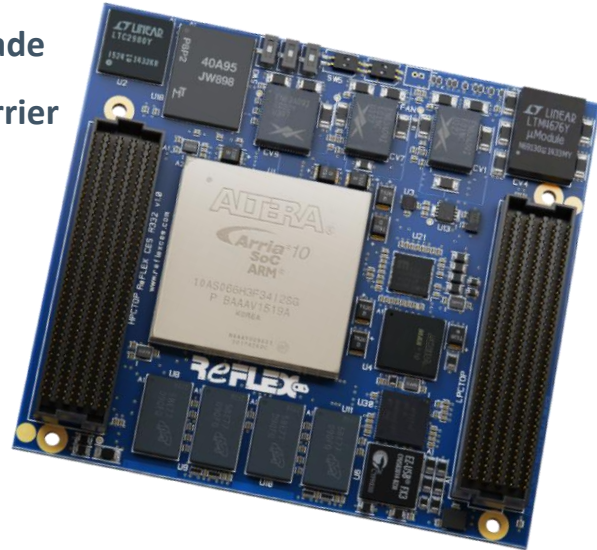




# Arria 10 SoC SoM

System-on-Module featuring

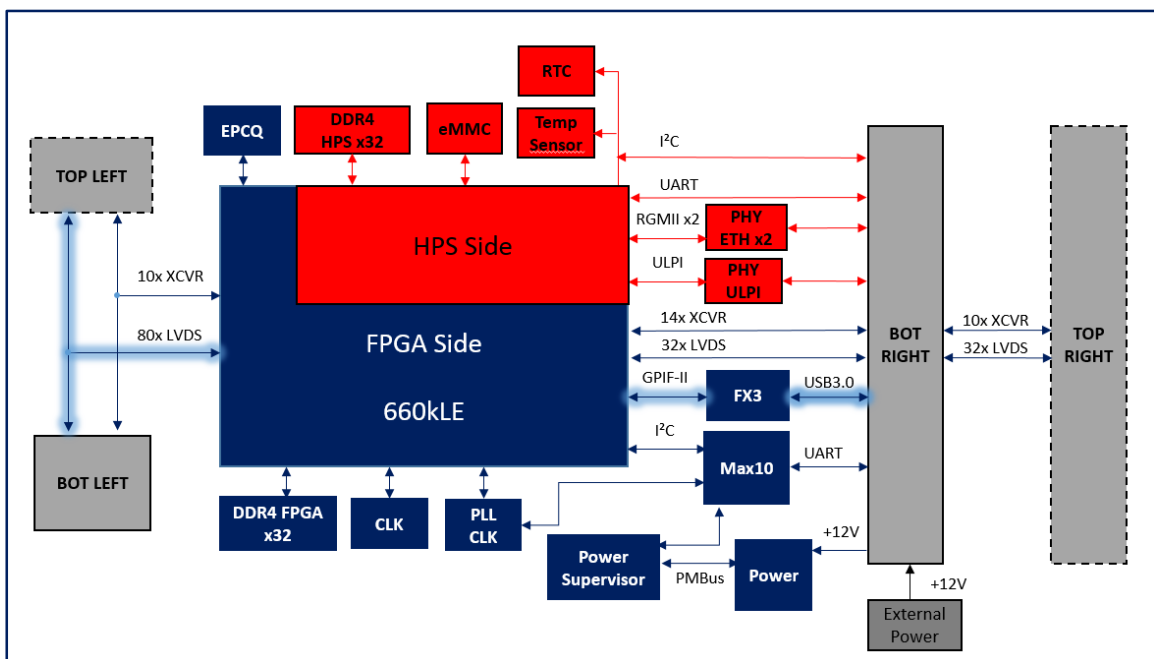
- Highly integrated Altera Arria10 SoC Module
- 270 or 660 KLE, Commercial or Industrial Temp grade
- Dual mode as a System-on-module or FMC carrier board
- 2x Gbit Ethernet HPS, USB 2.0 OTG, USB 3.0
- DDR4 HPS and FPGA
- eMMC Flash Memory
- PCIe Gen3 x8
- Dual FMC Capability



## Target markets:

Automotive  
Industrial  
Video Broadcast  
Machine and Intelligent Vision

Military  
Medical  
Test & Measurement



Contact :



