

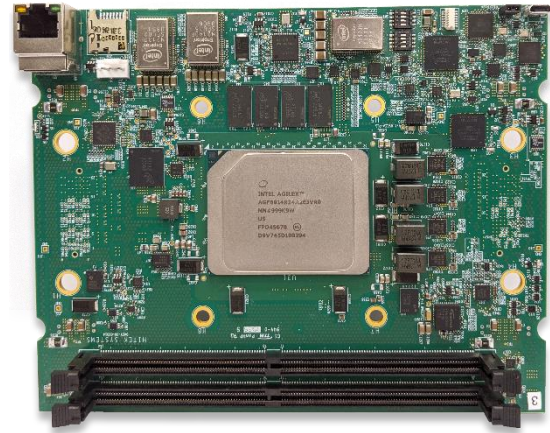


# Intel Agilex System on Module (SOM)

## Product Brief (HTK-HPCSOM-AGF)

### Features

- Intel 10nm Agilex AG014 FPGA with P-Tile and E-Tile transceivers
- 16 transceivers with up to 28.9Gbps NRZ or 8 up to 57.8Gbps PAM4
- P-Tile based x8 Gen4 PCIe interface
- Compact size: 6.85" x 5.45"
- Complete Linux FPGA support package available
- Rich suite of hardware-verified Ethernet IP cores available
- Breakout carrier boards available for development



### Applications

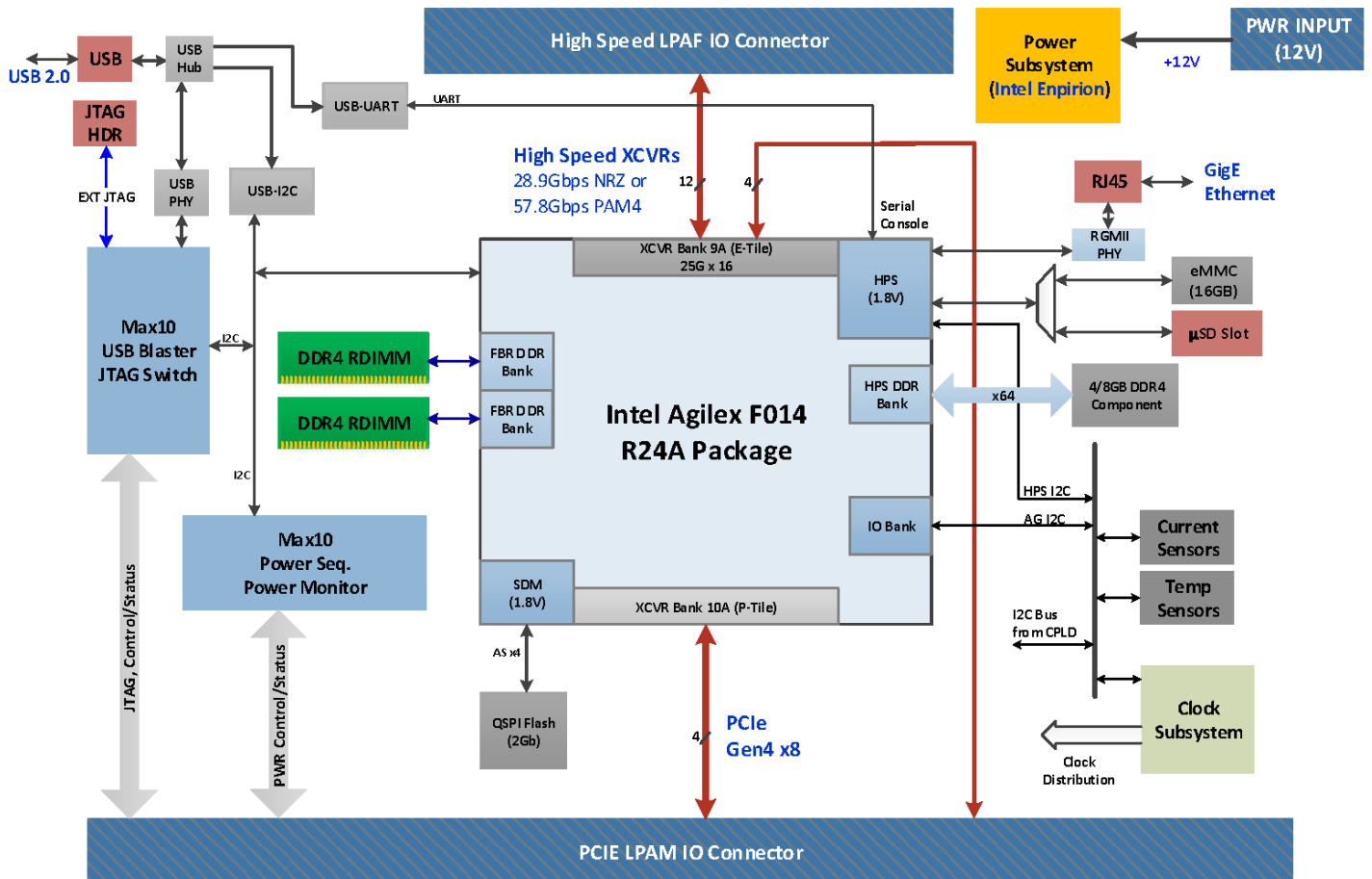
- Agilex performance evaluation
- Multi-mode HPC platforms
- OEM and white label devices and platforms

