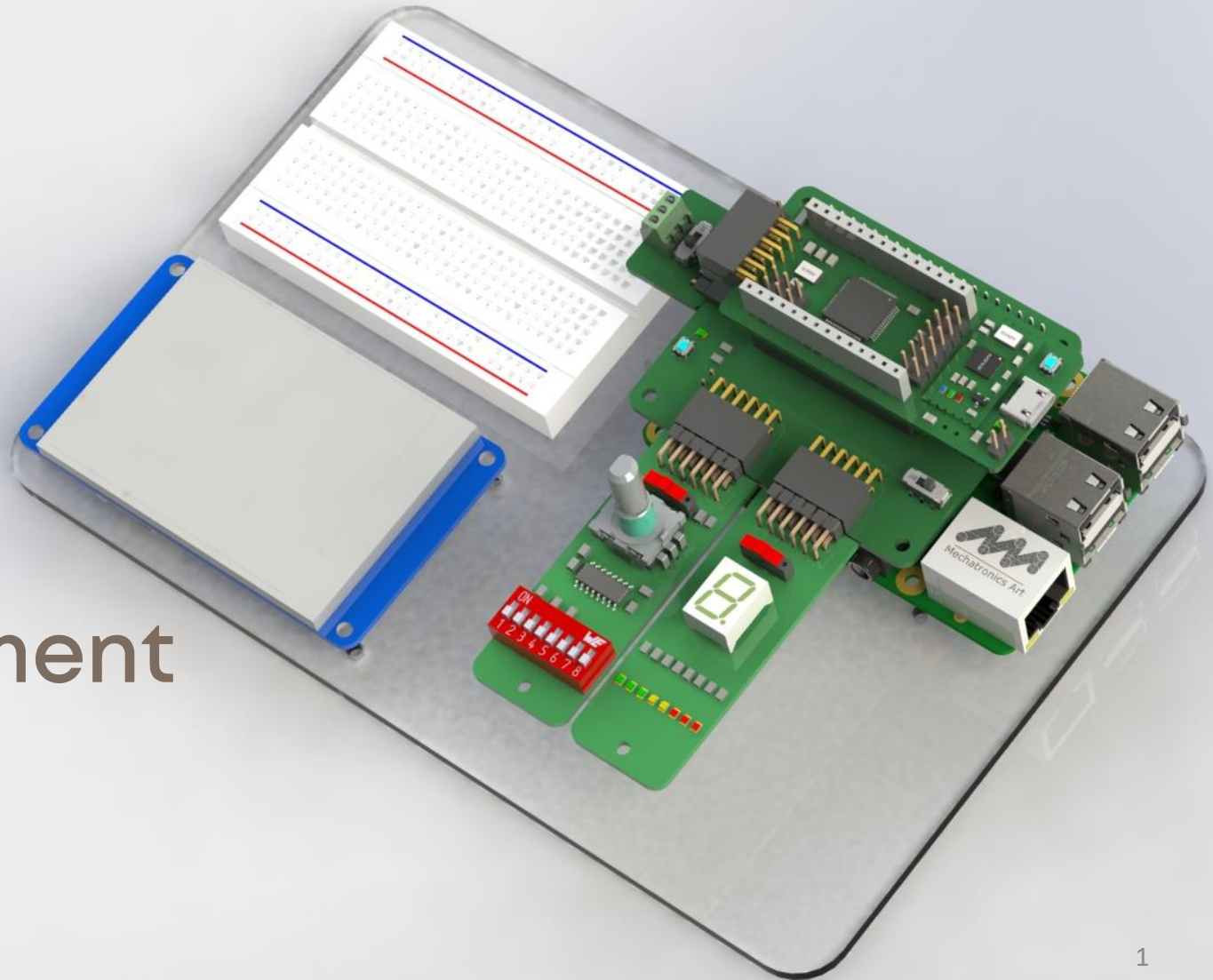
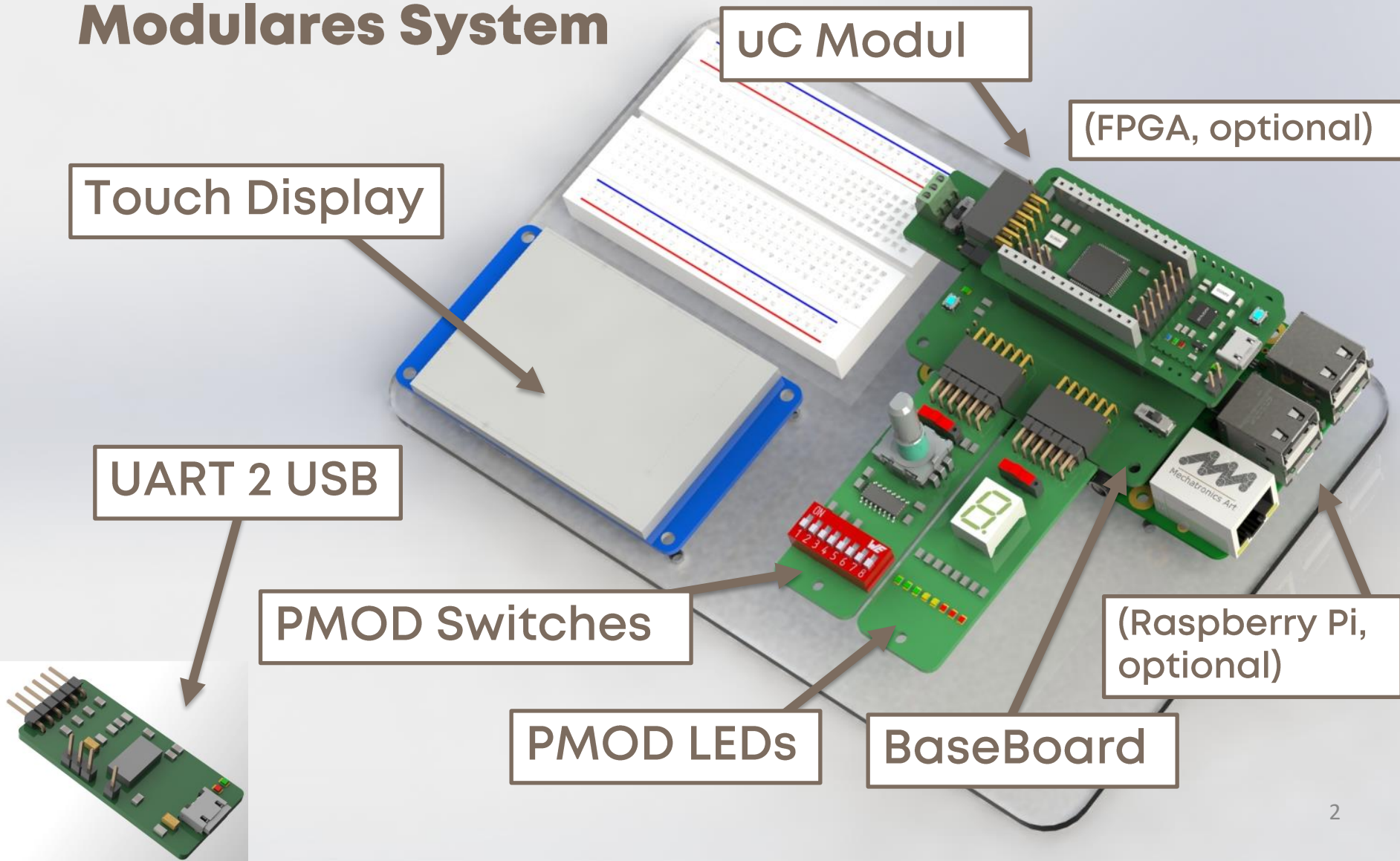


