# Experts Outreach for
8051 Microcontroller

Over the years, project development has advanced over leaps and bounds. Of course, it's good to keep up with the times, but in some situations, radical changes might not be so beneficial. We're here to talk about the staple microcontroller, the 8051. Many students nowadays are choosing much more advanced microcontrollers because the 8051 is apparently not advanced enough. It's time to bust that myth, and show how the 8051 microcontroller is still one of the best. In today's market we can find many more advanced microcontrollers than the 8051 microcontroller like PIC, ARM, and Arduino so on. So what makes 8051 microcontroller stand out among all these controllers?
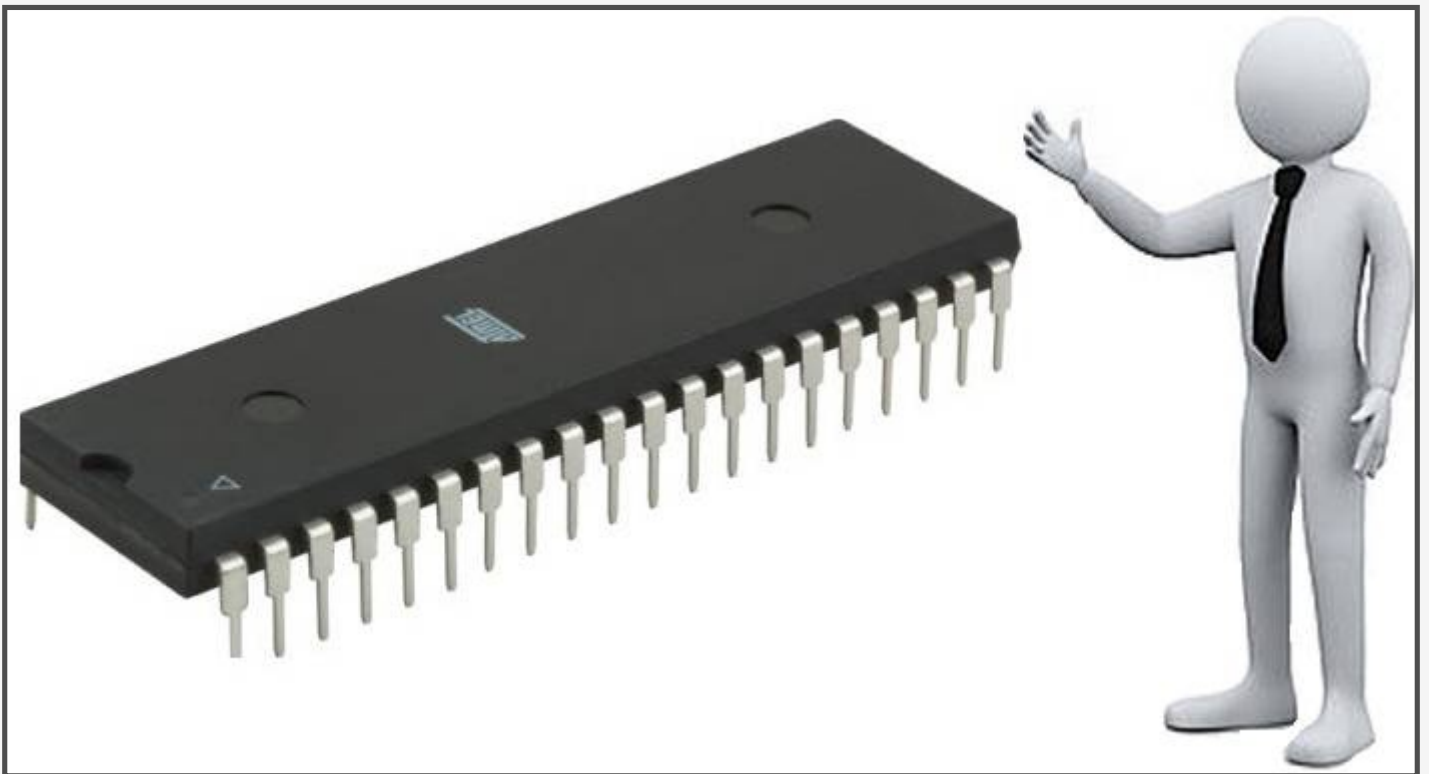
Before we even begin development on advanced platforms, we have to learn root or basic microcontrollers, of which 8051 is one. Anyone who has extensive knowledge on the 8051 microcontroller will be able to grasp advanced concepts easily. We've gathered some opinions about 8051 microcontrollers which will perhaps remove some of the misconceptions surrounding the stalwart. We hope that some of these expert reviews change your mind about the 8051 microcontroller.

Expert Advice on 8051 use:

UC Patnaik, MTech (Electronics) & BTech (Electrical)

Chief Technology Officer at Edgefx Technologies Pvt Ltd

Developing the program for Microcontrollers of 8051 family such as AT89s51, AT89s52 requires assembler or compiler which is used to convert ASM/C/embedded C/ Basic/Pascal code to machine language in (.hex) HEX code for which Keil IDE is recommended for beginners to use.

