

mPCIe WWAN modem break-out

The mPCIe WWAN modem break-out board is a useful utility for evaluating any kind of cellular modem in the mPCIe form-factor.

mPCIe form-factor modems are pretty commonly found for all cellular technologies from classic GSM and CDMA all the way through UMTS, HSPA, LTE and LTE-A.

The mPCIe connector doesn't actually host any PCIe (PCI express) signals, but simply serves as a mechanical interface for the modem signals, such as USB 2.0 high-speed signaling, SIM card signals, power supply, etc.

Key Features

The main features of the board can be described as follows:

- on-board linear power regulator generating the 3.3V supply voltage for the mPCIe modem
- USB 2.0 high-speed signals exposed on USB mini-B connector (miniB-A cable included)
- 2FF (mini-SIM) slot for RUIM/CSIM/SIM/USIM
- all unused mPCIe pins are exposed on a 2.54mm break-out header. This is useful for attaching to non-standard interfaces such as PCM audio busses of modems.
- PERST and W_DISABLE can be configured via jumper
- 3x on-board SMA sockets with U.FL next to them; U.FL to U.FL pigtail cables included. This provides proper strain relief of any antenna connections to the modem.
- Power LED and Modem Status LED

Compatibility

As the mPCIe WWAN modem break-out board adheres to the mPCIe mechanical form factor and standardized pin-out, it should work with any WWAN modem, irrespective of the supplier.

sysmocom has used the mPCIe WWAN modem break-out board with modems from Sierra Wireless, Huawei, Quectel, SIMcom, Ericsson, Qualcomm.

Open Source Hardware

The mPCIe WWAN modem break-out board was created as an OSHW (Open Source Hardware) design.

This means not only schematics are available, but also the full design files including PCB layout. Anyone may create derivative works under the terms of the Creative Commons Attribution Share-Alike (CC-BY-SA) license.

For more information, see

<https://osmocom.org/projects/mpcie-breakout/wiki>

<https://git.osmocom.org/osmo-small-hardware/tree/mpcie-breakout>

Ordering

The mPCIe WWAN modem breakout board is available for direct purchase from the sysmocom webshop:

<http://shop.sysmocom.de/products/minipcie-wwan-modem-usb-break-out-board>

For volume orders, please inquire at sales@sysmocom.de.



Related Products

If you are interested in a carrier board that hosts more than one modem, please check out our **sysmoQMOD** product. It hosts four modems with an on-board USB hub.

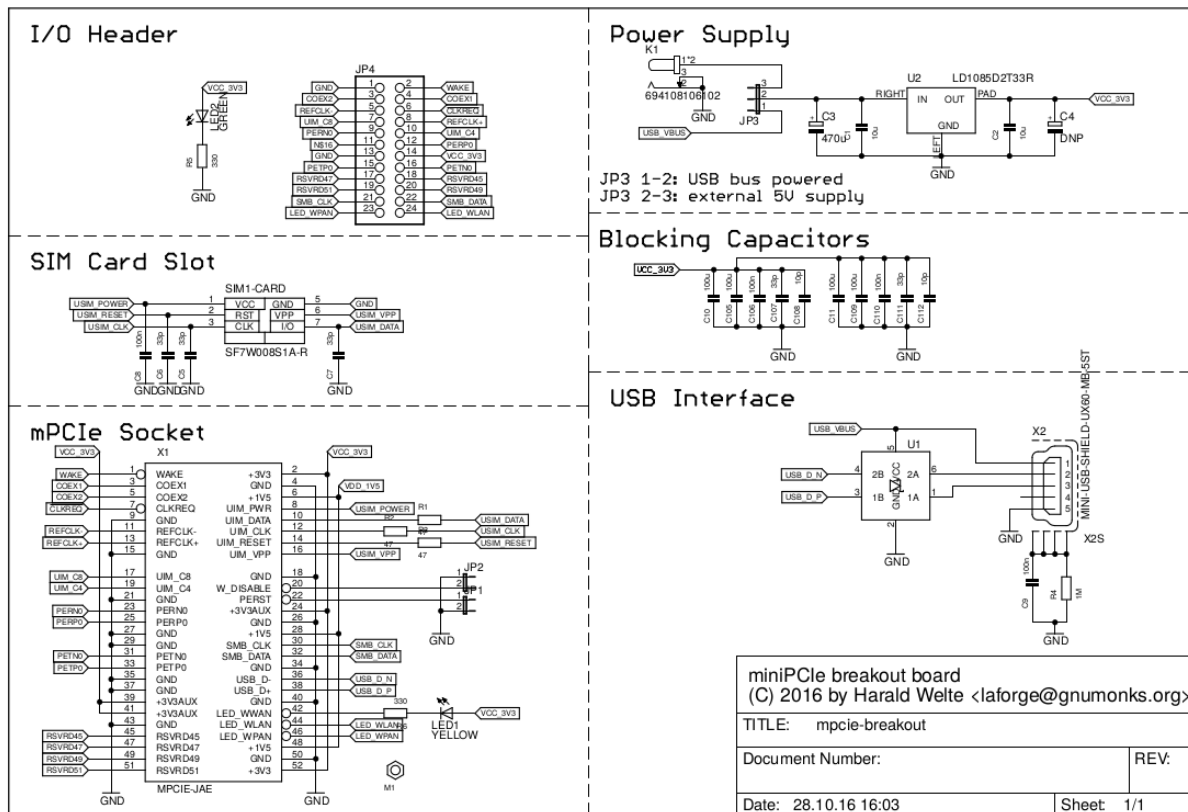
The sysmoQMOD also contains on-board microcontrollers for management as well as SIM card emulation / remote SIM functionality.

mPCIe breakout board data sheet

Mechanical / Electrical Specification

Dimensions of PCB	70 x 70 mm
Mounting	M3 Mounting Holes for spacers/stands
SIM/UICC smart card slot	ETSI/3GPP 2FF form factor
USB port	USB-mini-B
Debug facilities	all unused mPCIe signals exposed on 2.54mm pitch header
LED	1x Power, 1x Modem Status
Input Voltage	5 V DC (typ) on 5.5/2.5mm barrel type, current consumption as per modem

Schematics



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