

Inside a System on Chip.

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This illustrated book takes you on a journey through the operation of a System on Chip (SoC).

We start with an introduction to the parts of the SoC.

The ARM 11 CPU is shown in full color.

The SoC Ports are described. The paths data flows through the SoC are shown in colorful illustrations.

Inside a System on Chip describes the purpose and use of the GPU (Graphics Processing Unit).

The book shows the journey data makes from the CPU in Read/Write cycles to local and SDIO memory.

You'll find full color graphics throughout the book.

This book will be useful to students and anyone else wishing to learn how data moves around the various parts of a SoC.

A colorful resource for beginners to computer science.

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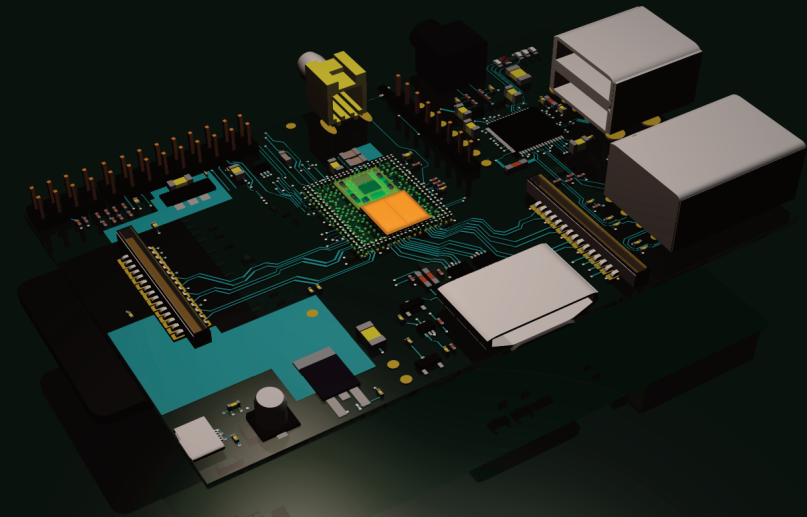
Chapter 1

Introduction to
the System on
Chip (SoC).

This book shows the main processes of the System on Chip (SoC) in block schematic form.

Data flow in the SoC is shown in red.

The SoC in this book is one that is used in the Raspberry Pi.



The Raspberry Pi is a hugely popular small computer. In this book we use the Raspberry Pi as an example of where data moves from the SoC.

CPU

Graphics
Processing Unit

System on Chip unit
(SoC)

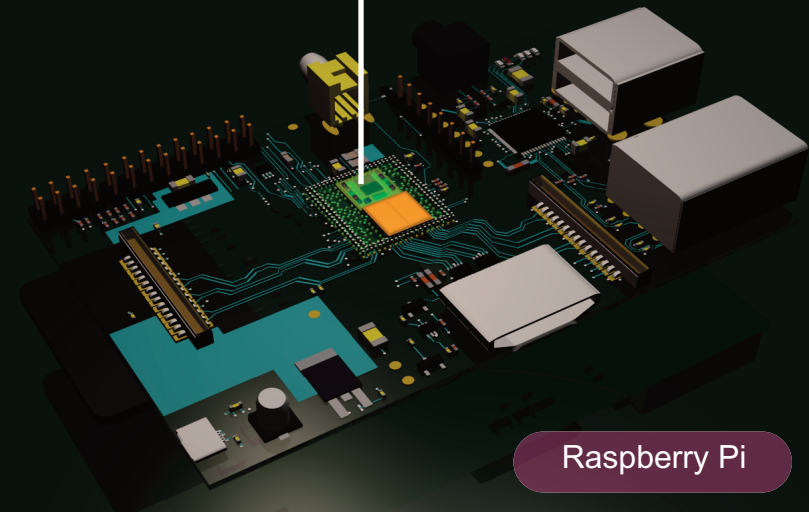
Memory

The System on Chip unit (SoC) allows data to move much faster than from a normal cpu.

This is due to parts like the graphics processing unit being on the same piece of silicon as the cpu.

The main chips in the middle of the circuit board are the System on Chip unit (SoC) and a memory chip that sits above the SoC on its own small circuit board.

System on Chip unit (SoC)



Raspberry Pi