

## Features

- ETSI compliant SNOW 3G and Kasumi cores
- High performance and low area
- Portable to any technology library
- Easy integration into any SoC design
- Microprocessor bus interfaces available

## Benefits

- Full-width data ports maximize performance, minimize latency
- Fast delivery for accelerated time to profit

## Applications

- 3G Telephony



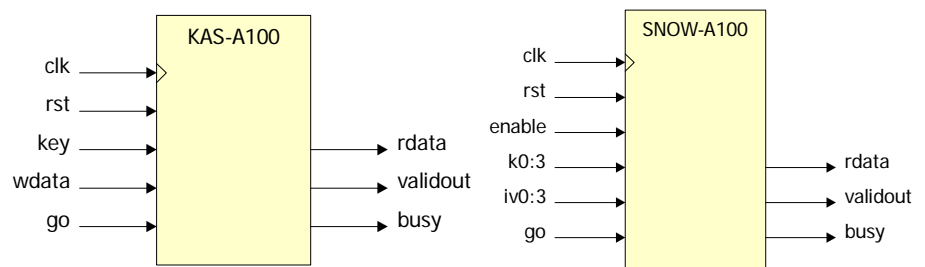
## 3GPP Ciphers

### *Kasumi and SNOW 3G Ciphers for Telephony Applications*

**Athena delivers the 3GPP ciphers Kasumi and SNOW 3G as semiconductor intellectual property (IP) cores.** Athena's Kasumi and SNOW 3G cores for 3G telephony complement Athena's leading-edge TeraFire® public key (PK) cryptography accelerators. Whether your application demands 3GPP cipher performance or the power savings of a dedicated core, Athena's Kasumi and SNOW 3G cores are the ideal solution.

## Product Description

The KAS-A100 and SNOW-A100, shown in Figure 1, feature dedicated, full-width data input, output, and key input ports for maximum throughput and minimum latency. Standardized input and output handshaking simplifies system integration. The KAS-A100 and SNOW-A100 cores may be delivered with an optional microprocessor bus interface to simplify SoC integration. The performance and area characteristics of the KAS-A100 and SNOW-A100 cores are summarized in Table 1.



**Figure 1: Interface Block Diagram of KAS-A100 and SNOW-A100**

## Available Deliverables

- Simulation model (Verilog or VHDL)
- Synthesizable RTL (Verilog or VHDL) and scripts
- Targeted, timing closed netlist
- Verification suite
- Documentation
- Support



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**Table 1: 3GPP Cipher Family and Performance Specifications**

Model	Performance <sup>a</sup>	Area
KAS-A100	3500 Mbps	9 K-gates
SNOW-A100	16 Gbps	14 K-gates
TAI-A100	AHB bus interface for Athena TeraFire cores	
TXI-A100	AXI bus interface for Athena TeraFire cores	

a. Performance at 500 MHz.

## Bus Interfaces

Athena's dedicated cryptography solutions are designed for stand-alone operation and provide full-width support to enable maximum performance and flexibility. AHB, AXI, and other bus interfaces are also available.

## TeraFire Cryptography Application Library (CAL)

The TeraFire CAL is a portable, ANSI C library of cryptographic software implementations and drivers for TeraFire hardware accelerators. The TeraFire CAL has been implemented and tested on multiple platforms, including leading SoC microprocessors from ARM. Athena's sophisticated configuration management system enables rapid configuration of the TeraFire CAL for your mix of hardware accelerator and software implementation requirements.

## Designed for Easy Integration

Athena has over a decade of experience in delivering first-time physical design success. Athena has become a premier provider of semiconductor IP by always delivering quality. To ensure ease of integration, Athena goes the distance - by synthesizing *our* IP into *your* target library, in *your* process, with *your* constraints, and delivering a completed core, ready for place and route. Athena standard deliverables include everything you need to integrate our core into your design: netlists, simulation models, test vectors, support, and documentation.

## About The Athena Group, Inc.

Based in Gainesville, Florida, Athena innovates breakthrough technologies that achieve the optimum balance of power, performance, and silicon area in a wide range of applications such as wireless, satellite, and secure communications. Athena provides patented semiconductor intellectual property (IP) solutions, with products ranging from the market-leading TeraFire® security cores, to Atomic DSP™ cores, and Atomic SDR™ software defined radio cores.

Athena was founded in 1986 and is privately held.