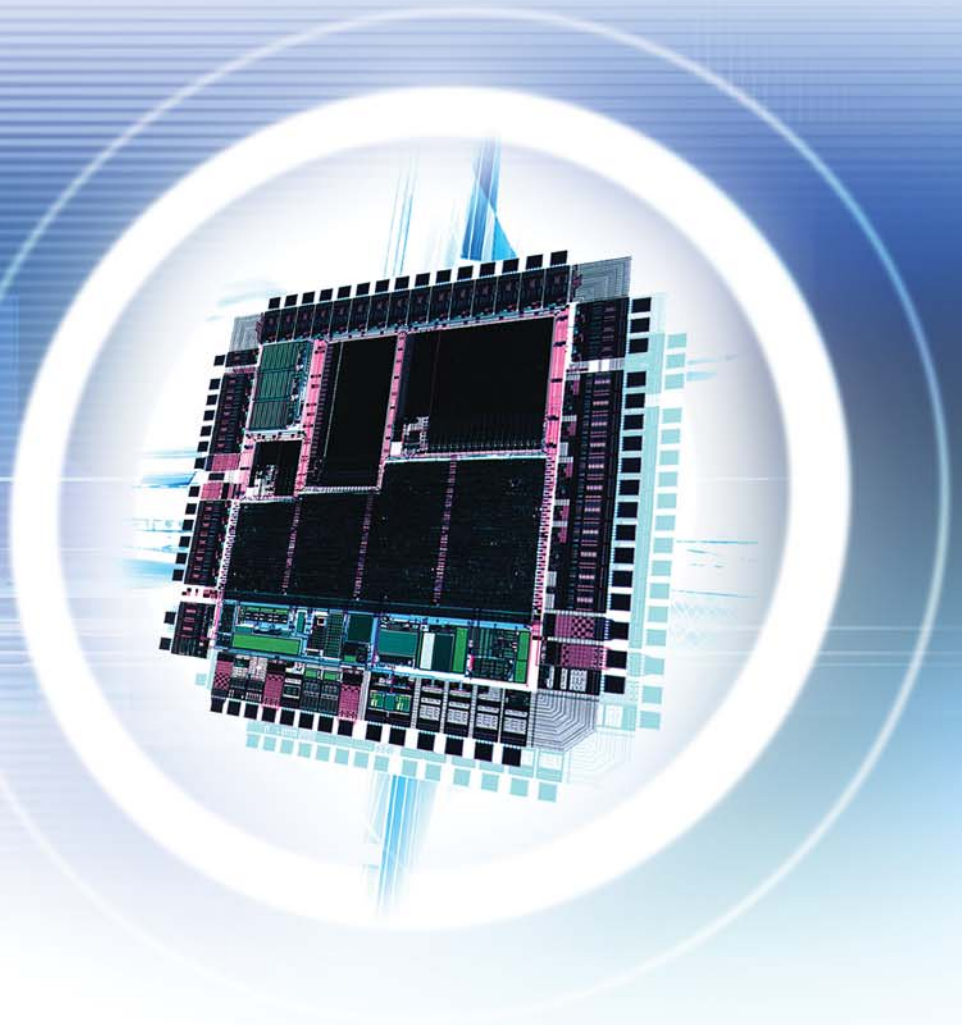


*System on Chip performance:  
low energy, low cost, low risk*



# Powerful *business solutions*

Electronic products in today's competitive markets demand ever-higher performance combined with energy efficiency and low cost. Our XAP processor cores for System on Chip designs enable you to meet these requirements and more. Using XAP can accelerate time to market, decrease project risk and deliver amazing value throughout your product life cycle.

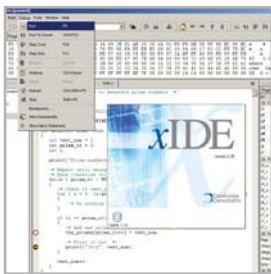
XAP processor cores minimise program and data memory size, reducing silicon cost and energy use, making XAP the right choice for high volume. Combined with flexible licensing terms, these benefits make XAP processors a compelling solution for any semiconductor business.

Applications for XAP processors include wireless communications (e.g. Bluetooth, ZigBee, GPS, RFID, NFC), low power sensors and controllers, smart meters, medical devices, secure trusted systems and battery powered products. They are also ideal for incorporating within IP blocks as a slave processor. XAP is already proven in over a billion chip shipments worldwide.

The IP is delivered in soft Verilog format, giving you control over simulation and synthesis to optimise die area and energy consumption. XAP Verilog also targets FPGAs for verification.