MDDS – Ein Überblick

Modular
Digital
Development
System



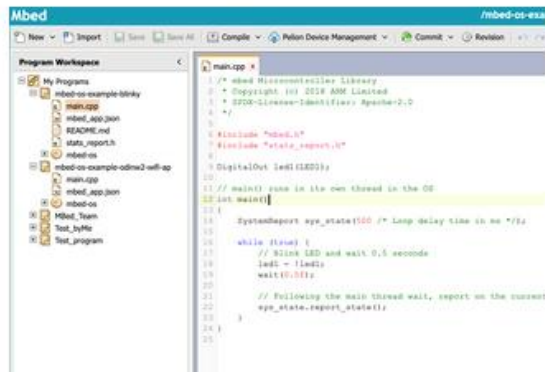
Modulares System



- Modular erweiterbar, kompakt, cool
- Softwaresupport wie bisher (KEIL uVision 5)
- Nicht teurer als bisheriges System
- Zusätzlich Support für Mbed-Ökosystem

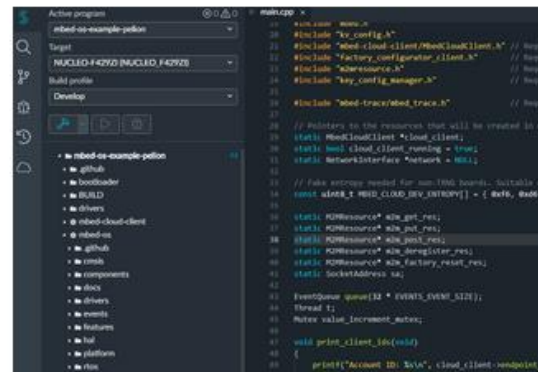
Mbed Online Compiler

The easiest way to get started.



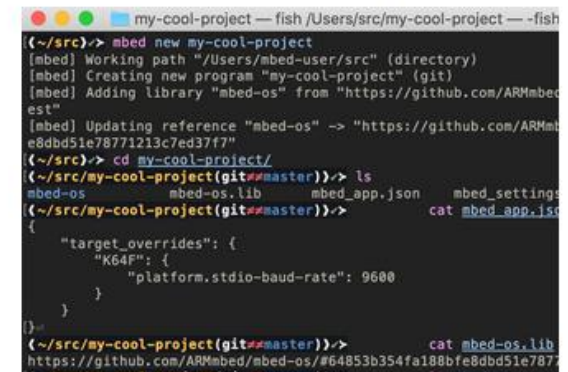
Mbed Studio

The desktop IDE for Mbed OS.

