



Intel Agilex Embedded SOM (eSOM)

Product Brief (HTK-eSOM-aa)

Features

- Two 400-pin connectors
- Primary Connector (J1)
 - F-Tile based Serdes interfaces, 16 NRZ(32Gbps) or 12 PAM4 (58.125Gbps) transceivers
 - HPS peripheral interfaces
 - Board Module Controller (BMC) interface
 - Power input to the module
- Secondary Connector (J2)
 - F-Tile based Serdes interface, 16 NRZ (32Gbps) or 12 PAM4 (58.125Gbps) transceivers
 - Fabric side true-differential (LVDS), 1.2V differential, 1.2V single ended GPIO for control, interface and clock management

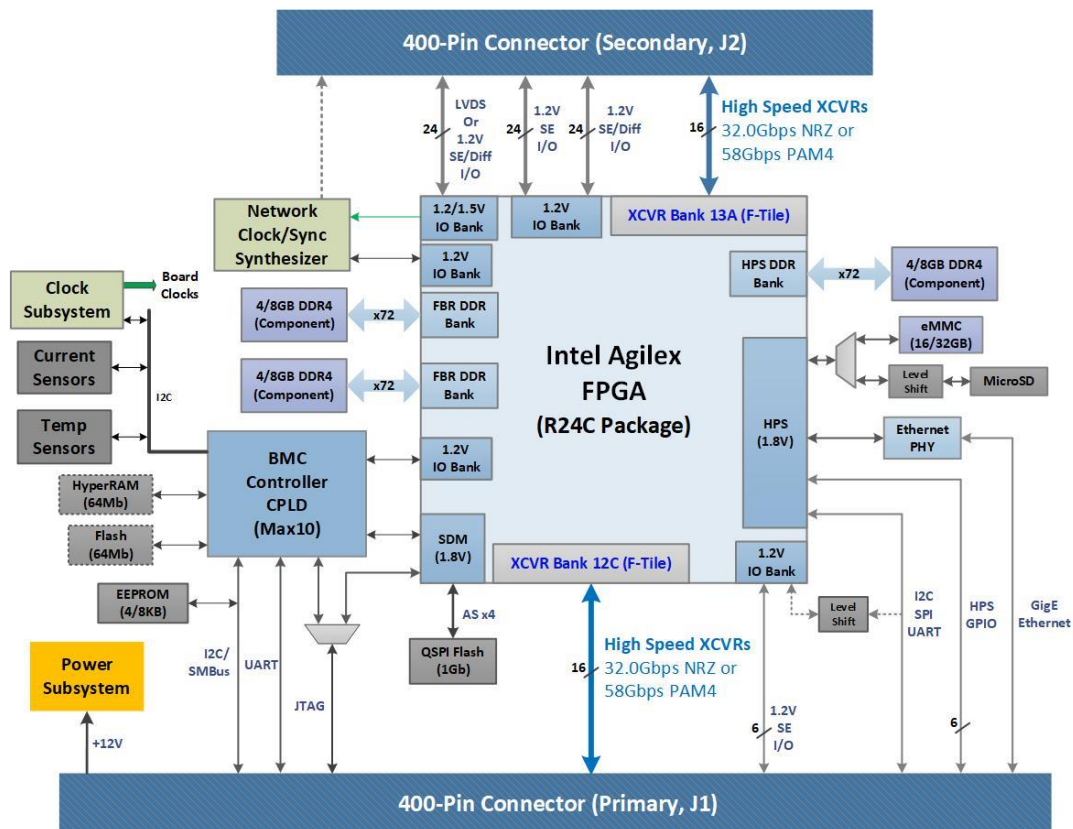


Ready-to-deploy SOM for high performance FPGA enabled embedded and Edge designs

Intel 10nm Agilex FPGA based eSOM module for embedded and edge processing, communication and networking centric designs with high-speed transceivers (up to 57.8 Gbps PAM4) and x16 Gen4 PCIe lanes breakout to high performance mezzanine connectors. Integrated quad-core 64-bit A53 ARM processor complex with network, control and storage peripherals.