## Full Specifications

Arria 10 SoC FPGA	<ul style="list-style-type: none"><li>• <b>Dual ARM® Cortex™-A9 MPCore™ processor-based hard processor system (HPS)</b></li><li>• <b>270 KLE or 660 KLE – F34 package (1152 pins) – Commercial or Industrial temp grade</b></li></ul>
2x DDR4 SDRAM up to 2400MT/s	<ul style="list-style-type: none"><li>• 32-bit wide bank for FPGA (2GB with Lite and Indus or 4GB with Turbo version)</li><li>• 32-bit wide bank for HPS (2GB with Lite and Indus or 4GB with Turbo version)</li></ul>
System-on-Module usage (Bottom connectors only)	<ul style="list-style-type: none"><li>• 1x FMC LPC bottom connector with HPS signals and 14 transceivers (Bottom-Right)</li><li>• 1x FMC HPC or LPC bottom connector depending on FPGA density (Bottom-Left):<ul style="list-style-type: none"><li>▪ LPC bottom connector for 270 KLE density with 10 transceivers</li><li>▪ HPC bottom connector for 660 KLE density with 10 transceivers</li></ul></li></ul>
Carrier board usage (Bottom and Top connectors)	<ul style="list-style-type: none"><li>• In addition to the System-on-Module usage,</li><li>• 1x FMC LPC Top connector with 10 transceivers, 1.8V VITA 57.1 (Top-Right)</li><li>• 1x FMC HPC or LPC Top connector with 10 transceivers, 1.8V VITA 57.1 (Top-Left):<ul style="list-style-type: none"><li>▪ LPC Top connector for 270 KLE density</li><li>▪ HPC Top connector for 660 KLE density</li></ul></li></ul>
LVDS, LVCMOS & XCVR	<ul style="list-style-type: none"><li>• 24 transceivers speed of 11.3Gbps, most optimized use</li><li>• 80 LVDS bidirectional (or 160 Single ended) on FMC HPC connector (Top-Left/Bot-Left)</li><li>• 32 LVDS bidirectional (or 64 Single ended) on FMC LPC connector (Top-Right/Bot-Right)</li></ul>
USB 3.0 Device USB 2.0 Device/Host	<ul style="list-style-type: none"><li>• USB 3.0 device connectivity using Cypress FX3 super speed controller (660 KLE version)</li><li>• USB OTG support connected to the HPS</li></ul>
System Controller	<ul style="list-style-type: none"><li>• Max10 CPLD for system control</li></ul>
2x Gigabit Ethernet	<ul style="list-style-type: none"><li>• 10/100/1000 Base-T Ethernet interfaces connected to the HPS</li></ul>
Serial interfaces	<ul style="list-style-type: none"><li>• I<sup>2</sup>C, UART connected to the HPS. UART connected to System controller</li></ul>
Soft programming /eMMC FPGA programming	<ul style="list-style-type: none"><li>• Store U-boot, Kernel and RootFS (8GB on 270 KLE and 32GB on 660 KLE)</li><li>• AS configuration supported with EPCQL512, remote upgrade and failsafe</li></ul>
Power Management	<ul style="list-style-type: none"><li>• PMBus support / cooling solution provided</li><li>• With heat spreader and active heatsink</li></ul>
Module dimensions Deliverable	<ul style="list-style-type: none"><li>• 86mm x 95mm (3,4 x 3,8 inches)</li><li>• VHDL test designs</li><li>• Mechanical files : 3D DWF/STEP models and 2D drawing (upon request)</li><li>• Guidelines for baseboard development (upon request)</li><li>• Module informations (power, decoupling, signal features, S-parameters) (upon request)</li></ul>

## Ordering information

Version	Part number	Comments
▪ <b>Module "Lite" version</b> (Commercial grade)	<b>RXCA10S027PF34-SOM00L</b>	<b>270 KLE, speed grade -2, Commercial temp grade</b> , Two banks <b>DDR4</b> / by 32bit / <b>4GBytes</b> / @1866MT/s, eMMC 8GBytes, Bottom connectors
▪ <b>Module "Turbo" version</b> (Commercial grade)	<b>RXCA10S066PF34-SOM00T</b>	<b>660 KLE, speed grade -1, Commercial temp grade</b> , Two banks <b>DDR4</b> / by 32bit / <b>8GBytes</b> / <b>@2400MT/s</b> , <b>eMMC 32GBytes</b> , USB3.0, Bottom & Top connectors
▪ <b>Module "Indus" version</b> (Industrial grade)	<b>RXCA10S066PF34-SOM00I</b>	660 KLE, speed grade -1, <b>Industrial temp grade</b> , Two banks <b>DDR4</b> / by 32bit / <b>4GBytes</b> / @2400MT/s, eMMC 32Gbytes, USB3.0, Bottom & Top connectors

## Development Kit

- For the Development Kit, ask information about the **Achilles Instant-DevKit** (flyer available)
- The Kit is using the "Turbo" version

ACHILLES



# Mouser Electronics

Authorized Distributor

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ReFLEX CES:

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