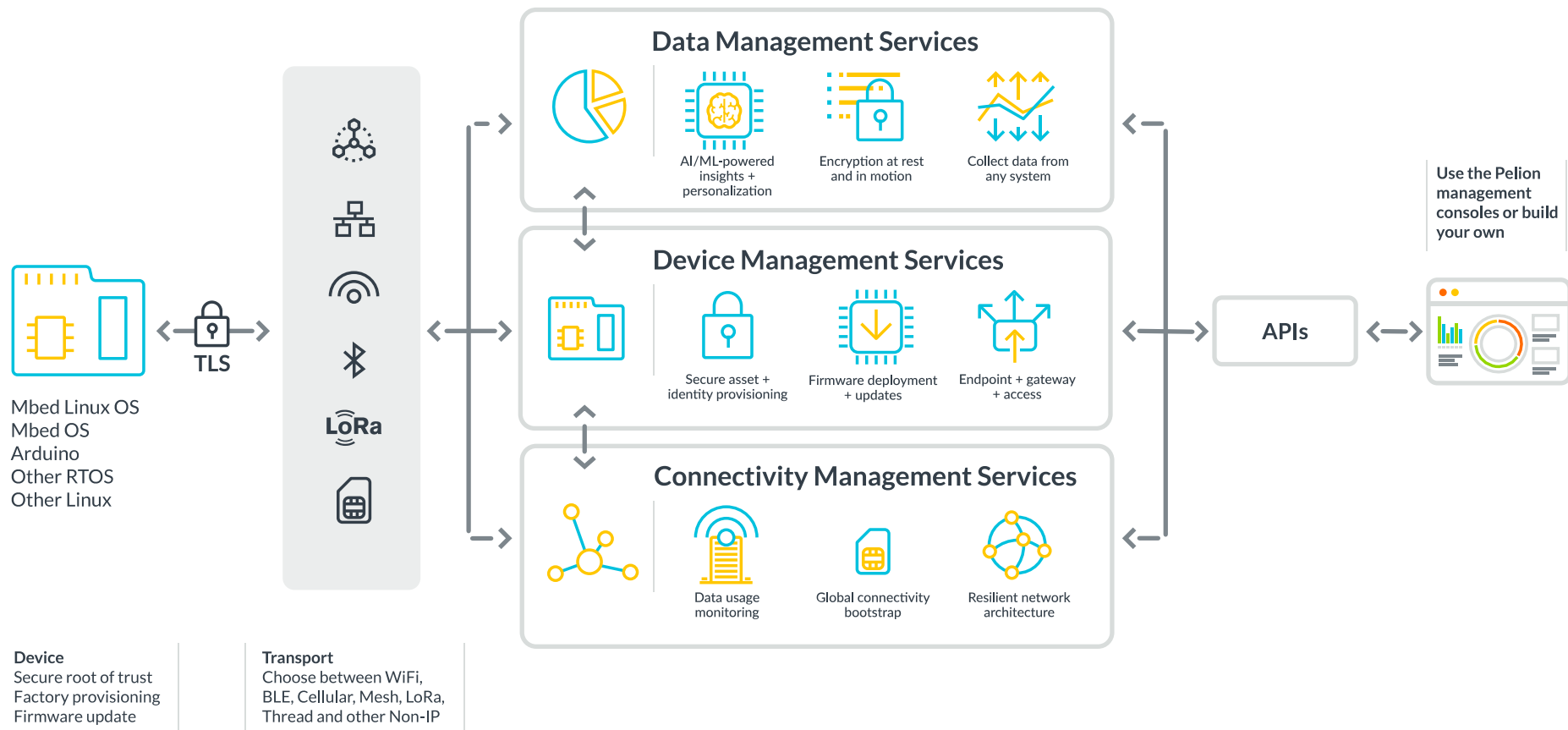


Mbed CLI

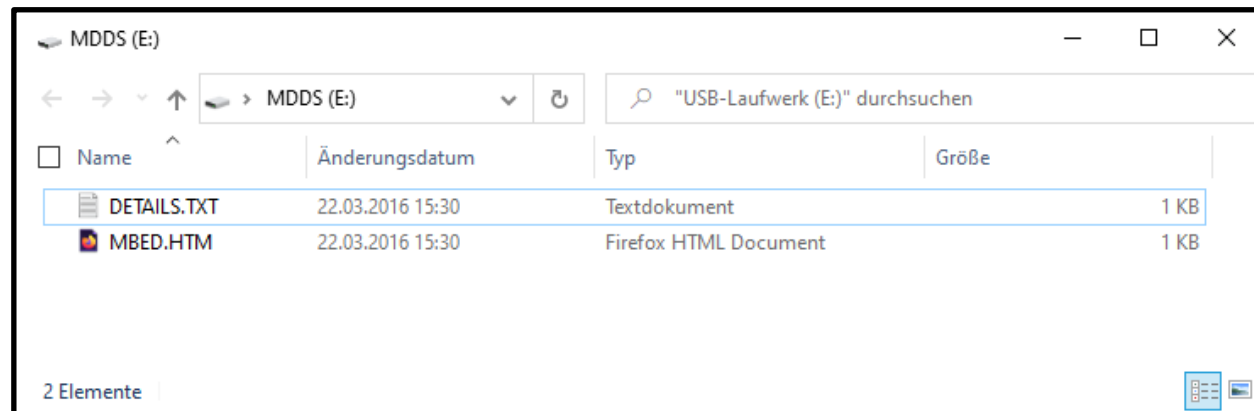
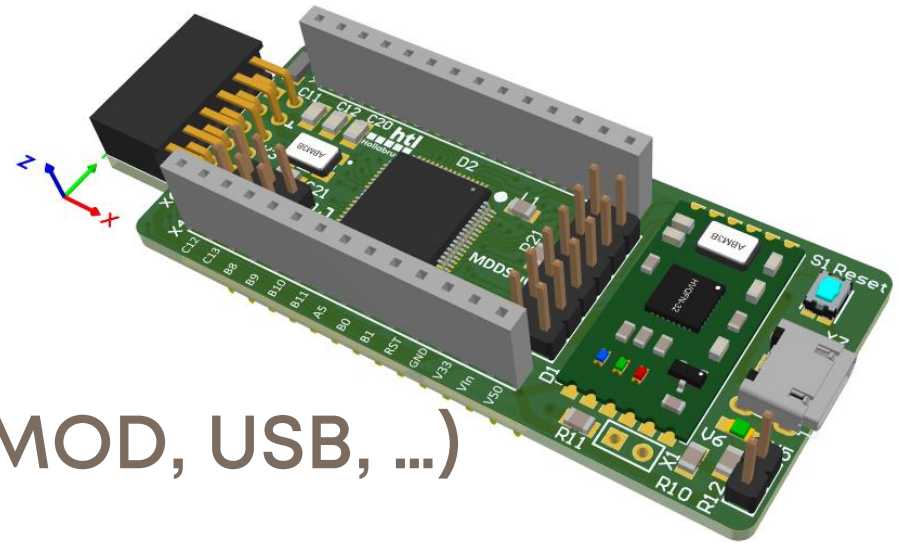
The command line tool for Mbed OS.



