



Eco-Friendly POS: It's Not Easy Being Green ...*Or Is It?*

A Star Micronics White Paper

Retailers no longer need to experience the pains of high monetary investment or an uncomfortable shift in normal operations to reduce costs and unnecessary resources. A new breed of eco-friendly POS printers is now enabling store owners to minimize their operation costs and carbon footprint while understanding the impact on their business through intuitive reporting. This white paper explores how installing an eco-friendly POS printer makes sustainability an affordable option today for retailers of all sizes and specialties in a world where “going green” is deemed costly.

Retail's Shift to Greener IT Operation

Running lean, efficient, and productive business is no trendy conversation topic. Forming the backbone of a healthy company, the streamlining of processes to improve cost reduction and efficiency is ever evolving. From the early abacus morphing into the modern-day POS or endless rows of file cabinets disappearing into paperless systems, it is largely apparent that more economic and intelligent operation is always in high demand.

To meet these needs, retailers today are rapidly adopting more sustainable, “greener” technology. Greener IT can result in higher profits, lower operational and financial risks, increased productivity and a better reputation, among other benefits.¹

The drive is not only fueled by a business's intrinsic desires. Many consumers today are expecting that retailers play a responsible role in adopting more sustainable practices and business owners large and small are stepping up to the mark.

¹ "Green IT The Fast-track to Enterprise Sustainability." Deloitte, Jan. 2010. Web.
<<http://www.deloitte.com/assets/Dcom-Belgium/Local%20Assets/Documents/EN/Services/be-cio-green-it-260110.pdf>>

Who is Making the Shift?

"Multinational retailers like Tesco, Kingfisher, Starbucks and Safeway have made public pledges to promote environmental stewardship by boosting energy efficiency, offering sustainable products, eliminating waste and reducing greenhouse gases," wrote Karen Lowe, General Manager of IBM's Global Retail Sector, for STORES Magazine.² International retailer Marks and Spencer has laid out plans to become the world's most sustainable retailer by 2015.³

Some larger business owners have taken the leap to installing solar panels, upgrading to smarter heating and cooling systems and having new locations built to meet LEED⁴ environmental standards. Smaller retailers with tighter budgets are not excluded from these efforts, some having pledged to do their part by integrating greener POS equipment, purchasing ENERGY STAR certified electronics and participating in local recycling programs.

From a shareholder standpoint, technology store Best Buy's Brenda Mathison, Director of Environmental Affairs, said investors are excited to engage with companies that are taking the environment into consideration.⁵

The repercussions of today's movement to environment-friendly practices will make the shift to "greentailing" a mandatory component of staying in business tomorrow as this trend is already quickly turning into an expectation.

Retail's Going Green Attitude: It's a Challenge

Many retailers see the merit of implementing eco-friendliness into their business, but face challenges which can include:

- Lack of financial resources
- Lack of time
- Difficulty in Adopting Changes

Lack of Financial Resources

Stores make reusable bags available to consumers at a cost. Retailers can overhaul an entire location's structure to be more energy efficient at a cost. Businesses can change their purchasing strategy to be more environmentally friendly at a cost. It would appear that going green means a lot of upfront investment, funds that might not be available at present.

² Lowe, Karen. "Five Reasons for Retailers to Go Green." *STORES.org*. Jan. 2009. Web. <<http://www.stores.org/stores-magazine-january-2009/five-reasons-retailers-go-green>>.

³ www.businessgreen.com March 2010

⁴ Leadership in Energy & Environmental Design - internationally recognised green building certification system

⁵ Maestri, Nicole. "Retailers Go Green to Cut Costs." *Reuters*. 17 Jan. 2008. Web. <<http://www.reuters.com/article/2008/01/17/us-retail-nrf-green-idUSN1720406120080117?pageNumber=1>>.

To make matters even more complicated, even though customers are demanding implementation of green initiatives, trend shows they are typically not willing to spend more money for it. This makes the decision to invest a tricky one for store owners.

Lack of Time

Reinventing the supply chain process, locating new green sources to purchase from, redesigning products to leave as little carbon footprint as possible: There are so many ways to be environmentally friendly, but such little time to spend on researching and implementing them, then seeing that they are properly carried out and later digesting measureables to judge their success. Retailers are already busy running their businesses and many may find investing large amounts of time to analyze more sustainable options a burdensome problem.

Difficulty in Adopting Changes

With change comes adjustment and adjustment removes the security of the comfort zone. Adopting new strategies to honour a more eco-friendly business model results in thinking very differently and a large amount of work in most cases.

Perhaps the changes will require retraining all employees on how to think and function when performing their jobs, possibly resulting in lowering of morale or resignation. Perhaps managers will need to observe new procedures and feel stress of worrying about added workload. Perhaps HR might need to develop documentation describing new policies and ensure they are being observed diligently.

Change, even if for an excellent cause, is most often a very challenging process.

