

Astoria Processor Family

FEATURES:

- Linux-capable SiFive U74-MC Core Complex
 - Quad 64-bit RISC-V U7 64-bit core
 - Single 64-bit RISC-V S7 64-bit core
 - Instruction, Level – 1, and Level – 2 cache
- Internal SRAM with ECC (2MB)
- Memory Controller (MRAM/SRAM)
- 10/100/1000 Mb/s Ethernet (GMII)
- MDIO Ethernet
- UART (x2), SPI (x6), user configurable GPIO
- JTAG
- Commercial Space Grade
- -55 to 125 C operating temperature range
- Ceramic and plastic 896-pin package options



ENABLEMENT:

- Development kit and evaluation samples
- Software reference guide with drivers
- Board support package

APPLICATIONS:

- Space-borne systems
- Data acquisition and I/O
- High-assurance compute
- Secure communications
- Wideband data systems

PRODUCT DESCRIPTION:

Trusted Semiconductor Solutions' Astoria Radiation Hardened RISC-V Multi-Core Processors for aerospace, defense and commercial markets. The Astoria family of processors are built around SiFive's U74-MC architecture utilizing 64-bit processing for high reliability, high performance, and reliable operation in harsh environments.

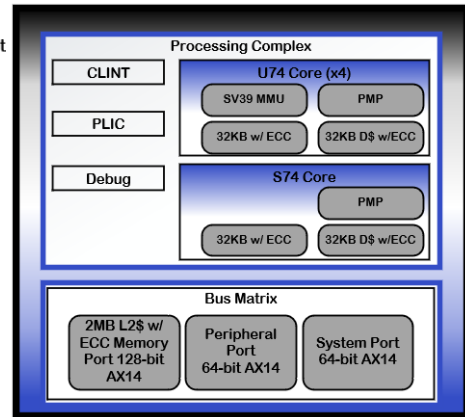
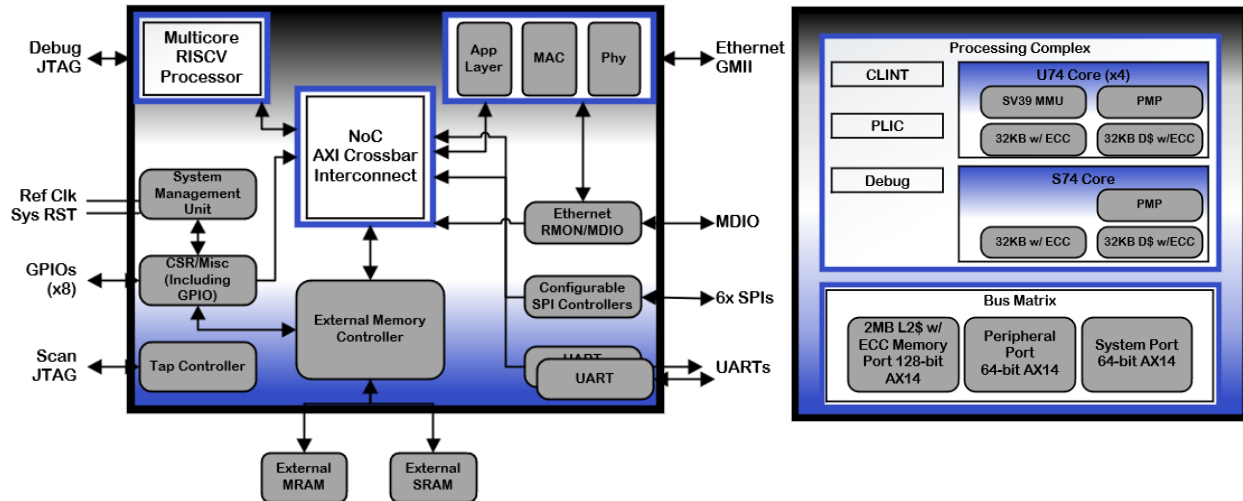
Astoria TS101A equips next-generation systems with the most advanced, radiation hardened, general purpose microprocessor. Processing performance exceeds 20K

CoreMark with a 1GHz clock and typical operating power of 2W. The Astoria processor family offers state-of-the-art technology including 4x 64-bit RISC-V cores for processing and 1 core for monitoring, 4MB of internal SRAM, an external MRAM/SRAM memory controller, 10/100/1000 Mb/s Ethernet, and a variety of common interfaces for communication, control, and programming.

Commercial, space-grade, and QML devices are available in a range of packages.



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PART NO.	PACKAGE	GRADE
TS101A-BGA	896-pin Plastic Ball Grid Array 31x31mm, 1mm pitch	Commercial, Commercial Space Low, Commercial Space High
TS101A-CCG	896-pin Ceramic Column Grid Array 31x31mm, 1mm pitch	Commercial Space Low, Commercial Space High, QML
TS101A-CBG	896-pin Ceramic Ball Grid Array 31x31mm, 1mm pitch	Commercial, Commercial Space Low, Commercial Space High
TS101A-CLG	896-pin Ceramic Land Grid Array 31x31mm, 1mm pitch	Commercial, Commercial Space Low, Commercial Space High

Product Grade	Total Ionizing Dose	Testing
Commercial	N/A	JEDEC
Commercial Space Low	< 100kRad	MIL-PRF-38535 Class V & Y or QML
Commercial Space High	100k - 300kRad	MIL-PRF-38535 Class V & Y or QML

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