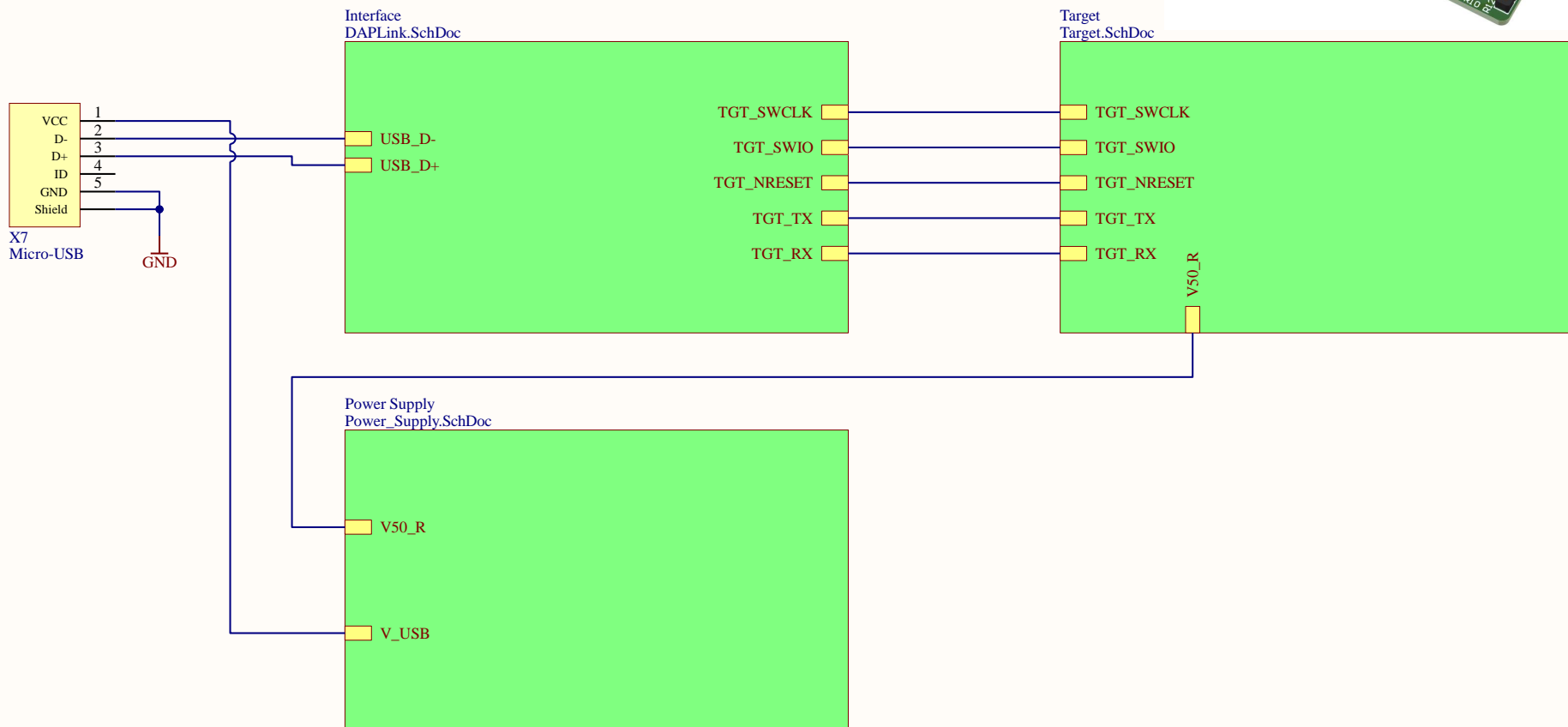
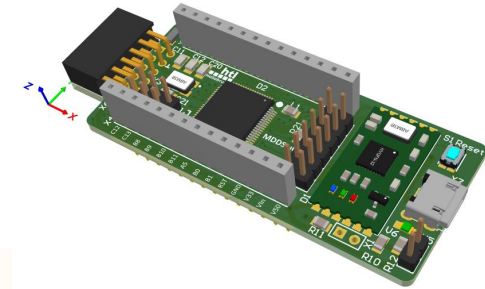
Mbed und Pelion IoT Plattform