Issak.N, PG Diploma in Industrial Automation

Content writer at Edgefx Technologies Pvt Ltd

The 8051 microcontroller being a basic microcontroller has their greater significance in engineering projects and also used in several applications like automobiles, medical equipments, electronic gadgets, etc.
Since availability of features like RAM, ROM, Serial ports, timers, interrupts these controllers are the best to start doing their projects.

Sunanda.T, M.tech in VLSI

Content writer at Edgefx Technologies Pvt Ltd

8051 Microcontroller is a versatile chip which is of low cost and efficient controller and we canfind it on several electronic gadgets. Due to simple programming and understanding these are preferable for beginners who want to start their projects.

Ch. Sampath, M.tech in VLSI

Content writer at Edgefx Technologies Pvt Ltd

8051 microcontroller is very popular in embedded systems. The programming of microcontroller is not much complicated compared to other controllers so these are preferred for hobbyists and professional

Rajesh saxenaRajesh saxena

CEO, Jauhari Infotech, Allahabad, Uttar Pradesh

The Intel 8051 is a very popular general purpose microcontroller widely used for small scale embedded systems. The 8051 is an 8-bit microcontroller with 8 bit data bus and 16-bit address bus. Many vendors such as Intel, Texas, Atmel produce this chip.

K. Srinivasulu, M.TECH, MISTE HOD, ECE DEPT

NARSIMHA REDDY ENGG COLLEGE, MAISAMMAGUDA

8085 microprocessor is a device or a group of devices. It is a heart of the micro controller. All the electronic devices are working on the 8085 microprocessor.

Sanjeev Kumar Agarwal

Gurukul (Sc. inst.), Bikaner (Rajasthan)

It contains 4K Bytes ROM, 128 Bytes of on chip data RAM, 32 bidirectional or individually addressable I/O lines, two 16-bit timer/counters, on chip clock oscillator. It is a powerful microcontroller which provides a highly-flexible and cost-effective solution to many embedded control applications. Low cost and easy programming process of this microcontroller becomes it widely popular nowadays.

Janardhan Rao Bitra

Asst. Professor CVR College of Engineering Janardhan Rao Bitra Hyderabad Andhra Pradesh

It can perform as an 8-bit 8051, has 24-bit external address space which is 16-bit wide segmented and 32-bit ALU with mostly 8/16/32-bit wide data instructions (also Boolean processor with special registers/memory) and a large CISC instruction set, 40 8/16/32-bit registers with 8 8-bit registers in 4 times fast switching memory banks (maximum 512 addressable 8-bit special registers).

It features extended instructions – see also the programmer's guide and later variants with higher performance, also available as intellectual property (IP).

It is 3-stage pipelined. The MCS-251 family was also discontinued by Intel, but is widely available in binary compatible and partly enhanced variants from many manufacturers.

Venkat krishna

Asst. Professor CVR College of Engineering Hyderabad Andhra Pradesh

lToday, 8051s are still available as discrete parts, but they are mostly used as silicon intellectual property cores. It is available in high-level language source code (VHDL or Verilog) or FPGA netlist forms, these cores are typically integrated within embedded systems, this is used in products ranging from USB flash drives to washing machines to complex wireless communication systems on a chip.

Designers use 8051 silicon IP cores, because of the smaller size, and lower power, compared to 32 bit processors like ARM M series, MIPS and BA22. Modern 8051 cores are faster than earlier packaged versions.

Design improvements have increased 8051 performance while retaining compatibility with the original MCS 51 instruction set. The original Intel 8051 ran at 12 clock cycles per machine cycle, and most instructions executed in one or two machine cycles.

A typical maximum clock frequency of 12 MHz meant these old 8051s could execute one million single-cycle instructions, or 500,000 two-cycle instructions, per second.

In contrast, enhanced 8051 silicon IP cores now run at one clock cycle per machine cycle, and have clock frequencies of up to 450 MHz. That means an 8051-compatible processor can now execute 450 million instructions per second.

Anand Bansode

(B.E.Electronics) Mumbai DealerAnand Bansode

Microcontroller 8051 provides more flexibility than other IC also using this microcontroller we develop thousands of Projects. Also it is very easy to Programming. Microcontroller's use increased rapidly. Now these are used in almost every electronic equipments like Washing Machines, Mobile Phones and Microwave Oven which causes rapid growth of their use

Mahesh Vishwakarma

Bhopal2

Microcontroller 8051 may be called computer on chip since it has basic features of microprocessor with internal ROM, RAM, Parallel and serial ports within single chip. Or we can say microprocessor with memory and ports is called as microcontroller.

Rahul Gondane

Chief Operating Officer, Pyrite Technologies Pvt. Ltd.
B.Tech ECE 4th year student,
Geethanjali College of Engineering and Technology

The 8051 microcontroller is what everything started from. Whether you need to create advanced projects or simple ones, the 8051 still finds some use. Even though it was introduced way back in 1980, it still finds a lot of application in education and simple products.