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MINT

The ultimate Altera Arria V SoC Multi INTerface development board

MINT: The ultimate Altera Arria V SoC Multi INTerface development board

The MINT (Multi INTerface) is an development board with a large number of high-speed interfaces.

It contains an [Altera Arria V SoC](#), a combination of a FPGA and a Dual-core ARM Cortex™-A9 MPCore™, which combines the computing power of a FPGA and the flexibility of software on an ARM-based hard processor system (HPS). All interfaces are accessible from the FPGA or the ARM based HPS.

The MINT has several physical interfaces:

- USB3.0 device port
- USB2.0 OTG host/device port
- Gigabit ethernet
- SFP and QSFP sockets
- FPGA Mezzanine Card (FMC) expansion slot
- UART
- SPI
- I2C
- General purpose I/O
- RS-485



With these interfaces it is an ideal platform for development and ideal as a data acquisition interface for test systems.

Benefits

- Strong Altera ArriaV SOC based platform with a Linux Operating System
- Flexible development platform
- Large number of interfaces present
- Suitable for use in a cleanroom environment (Class 4)

Block diagram

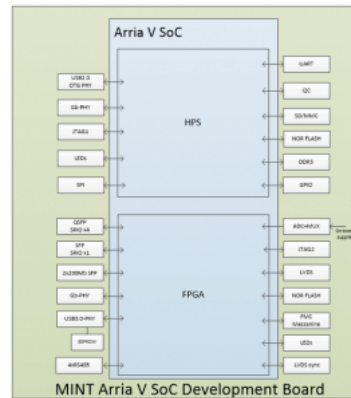
The figure below shows all available interfaces on the MINT with the connection to the FPGA or the ARM based HPS. The ethernet, USB3.0 and USB2.0 OTG, (Q)SFP and RS-485 interfaces connectors are placed at the edge of the such that they are accessible from the outside when it is placed inside a housing. The other

- MINT is a base platform and can be tailored for specific applications
- Easily extendable by means of an industry standard FMC interface
- PC software library available for integration with C/C++ and LabVIEW applications

interfaces are available through connectors on top of the PCB.

Application examples

- Ethernet/USB3.0 to RapidIO bridge
- RapidIO network analysis/configuration tool
- Tool for digital imaging processing
- Custom communication protocol interface/diagnose tool



Block diagram MINT Arria V SoC development board

Design services

3T has extensive knowledge and experience with developing and producing customer specific hardware. The MINT platform has been used to make a number of customer specific products, for example MINT U2S (USB3.0 – Serial RapidIO interface).



Mint U2S (USB – Serial RapidIO)

Technical specifications

Processor/FPGA:	Altera ArriaV 5ASXB5 SOC met FPGA en dual-core ARM Cortex-A9 MPCore
CPU clock frequency:	800 MHz
FPGA logic cells:	462k LE
FPGA memory:	25 MBit ram blocks
Operating System:	ptxdist Linux 4.1.0
FPGA interfaces:	2.5 Gbps QSFP 2.5 Gbps SFP 2x 200Mbit SFP USB3.0 4x RS-485 FMC expansion JTAG Gbit ethernet GPIO LVDS
CPU interfaces:	USB2.0 OTG JTAG Gbit ethernet SPI I2C GPIO UART
CPU memory:	128 MByte NOR flash 2 GByte DDR3 SDRAM SD card slot
Cooling:	Passive (fanless)
Power Supply:	12V DC, 60W
Housing:	Steel
Dimensions:	44 x 221 x 221 mm (hxbxd)

Firmware options

MINT U2S	Firmware for USB to SRIO. SRIO1x, SRIO4x and SRIO2.1. SRIO network discovery
MINT U2G	Firmware for USB to GBSL and HSSL, including LVSL SFP and QSFP transceivers available. ILIAS DMA support <i>Available in H2-2016</i>
MINT U2L	Firmware for USB to LCSL. 4x LCSL links Switching between different modes supported (receive all, normal, transmit all) <i>Available in H1-2017</i>
MINT U2M	Firmware for USB to MCL <i>Available in H2-2017</i>

What to know more ?

Fill in the form below and we will contact you.

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