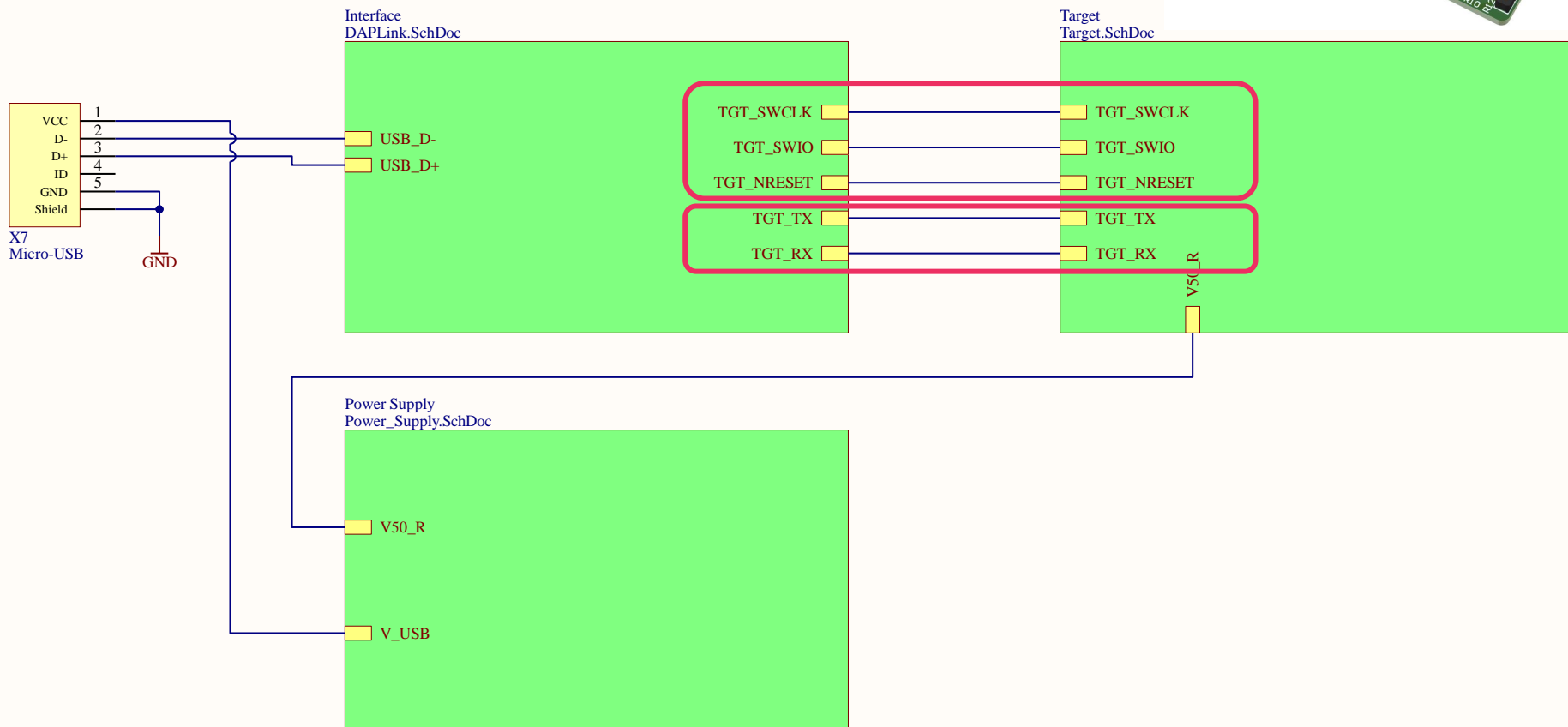
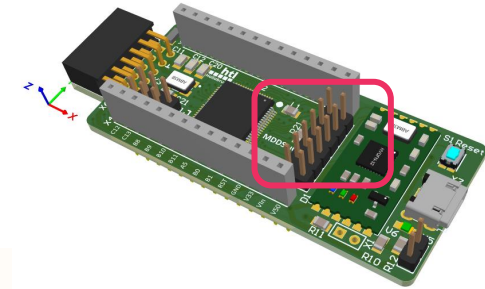
- Cortex M Target Mikrocontroller
- Standalone nutzbar (PMOD, USB, ...)
- Integrierter Debugger sowie UART2USB
- Drag-and-Drop programmierbar:



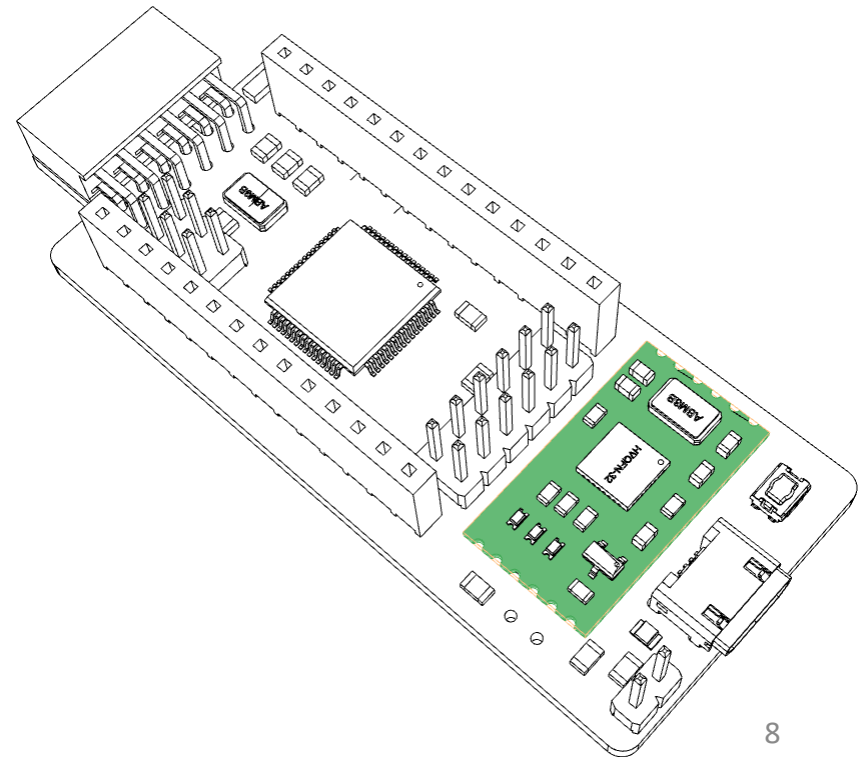
MDDS uC Modul (2/4)



