

## REGULAR EXPRESSION CO-PROCESSOR FOR ARM®



Helios RXPA is silicon IP targeted for ARM® based System on Chip (SoC) solutions. It is designed for high throughput low latency applications that require regular expression (RegEx) pattern matching. Helios RXPA is an ARM® co-processor for next generation cloud and network appliances. It is a unique, fully scalable, hardware-accelerated solution for Security Analytics Acceleration (SAA) and content processing. The solution can be tuned for the desired combination of throughput, rule depth and complexity.

### KEY FEATURES.....

- ❖ Scalable bandwidth from 5Gb/s to 200Gb/s
- ❖ Supports up to 1 million rules using external DDR3/4
- ❖ Supports POSIX/PCRE compatible regular expressions
- ❖ Comprehensive SDK including:
  - RXP Compiler
  - Application Programming Interface (API)
  - Reference applications
  - Utilities
- ❖ Interfaces: AXI or Native
- ❖ Run-time partial ruleset update

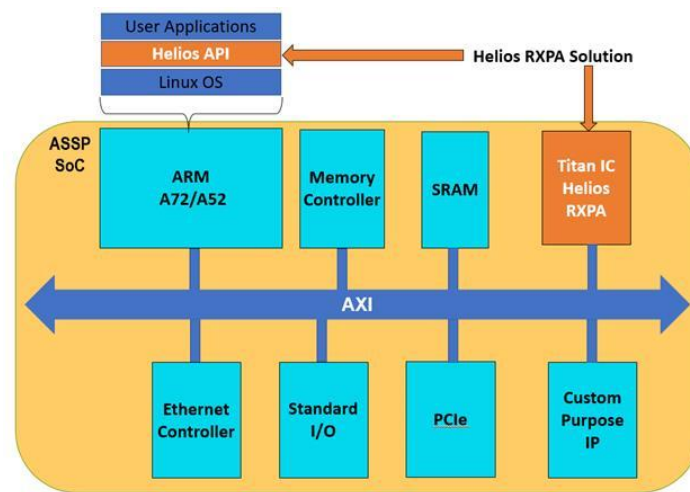
### KEY BENEFITS.....

- ❖ RXPA combined with ARM® processor offers significant new capabilities on custom ASIC
- ❖ Easily integrated using ARM® AXI interface
- ❖ Complex and comprehensive pattern matching at line speed
- ❖ High throughput performance per Watt
- ❖ Supplied as a silicon IP block, reducing engineering effort, costs and time-to market
- ❖ Highly scalable solution with excellent performance versus area tradeoffs

## APPLICATIONS.....

- ❖ Security Analytics Acceleration (SAA)
- ❖ Next Generation Firewall (NGFW)
- ❖ Intrusion Prevention System (IPS)
- ❖ Distributed Denial of Service (DDoS) Mitigation
- ❖ Data Loss Prevention (DLP)
- ❖ SmartNIC
- ❖ Network Monitoring
- ❖ Advanced auditing of user/application security policies
- ❖ Rule based content processing for spam, URLs and adware
- ❖ Financial data mining – parsing of streamed financial feeds
- ❖ Log File Analytics

## BLOCK DIAGRAM.....



## CAPABILITIES & RESOURCES.....

The Helios RXPA can be configured for capabilities per instantiation in bandwidths ranging from 5Gb/s to 200Gb/s on 28 and 16nm technology.

	Helios RXPA Resource Requirements		
	For 28nm technology at a core clock rate of 800 MHz		
Bandwidth	25Gb/s	50Gb/s	100Gb/s
Rules Capacity (up to)	1 million	1 million	1 million
Embedded SRAM	8 Mbits	16 Mbits	32 Mbits
Logic gates	0.3 million	0.6 million	1.2 million
Total Silicon Area	5 mm <sup>2</sup> (2 clusters)	10 mm <sup>2</sup> (4 clusters)	20 mm <sup>2</sup> (8 clusters)
Power	~1 W	~2 W	~4 W
External DDR	32-bit DDR3/4 (2GB)	64-bit DDR3/4 (2GB)	2x64-bit DDR3/4 (2GB)

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