

Theoretic/Practical course on BASCOM 8051 Programming.
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EXAMPLES of Programs with TIO 16 (6) .

Many of the not young people certainly remind a popular television series, filmed in the years **1982/1986**, with main actor **David Hasselhoff** and a car as the protagonist, named **Supercar** (original title ***Knight Rider***). The car was confidentially known as **KITT** that is the acronym of ***Knight Industries Two Thousand***. For the fans it must be underlined that the car derived from the original models of the **Pontiac TransAm**.

Many people probably had the possibility to see the numerous television and certainly of the various features, the most interesting one was the suggestive light effect produced by the frontal red **Scanner**, of **KITT**.



KITT the protagonist, not human, of SUPERCAR

Its slow alternative sliding in both directions, has interested many spectators and so we decided to inspire to this effect in order to reproduce it on the **TIO 16 LEDs**.

By starting from this functionality it has been developed a program that, taking advantage of all the knowledge acquired up to now on digital outputs management, tries to reproduce the **Drop** effect of the **KITT** scanner.

The effect has been obtained by driving a contiguous group of **4 LED**. You can exercise yourself, by changing the sliding time in the program or changing the number of light points, with a more pleasant target results, from Your point of view.



Detail of SUPERCAR scanner

It is important underline that there are many factors that attends the effect reliability. For example, you can't forget that the light intensity produced by the **LEDs** has a not linear trend in confront of the passed current. Moreover even the eye perception of the light intensity increase is not linear during a supply current rising.

All this underlines as a visual effect, described in a very simple and immediate manner, must be managed with a complex algorithm based on arguments that must be known and applied by the user.

I hope that Your interest is sufficiently high to start the work. I let You test the program, sure that we suggest an optimum idea for following reflections.

Example.034. Alternative Shift of the 16 LED. Drop Effect.

Added Definitions:

None

Added Declarations:

None

Added Instructions:

None

Added Operators:

None

Example program **34** of **BASCOM 8051** course.

The program performs an alternative **shift** of one **LED** turned on with a **Drop** effect, by using the **16** LED available on **TIO 16** board that is connected to **I/O** connectors of **GMM TST3**. In other words it moves a turned on **LED** with a following wake, before from left to right and then from right to left, in a continuous cycle (**SUPERCAR Scanner** effect).

The program describe its functionalities on a serial console provided of monitor and keyboard with a fixed physical protocol at **19.200 Baud, 8 Bit x chr, 1 Stop bit, No Parity**.

This console can be another system capable to support a serial **RS 232** communication. In order to simplify the use it can be used a **PC** provided of one **COMx** line, that execute a terminal emulation program as **HYPERTERMINAL** or the homonym modality provided by **BASCOM 8051** (see **IDE** Configuration).

The program works only when the **GMM 5115** is mounted on **Z2** socket of **GMM TST3!!**

Inside the program the terms that identify the used signals refers to electric diagram and technical manual of **GMM TST3!!**