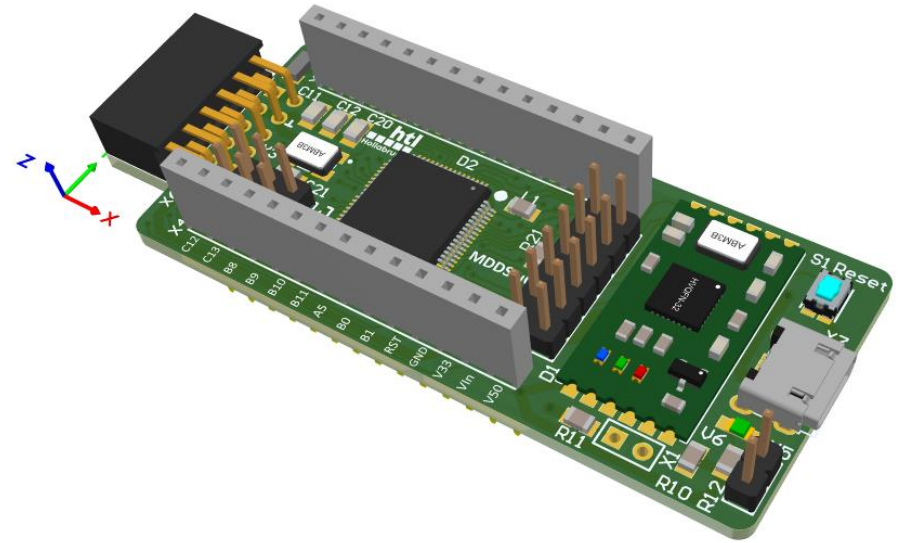
MDDS uC Modul (2/4)



- Debugger „DAPLink“ (Software),
Referenzdesign von ARM HDK (Hardware)
- Open Source (Github)
- Direkt unterstützt
in KEIL uVision5



Microcontroller?

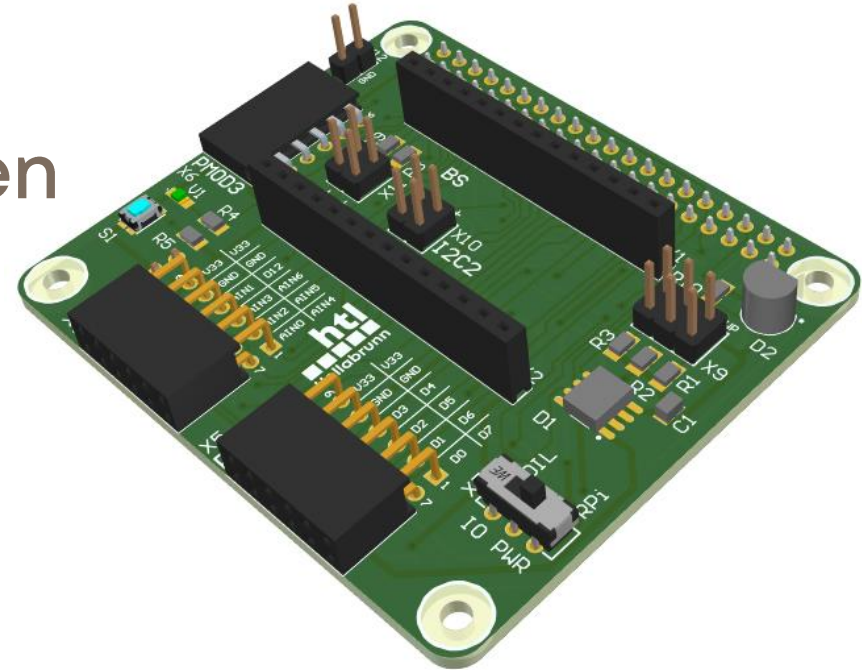


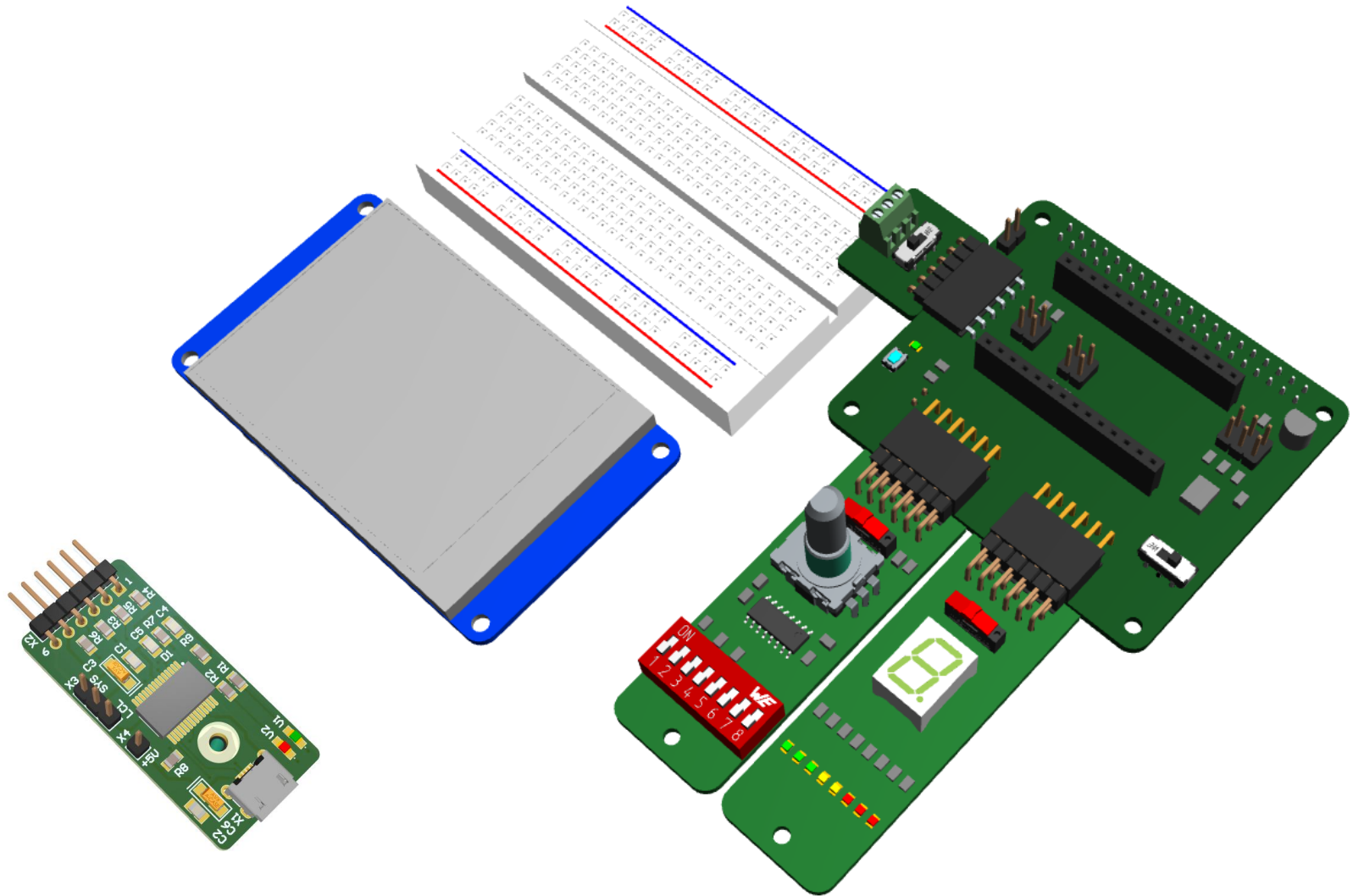
- STM32F103 M3 (bisher, mbed-fähig, kein Audio)
- STM32F107 M3 (nicht mbed-fähig, Audio (I2S))
- STM32F303 M4 (mbed-fähig, Audio (I2S))