## Software development and debug tools



You can't afford to get it wrong when re-spins cost a million dollars and you might miss your market opportunity. So we support XAP processors with comprehensive development and debug tools that ensure you get your product right first time.

The xIDE integrated development environment facilitates the complete design cycle, first in software simulation, then in hardware emulation and finally with silicon. xIDE interfaces with XAP's high code density GCC C compiler and Binutils assembler. xIDE can be customised and delivered under licence to your application developers.

All XAP processors include a SIF debug core with a simple four-pin interface to debug pods, enabling powerful non-invasive debugging facilities and high speed data capture.

## Backup when you need it



Our depth of engineering resource ensures we can offer support when you need it. Starting with an architecture study, we can help optimise your design and then we're on-hand for technical support throughout your development programme.

We also offer multi-disciplinary design services, including industrial design, mechanical engineering, electronics, software and ASIC design. Our competence in wireless systems, sensor physics, radio frequency, mixed-signal, signal processing and control engineering enables us to deliver world-class products.

Our client portfolio includes semiconductor companies ranging from major integrated device manufacturers through to fabless companies and start-ups.

# XAP<sup>®</sup> processor cores

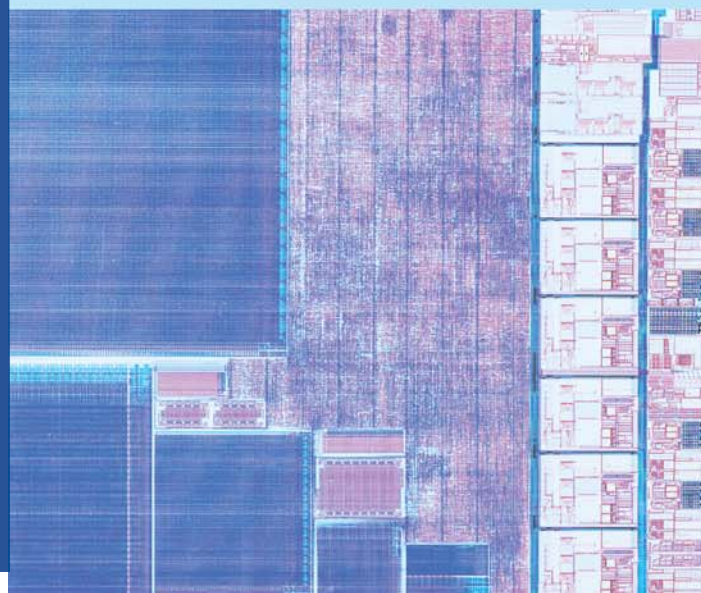
Our XAP processors are a family of 16-bit and 16/32-bit Von Neumann RISC cores offering high performance and advanced computing functions at the lowest possible cost and energy consumption.

XAP4 and XAP5 apply the latest design strategies for small processors embedded within ASIC, ASSP, FPGA or microcontroller chips. They are supported with excellent development tools and real-time operating systems. XAP processors can provide licensees with a significant cost reduction and energy saving over 8-bit or 32-bit processors.

Memory required	Processor	Architecture	Address	Registers			Gates
				GP	Addr	Brk	
0 - 64 kB	<b>XAP4</b>	16-bit Von Neumann	16-bit	8 x 16	4 x 16	2 x 16	12k
0 - 16 MB	<b>XAP5</b>	16/32-bit Von Neumann	24-bit	8 x 16	4 x 24	4 x 24	18k

The XAP architecture supports modern applications with its highly efficient use of memory and security features. Programs can execute directly from non-volatile Flash memory, which can be safely updated in the field. Security and reliability come from XAP's privileged software modes combined with powerful memory management and access control.

Download XAP programmers' manuals and free trial versions of xIDE for selected processors from [www.CambridgeConsultants.com/xap](http://www.CambridgeConsultants.com/xap)



## Cambridge Consultants

Working for some of the world's most successful companies for almost 50 years, Cambridge Consultants has given its clients competitive advantage through its excellence in applying technology and total product design.

Our expertise ranges from semiconductors, wireless communications, radar systems, advanced sensors and control systems through to automotive electronics, medical products and consumer goods. The key to our success is our team of over 300 engineers, designers, scientists and technicians, providing clients with a responsive, global resource to meet the challenges of advanced product development.

We have a significant portfolio of intellectual property and project-proven development tools. We understand how to design exciting new products and how to maximise your opportunity by accelerating time to market.



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