Target Markets

- 5G wireless nodes
- Signal processing/image processing
- 200G/100G/50G/40G/25G/10G networked signal processing devices and platforms



Carrier module connections

- Primary Connector (J1)
 - F-Tile based Serdes interface, 16 NRZ (32Gbps) or 12 PAM4 (58.125Gbps) transceivers
 - HPS Interfaces: Ethernet (1000BASE-T/MDI), USB 2.0 host, UART, I2C and SPI
 - BMC interfaces: UART, I2C, board control I/O
 - JTAG interface
 - Single +12V power input to the module
- Secondary Connector (J2)
 - F-Tile based Serdes interface, 16 NRZ (32Gbps) or 12 PAM4 (58.125Gbps) transceivers
 - Fabric side true-differential (LVDS), 1.2V differential, 1.2V single ended GPIO for control, interface and clock management

Power Rails and cooling

- Single +12V power input from carrier module
- High performance power tree
- Up to 120A of core power rail

HPS interfaces

- 4/8GB DDR4 72-bit chip-down SDRAM
- 16/32GB onboard eMMC and µSD debug slot
- 1000Base-T/MDI Ethernet, USB 2.0 host interface SPI and I2C interfaces mapped to Primary connector

FPGA fabric interfaces

- 2 banks of 4/8GB 72-bit chip-down SDRAM
- 2GB micron SDM QSPI flash for FPGA image
- I2C, SPI and UART interfaces to primary connector for carrier module

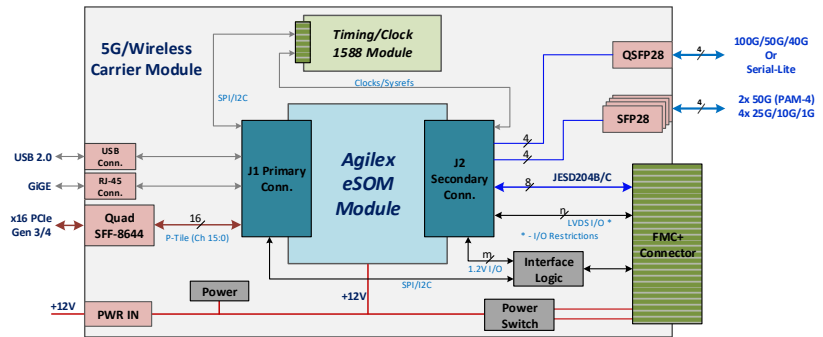
Debug support

- JTAG interface from Carrier module
- UART console access to the HPS and BMC
- Extensive voltage, current and temperature telemetry support

IP cores available

- Ethernet, FEC and Interface IPs

FMC+ 5G/RAN Development Carrier Module for JESD204B/C RF transceivers



- Up to x16 Gen4 PCIe target over four SFF-8644 connectors
- FMC+ mezzanine connector with 8 E-Tile Serdes
- Control and I/O conditioning for interface to high performance FMC/FMC+ RF transceiver development boards
- Timing mezzanine module interface for JESD and IEEE 1588 clock, sync and timing signal generation
- One QSFP with 4 lanes up to 28.9Gbps NRZ or 2 lanes up to 57.8Gbps PAM-4
- 4 SFP+ with 28.9Gbps NRZ. 2 connectors with 57.8Gbps PAM-4 support
- 12V power from standard ATX PCIe connector

Low cost, quick turnaround customizations available!

Links

<https://hiteksys.com/fpga-and-soc-development-boards/intel/agilix-esom>

Product Ordering Codes

HTK-eSOM-01: AGF014 24A package with 1P+1E tiles, integrated HPS, -2 core speed, 3 banks of 8GB DDR4 and 16GB eMMC

For sales or more information:



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