Verbindungsglied zwischen
uC Modul und Peripherie
(sowie Raspberry Pi)

Features:

- 3 PMOD Stecker, LED, Schalter, Tempsensor
- Vollwertiges Raspberry HAT (mit EEPROM)
- Kommunikation zw. uC und RPi (UART, I2C, SPI)





- Einfache Steckverbinder-Spezifikation (Firma Digilent)
- Legt Pin-Positionen bei Schnittstellen fest (UART, SPI, I2C, ...) sowie Mechanisches:

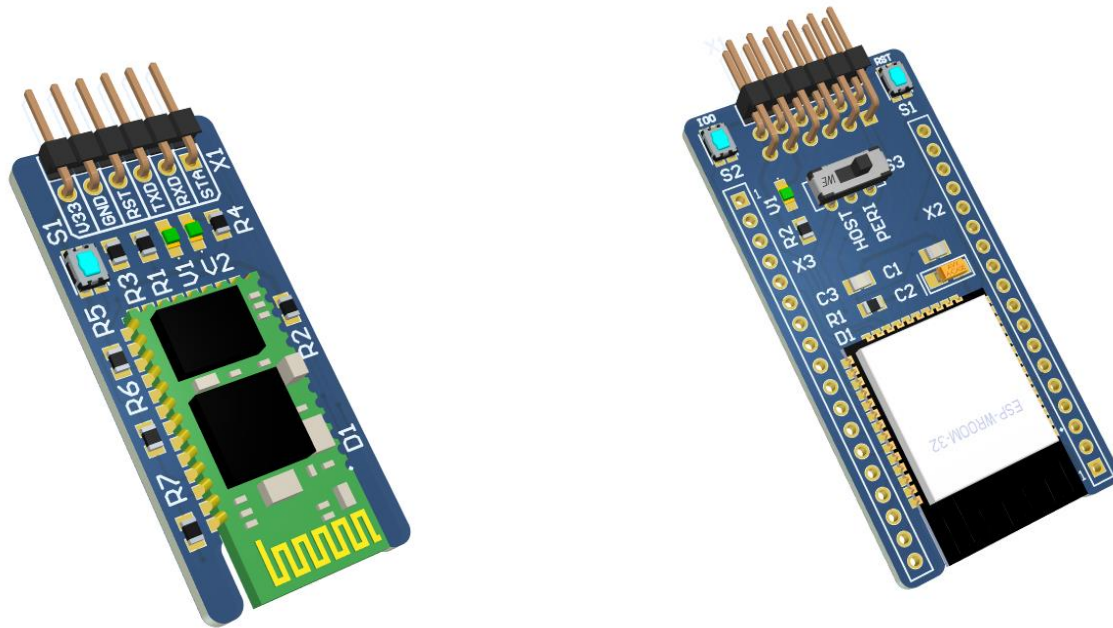


- Entwicklung eigener Module sehr einfach ...
- ... und viele fertige Module am Markt verfügbar:

z.B.

