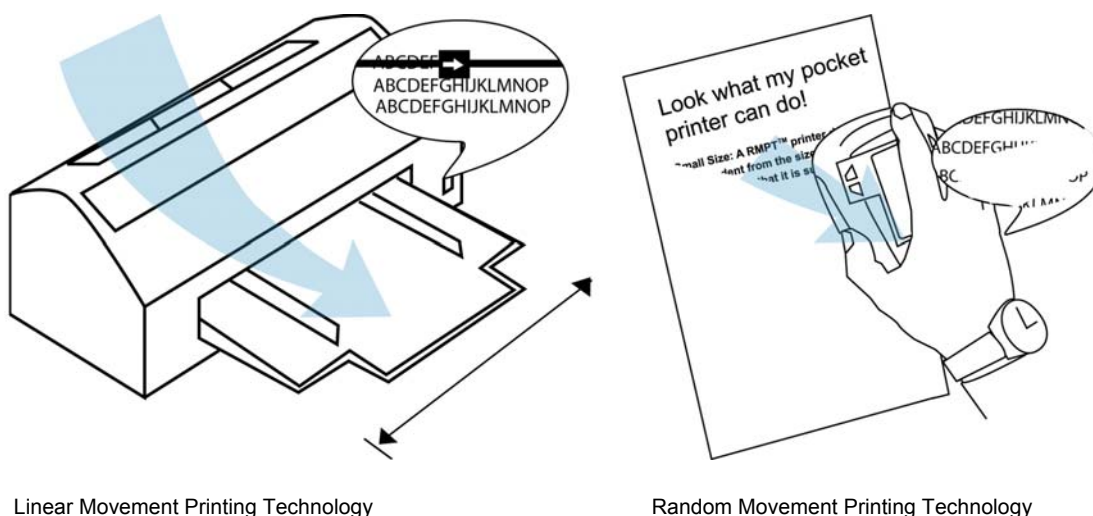


The RMPT™ white paper

Abstract

This document describes the world unique Random Movement Printing Technology (RMPT™) developed by PrintDreams.

RMPT™ is a patented world unique technology, which allows for the first time ever to manufacture printer products whose size and mechanical design are no longer limited by the width, thickness and format of the media to be printed. RMPT™ allows manufacturing of extremely compact printer products that are operated by random hand sweeps over the surface to be printed. RMPT™ printer products do not have any moving mechanical parts (see comparison with traditional Linear Movement Printer Technology on drawing below) and can be made compatible with any PC, PDA or mobile phone using a wireless link.



RMPT™ can be used for wide area of product applications, but mainly within handheld printing products because those are the type of products that benefit most of the competitive advantages of RMPT™.

RMPT is not supposed to compete with the established printing technologies (LMPT) but rather to complement and open new market segments within the printing industry.

Technical background

Up until today printouts have been dependent of the size of the printer, Small printers – Small printouts, large printers – Large printouts. This is due to the fact that these devices print by a method of linear printing that PrintDreams has named as Linear Movement Printing Technology (LMPT), which means that a motor-based feeding mechanism pulls the paper accurately through the device while a printer unit travels back and forth horizontally filling up the printout line by line. All modern printer devices are one way or another based on LMPT and all have paper feeding mechanisms.

The development of LMPT has resulted in printer devices that generate printouts with very high print quality and speed. Their drawback is instead that they have difficulties to print on both, thick or thin and large or small paper without being mechanical redesigned. It means that they are strongly limited by the width and thickness of the print media. In other words, there are no printers today that can fit into a shirt pocket and at the same time can be able to print in an i.e. letter-size sheet.

Other disadvantages of LMPT printers are that their electrical motors aimed to drive their complicated mechanisms, require a lot of electrical power. For battery driven devices this is a great minus because it results in limited operation time. Mechanical parts are also the ones responsible for generating noise during operation and stand for the most expensive and assembly intensive part of the manufacturing process of common printer devices.

The RMPT™ Product's Design

PrintDreams RMPT™ technology approaches printing technology in a totally new way by incorporating the ink and paper together using advanced real-time algorithms instead of the traditional paper feeding mechanism.

The printout appears when you sweep the printer over the print media that could be almost any type of flat surface.

PrintDreams has gathered all the components required to provide complete and reliable RMPT™ functionality, into one single hassle-free module called the RMPT™ Printer Controller Module. It consists of a RMPT™ Controller ASIC and an Optical Sensor Sub-module (OSS) to be integrated in the final RMPT™ printer product. The basic functions of the RMPT™ Printer Controller Module is to receive the print data (bitmap format), navigate on the print media and execute print commands to the print head.

The mechanical design and orientation of the Print Head Module provides easy replaceable ink cartridges. The optical sensor module is placed underneath the printer, which navigates using surface microstructure as reference.

The most basic RMPT™ device could consist of only three elements:

Basic components of a RMPT™ device



Optical sensor
Sub-module
*PrintDreams**

Application Specific Integrated
Circuit -ASIC
*PrintDreams**

Print head module
*OEM customer**

** Responsible provider*

Communication

The printout is commenced via a download of the document to the printer. The RMPT™ printer will communicate via an on-board set of standard communication interfaces. The OEM customer is free to use these interfaces to communicate with external components of the product. The communication interfaces are accessible from an OEM customer SW. Examples of communication are IrDA, USB and Bluetooth.

Advantages of a RMPT™ -based printer product

Extremely compact size and lightweight, although having print capacity on print media of practically any size and thickness since you rub out the printout freely over the flat surface.

The major advantages of RMPT™ printer products are:

- Small size & light weight
- Prints directly on any size and practically on any media (parcel, envelope, calendar, book etc)
- Long operating time, with silent operation and low energy consumption, due to the lack of motors and mechanical parts
- Cost-effective manufacturing

A wireless RMPT™ device with low weight and small size will fit perfectly into a shirt pocket. With a few sweeping, hand movements across any non-reflective print media, good quality text and images can be produced.

A RMPT™ pocket printer will be an excellent tool to print out on the move e-mails, faxes, web pages, business templates/documents and any other form of digital content.

The offer to OEM

RMPT™ is offered to Original Equipment Manufacturers (OEM) under a license agreement for various applications such as bar code-, stamp-, postage metering-, label-, mouse-, large format-, mobile printers and others.

As part of a license agreement, a RMPT™ Printer Controller Module will be delivered to the OEM.

The RMPT™ Printer Controller Module is offering the industry the first of its kind platform for development of compact cordless printing products. The unique RMPT™ navigation system based on state of the art real-time image processing gives the possibility to develop printing products not relying on fixed mechanical references.

Summary

Printer devices using PrintDreams RMPT™ technology can be manufactured substantially smaller, cost-effective, of lighter weight and will print directly on the media. These benefits, coupled with the fact that the printer device is no longer limited by the width or the thickness of the print media, make the RMPT™ printer unique and astonishing.

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