

# Embedded Systems Hands-On 1: Design and Implementation of Hardware/Software Systems

Documentation of the Extensionboard  
Johannes Lauinger

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TECHNISCHE  
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DARMSTADT



Embedded Systems & Applications



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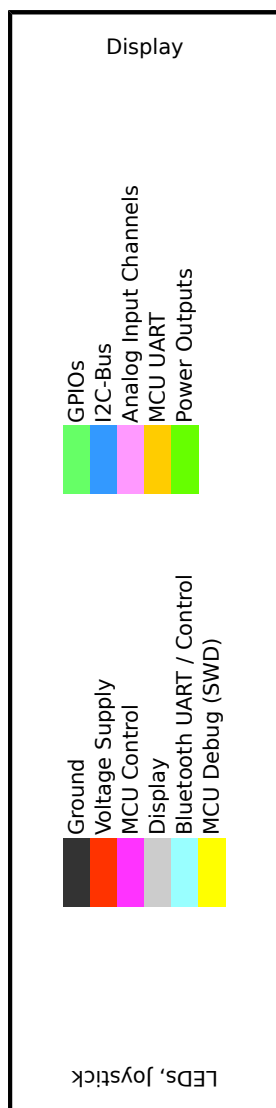
## 1 Specification

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Operating voltage: 5 V

## 2

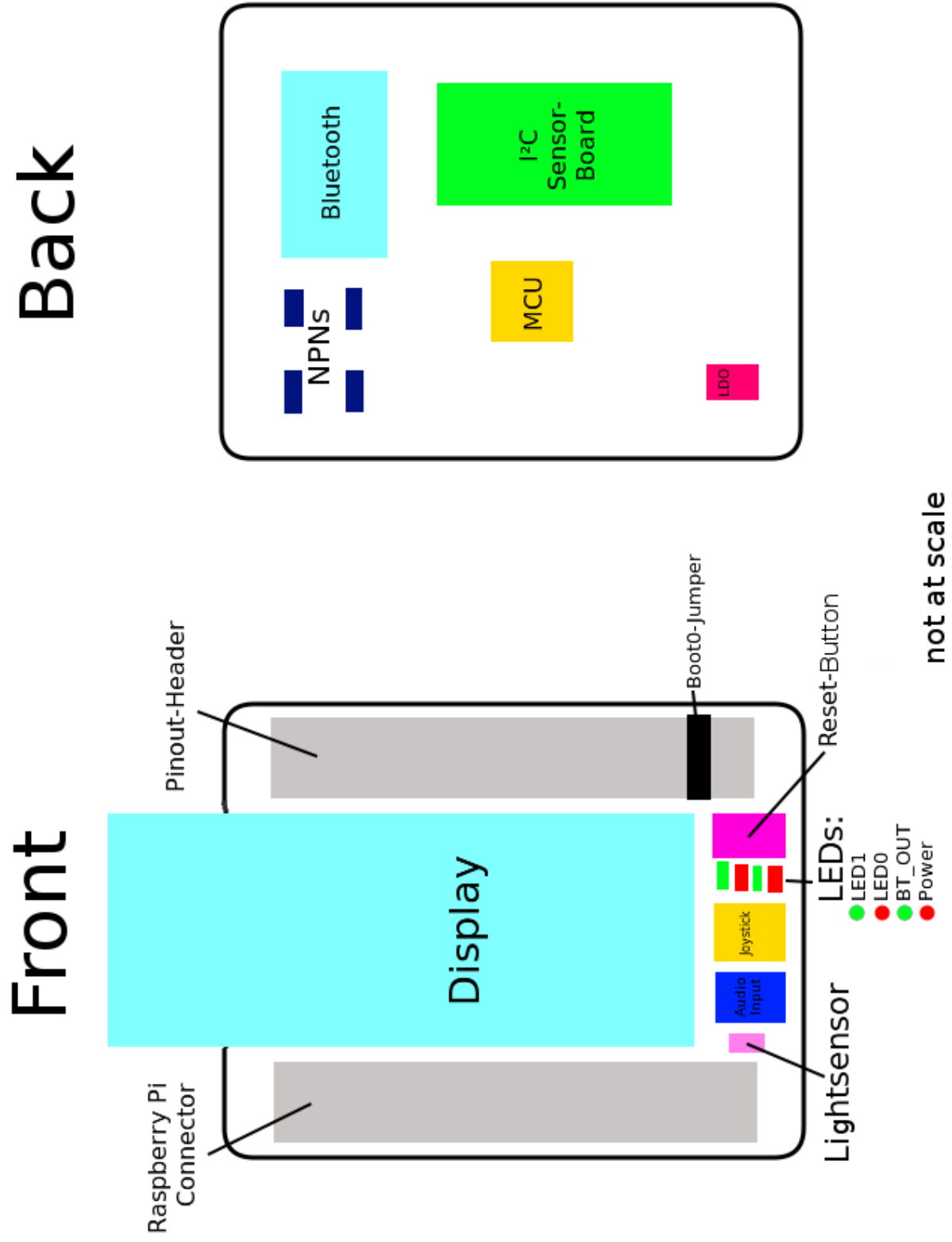
5V	5V		RX	TX	LED	10	9		DC		RESET	CE					GND		
	SDA	SCL								MOSI	MISO	SCK		SWCLK	SWD				GND