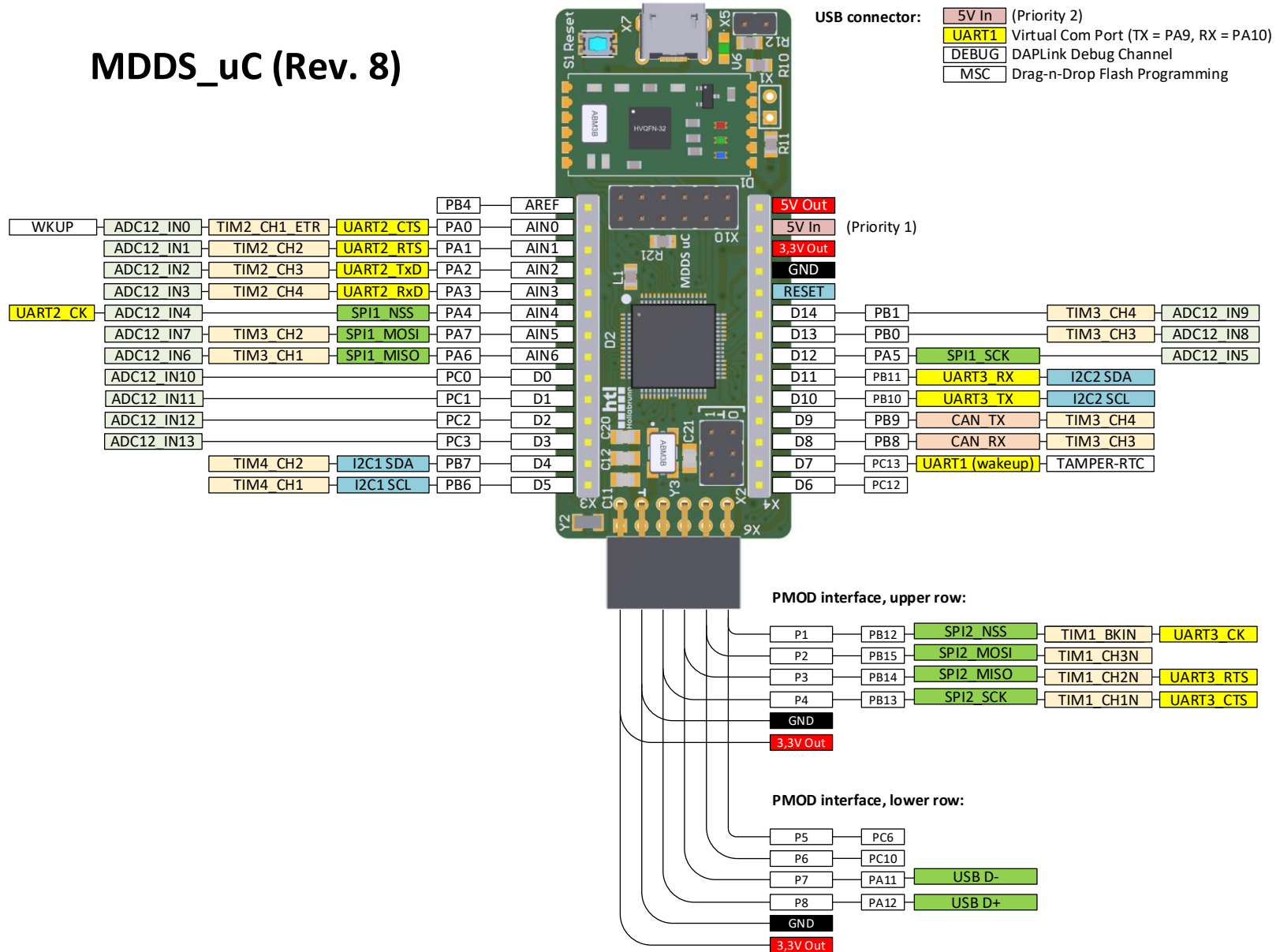


PMOD-Module für Bluetooth 2.0 / 4.0 (BLW)
sowie WiFi wären fertig entwickelt und getestet
(DA „SmartSensorManagement“)



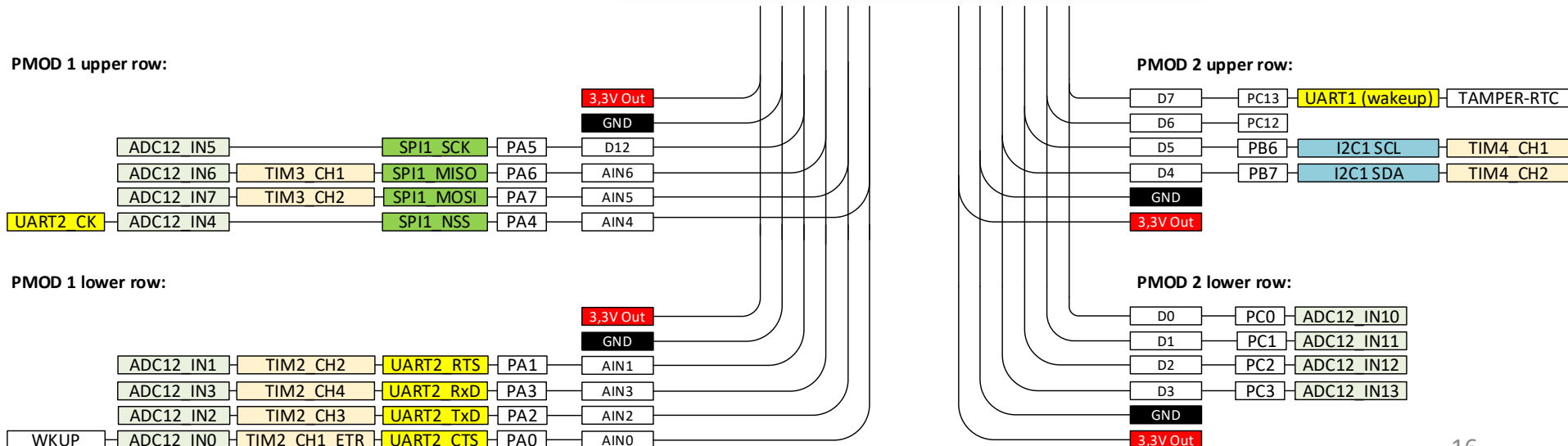
Moderne Doku – zB „Pinnings“ (1/3)

MDDS_uC (Rev. 8)



PMOD 3:

TIM3 CH3	CAN RX	PB8	3,3V Out
I2C2 SDA	UART3_RX	PB11	GND
I2C2 SCL	UART3_TX	PB10	D8
TIM3 CH4	CAN TX	PB9	D11
			D10
			D9



BaseBoard connected to Raspberry Pi B+/...

```
Raspberry UART0 <-> CM3 UART3
Raspberry I2C    <-> CM3 I2C1
Raspberry SPI     <-> CM3 SPI1
```



Fragen?

Vielen Dank!

