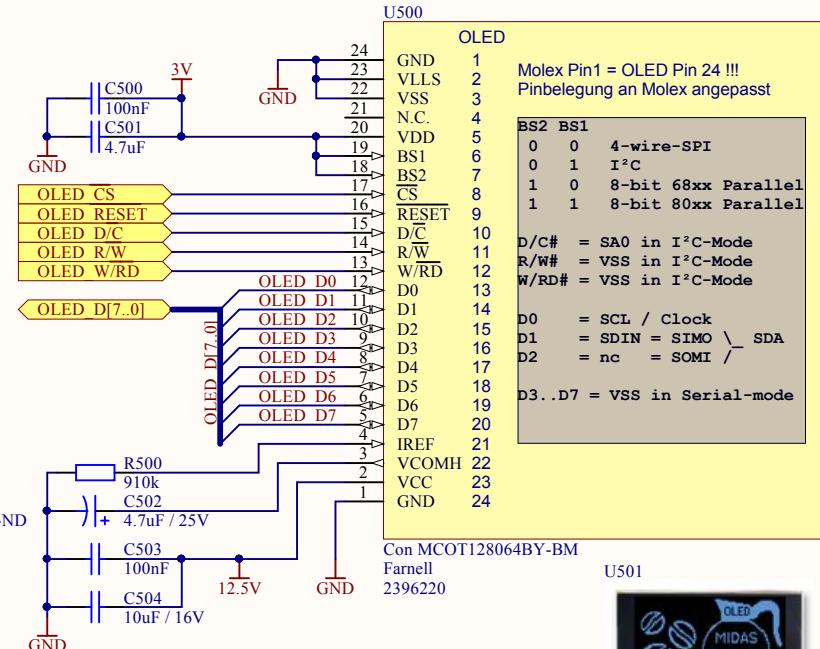
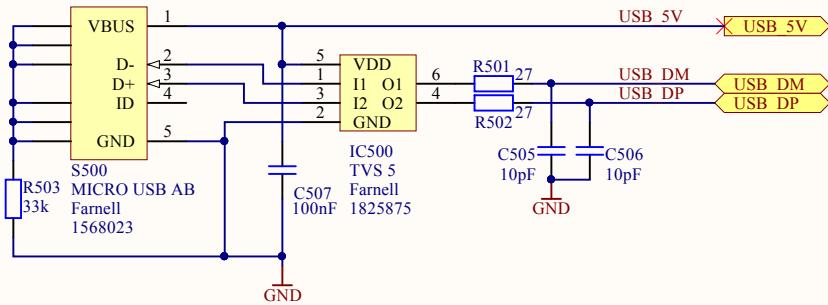
Hahn-Schickard
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78052 Villingen-Schwenningen
Bernd.Ehrbrecht@Hahn-Schickard.de
0 7721 943 137

The logo consists of the company name "Hahn Schickard" in a bold, black, sans-serif font. To the left of the text is a blue square containing a white letter "e". To the right of the text is a stylized graphic element composed of three curved, overlapping bands in shades of brown, tan, and cream.

Spirometer-Interface: Bitte Stecker in gleichem Abstand wie beim Spirometer platzieren damit Hardware kompatibel bleibt



MICRO-USB-Anschluss



Project Name: ESIMA_EIS.PrjPcb

Title: Optionale Schnittstellen

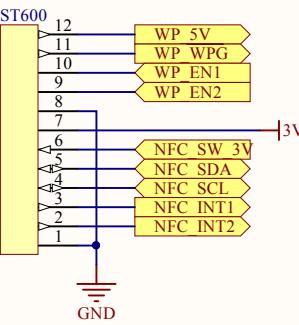
Size: A4 Revision: 1.0

Date: 29.07.2015 Time: 14:57:32 Sheet 6 of 7

File: G:\06 Projekte\41_ES314108 ESIMA @ BmbF\07 Layout & Konstruktion\01 Schaltpläne\ESIMA_EIS_Main_Interface.SchDoc

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 0 7721 943 137

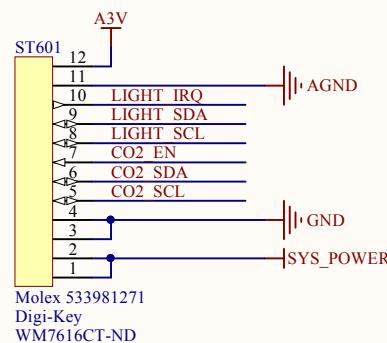
Hahn Schickard



Molex 533981271
Digi-Key
WM7616CT-ND

Damit sich die Kabel nicht kreuzen,
wurden hier die Pins gedreht:

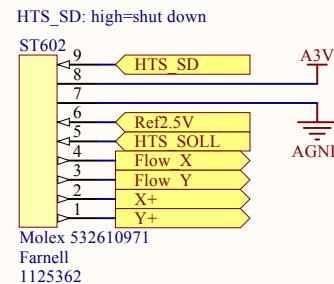
Pin 1 ----- Pin12
----- Pin1



Molex 533981271
Digi-Key
WM7616CT-ND

Damit sich die Kabel nicht kreuzen,
wurden hier die Pins gedreht:

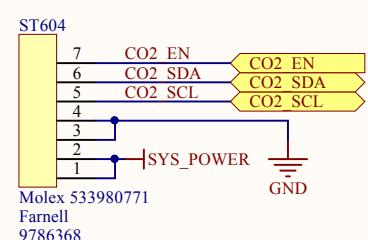
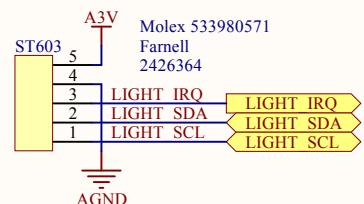
Pin 1 ----- Pin12
----- Pin1



HTS_SD: high=shut down
Molex 532610971
Farnell
1125362

Damit sich die Kabel nicht kreuzen,
wurden hier die Pins gedreht:

Pin1 ----- Pin9
----- Pin1



Molex 533980771
Farnell
9786368

Project Name: ESIMA_EIS.PrjPcb

Title: **Wirless-Power und Sensor-Schnittstellen**

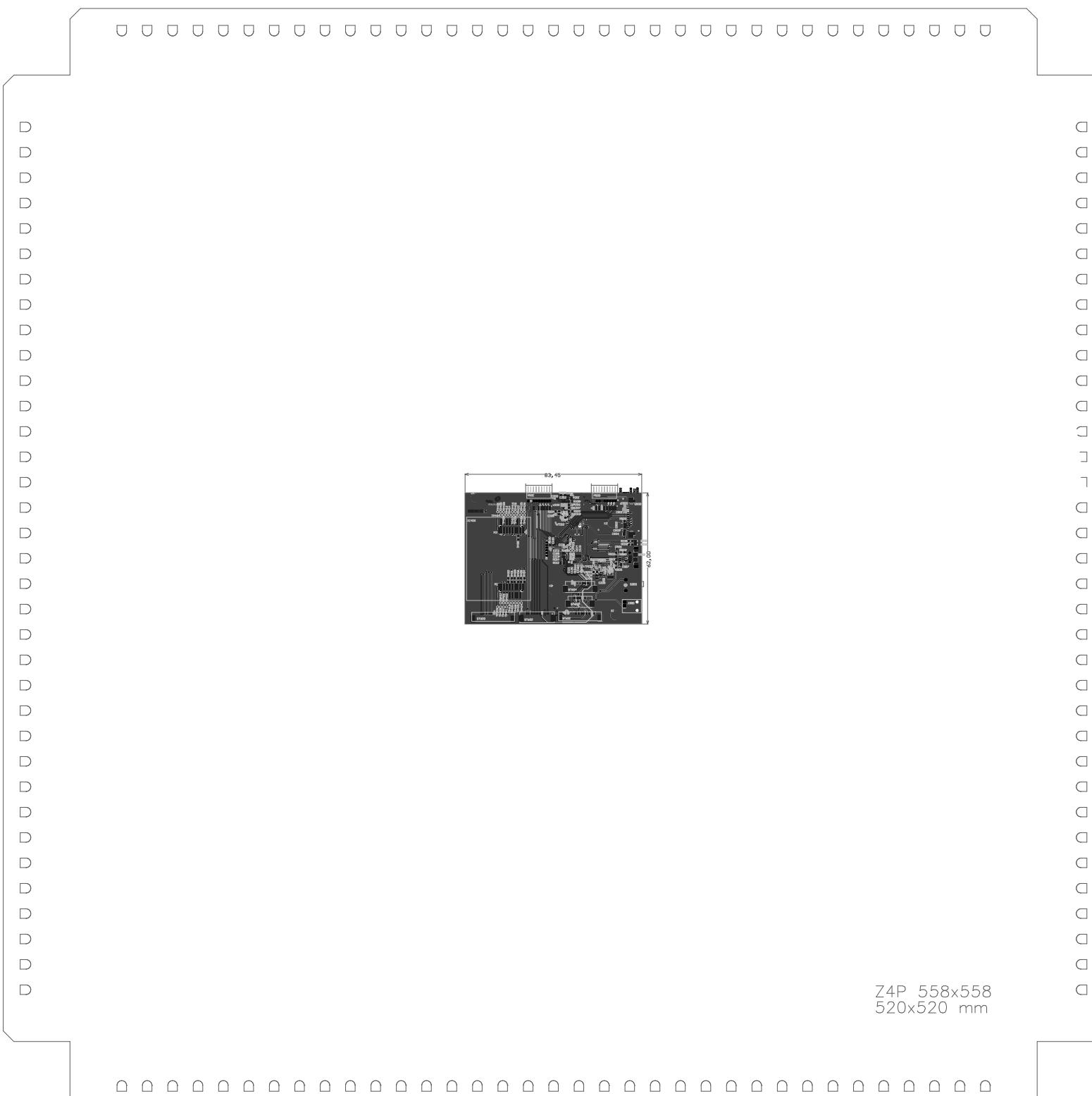
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Date: 29.07.2015 Time: 14:57:32 Sheet 7 of 7

File: G:\06 Projekte\41_ES314108_ESIMA @ BmbF\07 Layout & Konstruktion\01 Schaltpläne\ESIMA_EIS_Main_SensorInterface.SchDoc

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Z4P 558x558
520x520 mm