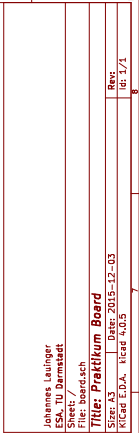
GND	GND	GND	MISO	MOSI	CE	TX	CTS	OUT	SWCLK	1	3	5	7	SCL	8	RIGHT	RX	M2	M4
3.3V	5V	Boot0	SCK	DC	NRST	RX	RTS	KEY	SWD	0	2	4	6	SDA	LIGHT	LEFT	TX	M1	M3

## Pinout Header

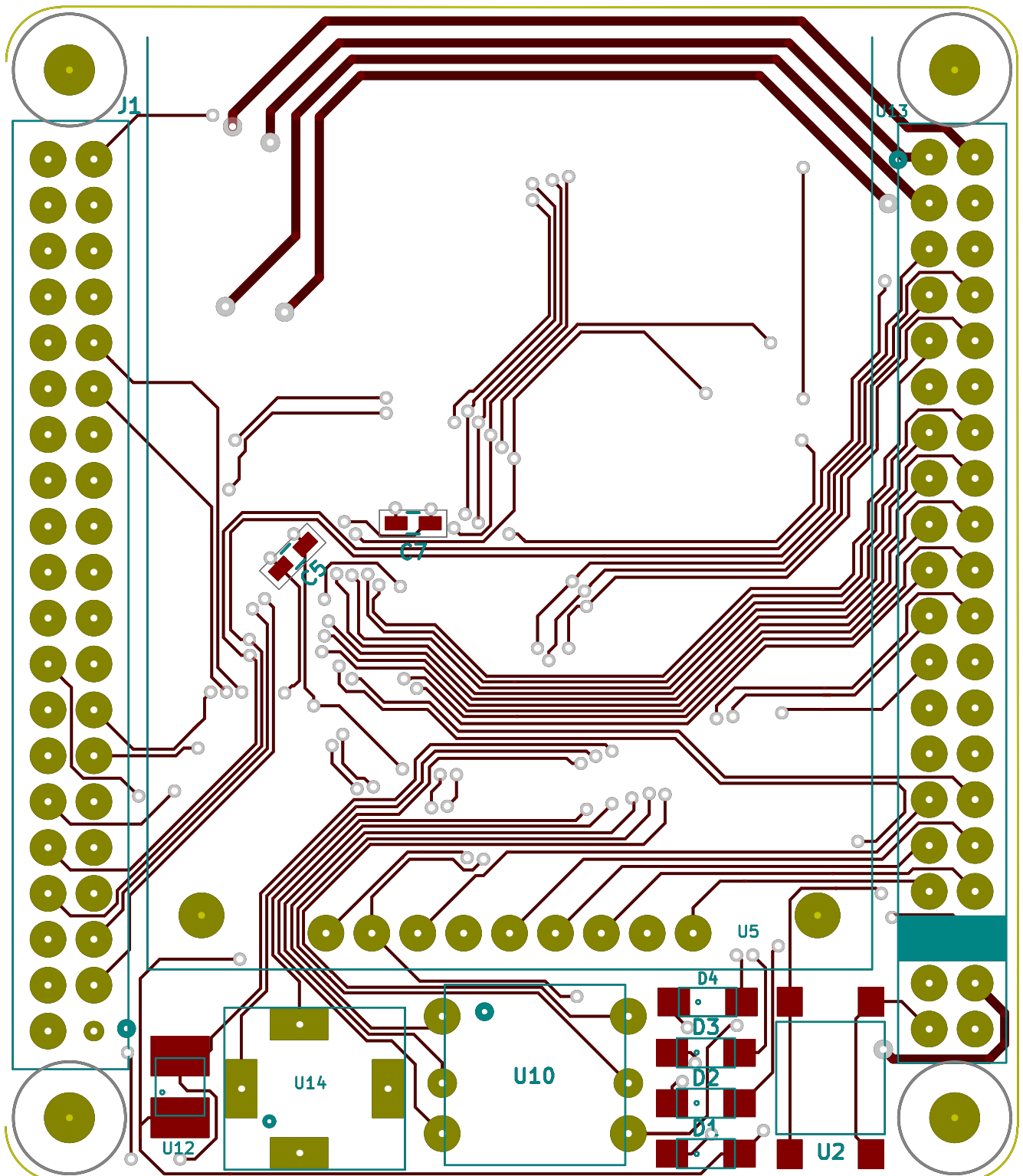
### 3 Arrangement of Components

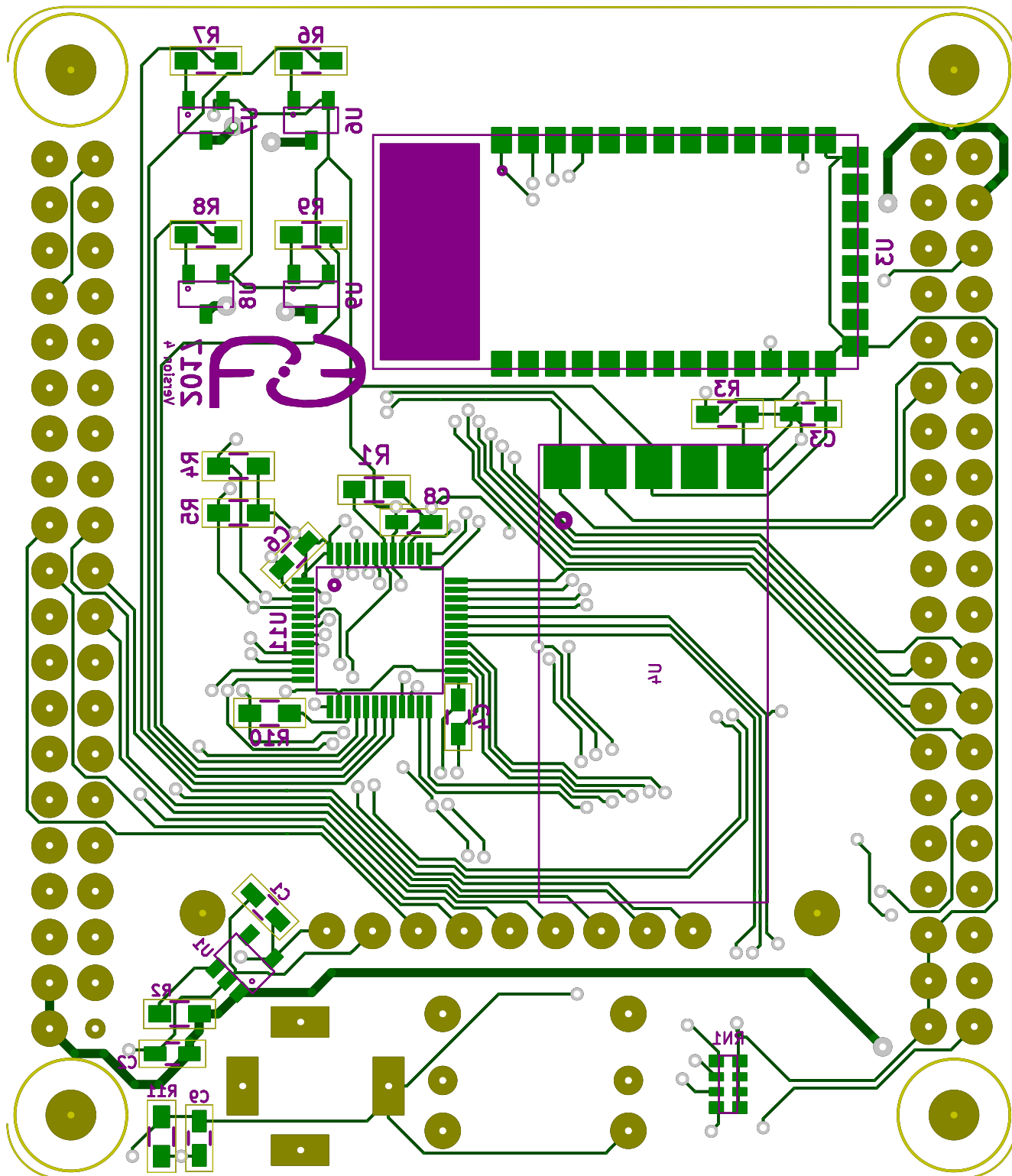


## 4



## 5 PCB Layout







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## 6 References for Relevant Components

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Component	Name	Description	References
U1	MIC5504-3.3YM5-TR	Voltage Regulator	<a href="#">Datasheet</a>
U2	MC32882	Reset Button	<a href="#">Datasheet</a>
U3	HM-10	Bluetooth-Modul	<a href="#">Resources</a>
U4	AltIMU-10_v3	Integriertes Sensor-Board	<a href="#">Distributor</a>
U5	Ili9341	LCD-Display	<a href="#">Specification</a>
U6,U7,U8,U9	BC81725	NPN-Transistor	<a href="#">Datasheet</a>
U10	SKQUCAA010	Joystick	<a href="#">Datasheet</a>
U11	STM32F030CCT6	ARM Cortex-M0 Mikrocontroller	<a href="#">Datasheet</a>
U12	KPS-3227SP1C	Lichtsensord	<a href="#">Datasheet</a>
U13	SPC20504	40-Pin Header	<a href="#">Datasheet</a>
U14	FC681374V	3.5mm Audio Jack	<a href="#">Datasheet</a>
RN1	EXB38V101JV	100 $\Omega$ resistor array	<a href="#">Datasheet</a>