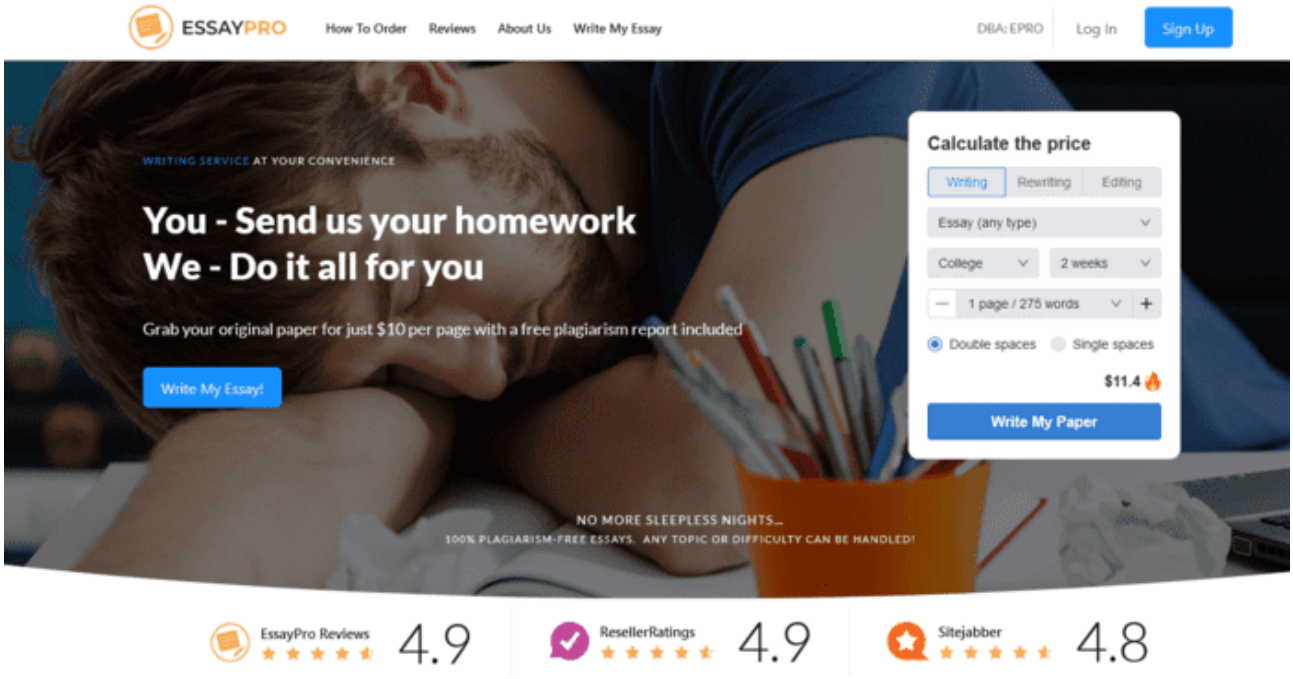
Radio Frequency Barcodes



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History

Traditionally, companies have used standard paper barcodes in conjunction with information databases to track inventory and monitor product movement. By tracking incoming and outgoing product, barcodes form an easy means of maximizing the overall efficiency of a business. Barcodes do however have certain limitations. Barcode scanning is dependent on the orientation of the barcode with the horizontal laser scanner and therefore the overall speed of the process becomes a function of the speed at which the individual can orient and then scan. This minor limitation may be a soon be resolved as Radio-Frequency Identification (RFID) technology maximizes the potential for efficient and quick product management in the form of electronic barcodes. Radio-Frequency Identification is not a new technology but has become realistic through recent advancements.

Key Players

A small handful of companies inside and outside the United States are developing this new technology. A company called RF-ID.Com specializes in electronic barcodes and transponders for the management of everything from automobiles to cattle, beer kegs, and packages. While another, RF Ideas Inc. has teamed up with such companies as Motorola and Microsoft to manufacture a form of proximity activated identification or AIR ID as a form of added security for Windows NT systems. These companies and others have been testing RF-ID technology throughout Europe for quite some time in product test runs.

Technology

Different companies offer a variety of products as solutions to different customer needs. "The core of any RF-ID system is the ‘Tag’ or ‘Transponder’ which can be attached to or embedded within objects." (1) RF-ID’s come in all shapes and sizes, from little glass transponder capsules to being placed in between layers of paper or plastic to form inexpensive stickers for disposable use.

But all of the Radio-Frequency Identification technology relies on the same principle, wireless communication between a RF-ID or transponder and the RF Module of a reader. "The data collected from an RF-ID can either be sent directly to a host computer through standard interfaces, or it can be stored in a portable reader and later uploaded to the computer for data processing." (1) When a transponder comes within range of a reader it uses energy collected from a RF wave that is stored in a capacitor to broadcast its own answering message which is received by the reader. (1)

Many of the new transponders feature read/write updating so that information can be read and uploaded on the fly.