

Simulyzer-RT System Presentation



Hardware-Version	-
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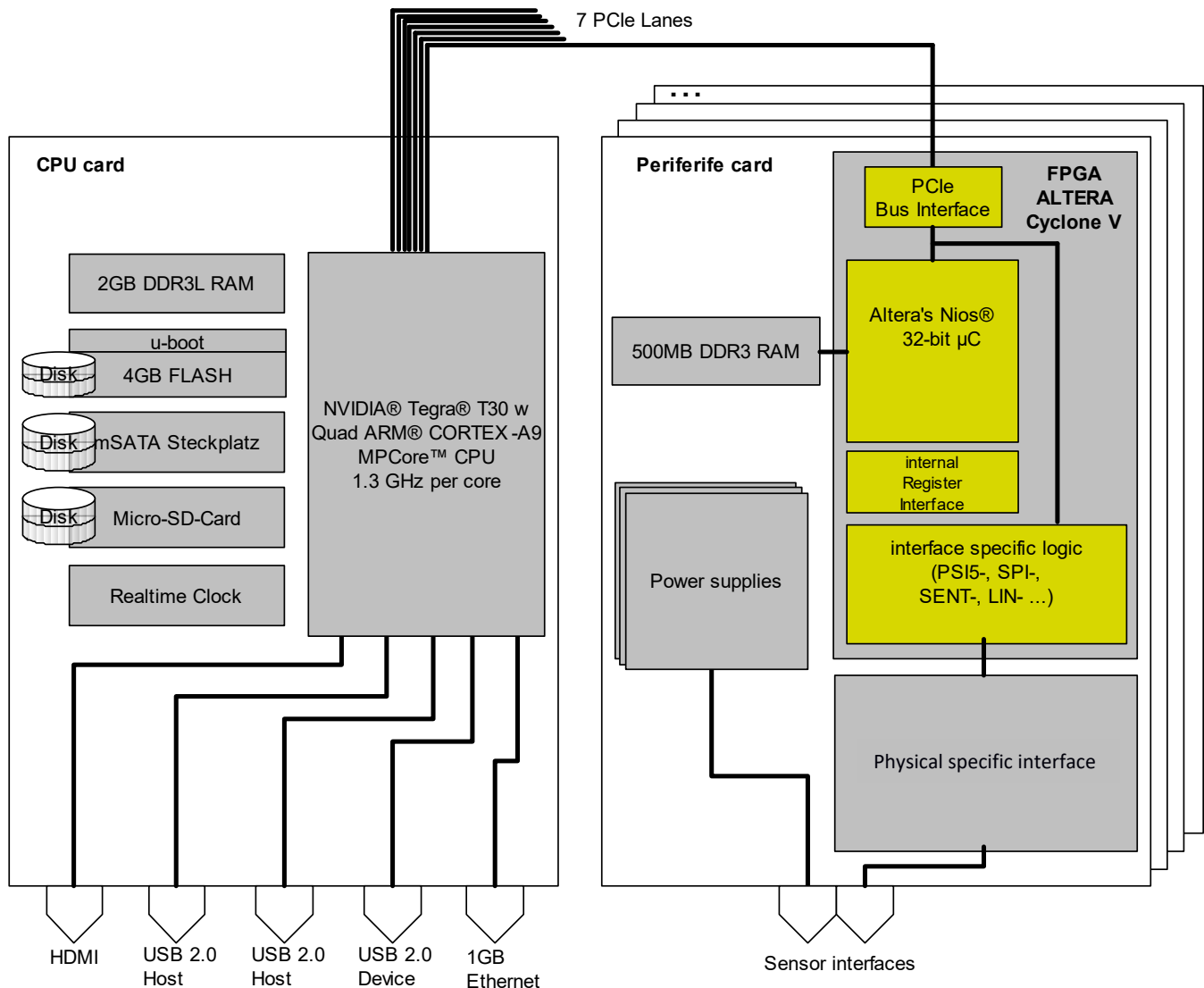
1. General

The Simulyzer RT (Rack Technology) system serves usual sensor bus system of automotive areas with a communication system. The systems is able to communicate as well with many sensor interfaces of external sensors as with external control units (ECUs).

All chassis are designed as 19"-systems. The plug-in cards are designed as europe cards in format 160x100mm (Europa4Format). For internal communication of the cards a PCIe 2.1 bus with maximum data rate of 2.5Gbit/s is implemented. The timestamps of the various peripheral cards will be synchronized.

The communication of the system to higher-level PCs is carried out normally via a 1 GB Ethernet interface. Operating of one or more Simulyzer-RT systems can be done either online from a higher-level PC application or by saving and calling the data locally.

Within the chassis there is always one CPU-1 plug-in card. This card merge the PCIe communication of the several interfaces. The CPU1- plug in card contains a 4 core ARM CPU, working space, SSD storage for file system as well as USB and Ethernet interfaces.



Operating system is Ubuntu Linux.

2. Interface cards

All 19" Chassis types can be plugged with multiple peripheral cards beneath the mandatory CPU-1 card.
The following configurations are possible:

- **DIO-1:**
16 x SPI, with firmware either for SPI master (ECU) or SPI slave (sensor mode)
- **PSI5-ECU-1:**
8 x PSI5 in ECU mode
- **PWR-ANA-1:**
8 x Power-analog to serve the adjustable single supply of 8 sensor with exact measurement of power supply voltage and current. Additionally there are 8x3 multi-use analog inputs available.
- **CAN-1:**
8 x CAN, with firmware either for ECU or sensor mode







In planning stage are the following interface cards

- 8 x SENT in ECU mode
- 8 x SENT in sensor mode
- 8 x PSI5 in sensor mode
- 8 x DS13 in sensor mode

3. Case/Chassis

The following chassis are available:



<p>Compact chassis for 1 CPU and 2 peripheral cards as an extreme compact implementation. It can be used as a smaller table top unit or for application with restricted space area. The 12 VDC power supply has to be served externally.</p>		
<p>Standard chassis for 1 CPU and up to 7 peripheral card at 19", 4HE case including power supply 90-264 VAC</p>		
<p>Special cases are customisable</p>		

4. Application range

Typical application ranges are:

- Measurement of sensor characteristic
- Calibration of sensors
- Permanent operation tests with sensors
- EMC measurement of sensors
- Band-end programming of sensors
- Simulation of sensor data to test ECUs and ECU algorithms; also with different interface types.

5. Attachments

<p>Measurement adapter for DIO-1 card to monitor the SPI signal.</p>	
<p>External 12V power supply unit for the Comact Chassis.</p>	
<p>Readymade cable for the DIO-1 card deliverable in various length. All 48 signals via HF-line with $Z = 50\Omega$</p>	
<p>Console cable for CPU-1 card. Offers a serial Linux-console-interface via USB connector.</p>	