### Target Markets

- High performance computing
- 5G wireless technology development
- Signal processing / image processing
- 200G/100G/50G/40G/25G/10G networked signal processing devices and platforms

### Highly integrated, Scalable, Feature Rich, HPC centric development platform

Intel 10nm Agilex FPGA based SOM module for High Performance Computing (HPC) and communication centric designs with high speed transceivers (up to 57.8 Gbps PAM4) and x8 Gen4 PCIe lanes breakout to high performance mezzanine connectors. Integrated quad-core 64-bit A53 ARM processor complex with network, control and storage peripherals.



## Mezzanine connectivity

- PCIe: x8 Gen4/Gen3
- 16 transceivers with up to 28 .9Gbps NRZ or 8 transceivers with 57.8Gbps PAM-4

## Power Rails

- Intel Enpirion power tree
- 160A capacity VID core supply using Intel E8401 controller and ET6160 power stages

## On board HPS interfaces

- 4GB DDR4 SDRAM
- 10/100/1000 Base T Ethernet
- 16GB onboard eMMC
- μSD card slot

## Onboard FPGA fabric interfaces

- 2 dual rank 72-bit RDIMM memory slots
- 2GB micron SDM QSPI flash

## Onboard debug support

- USB-Blaster for CPLD and FPGA JTAG access
- USB-I2C bridge for register access to the CPLD, FPGA and power modules
- USB-UART bridge for console access to the HPS
- Temperature and voltage sensors for board telemetry

## IP cores available

- 10G Extreme Low latency IP Core
- 25G Ultra Low latency IP Core
- 40G Ethernet IP Core
- 100G Ethernet IP Core
- 200G Ethernet IP Core
- RS-FEC (544, 514) and (528,514) IP Cores
- UDP/IP Offload Engine (UOE) IP core
- Configurable Control/Data plane packet filters
- Peripheral IP Cores (e.g. I2C, MDIO, SPI etc.)

## Links

<https://www.mantaro.com/products/fpga-framework-solutions.htm>

<https://www.mantaro.com/products/fpga-ip-cores.htm>

**Low cost, quick turnaround customizations available!**

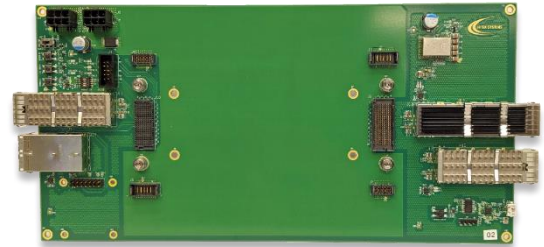


**Mantaro PDS**

**Phone:** +1-301-528-2244

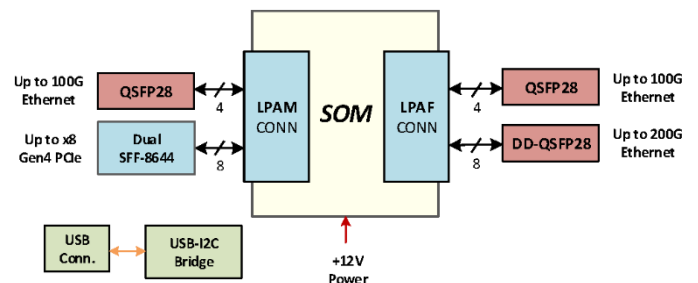
**Email:** [sales@mantaro.com](mailto:sales@mantaro.com)

## Optional high-speed networking breakout carrier card



- x8 Gen4/Gen3 PCIe over two SFF 8644 connectors
- One DD-QSFP with 8 lanes up to 28.9Gbps NRZ or 4 lanes up to 57.8Gbps PAM-4
- Two QSFP's with 4 lanes up to 28.9Gbps NRZ
- 12V power from industry standard ATX "PCIe" connectors.
- Custom breakout carrier modules can target a wide range of applications depending on user application requirements

## SOM HIGH SPEED BREAKOUT CARRIER



## Product Ordering Codes

**HPCSOM-AGF-01-01:** AGF014 ES, w/HPS -3 core speed. Includes two 8GB RDIMM and basic carrier board for power.

**HPCSOM-AGF-01-02:** AGF014 ES, w/HPS -3 core speed. Includes two 8GB RDIMM and breakout carrier board for power and networking.

Contact Sales for other options



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