The Solution: Affordable, Effective, Comfortable, Today

Not every environmentally-friendly solution needs to come with a great monetary, time, or human motivation cost. To avoid all of these major roadblocks and still achieve cutting costs and running more sustainable business, retailers are now turning to a small but crucial device: the POS printer.

Printers, by nature, are not environmentally friendly products. They use large amounts of paper and are often always powered on. However, an exciting new class of eco-friendly POS printer addresses these issues by significantly reducing paper and energy usage, resulting in lower costs and a smaller carbon footprint for retailers.

Paper Reduction

Paper usage is a receipt printer's largest negative burden on the environment in terms of waste generation. Many POS printer manufacturers have taken this

into consideration and designed ways to reduce the severity of ecological impact including the methods listed below.

Reduced Top Margin: The top margin is the white space starting from the paper's top edge down to the first line of printed text. It is the no-man's land of the receipt world: unused by the printer and neglected by the customer. Printers not designed to fit in the eco-friendly class typically have top margins ranging anywhere from 11~15 mm.

The amount of space saved by reducing the top margin is dependent on printer design. The most advanced eco printer can reduce paper by printing as early as 3 mm from the top margin without any hardware modification. The result is conserving between 8~12 mm per receipt without any effort from the retailer.

Retailers automatically save simply by using an eco printer that comes with a standard 3 mm Top Margin.



Difference between an 11 mm and 3 mm top margin

Top Margin: 3 mm VS 11 mm

Conditions:

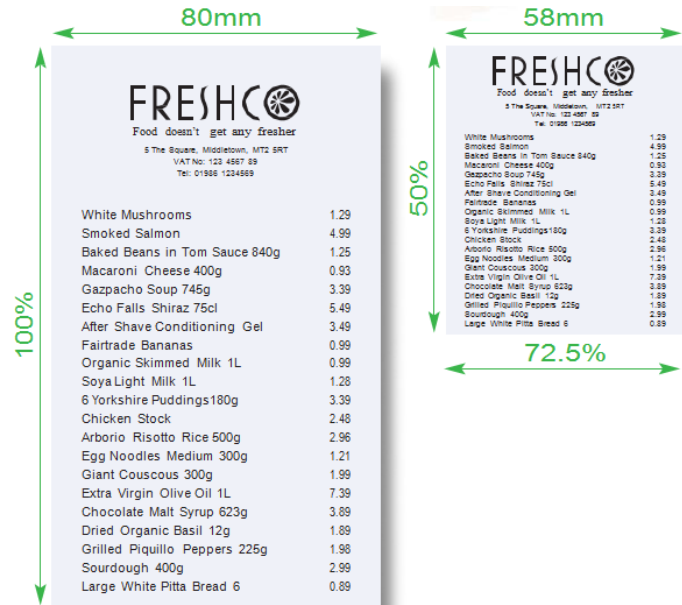
700	Printers Installed Across Retail Chain
300	Printed Receipts / Day per Printer
150	mm Receipt Length
80m	Total on Paper Roll
365	Days / Year in Operation
£0.65	Cost per Paper Roll

Term: 5 Years

	# Paper Rolls Used	CO ₂ Emissions (kg)	Paper Rolls Saved	Total £ Saved	Total CO ₂ Saved (kg)
3 mm margin	684,206	600,916	38,547	£25,055	33,854
11 mm margin	722,753	634,771	0	£0.00	0

Receipt Compression: Most eco printers also enable retailers to automatically reduce the size of their receipts without requiring any modification to existing POS software. Store owners have the ability to compress receipts horizontally, vertically, or both ways for maximum paper conservation benefits. These settings are typically made in utility software provided by the printer manufacturer with easy-to-use dropdown boxes.

The eco printer used for this example allows retailers to reduce current receipt size by a total of 64% with the resulting image quality dependent on content:



Paper Saving: Eco Printers and Compression

This chart displays how much a retailer could actually save by replicating the receipt compression sample shown above.

Conditions:

700	Printers Installed Across Retail Chain
300	Printed Receipts / Day per Printer
150	mm Non-Compressed Receipt Length
365	Days / Year in Operation
80m	Total on Paper Roll
£0.65/0.45	Cost per Paper Roll 80/58mm

Term: 5 Years

	# Paper Rolls Used	CO ₂ Emissions (kg)	Paper Rolls Saved	Total £ Saved	Total CO ₂ Saved (kg)
Eco Printer 64% compression	349,331	306,806	334,876	£312,591	327,965
Non-Eco Printer	722,753	634,771	0	£0.00	0

On Demand Printing: Each day, cashiers provide receipts to customers for small purchases, such as a snack lunch, that are almost immediately discarded. One eco printer addresses this by offering an intuitive option for prompting the cashier to print the receipt or not. Should the customer wish to not have the receipt printed, the cashier can simply select the “No” button to cancel the print job. The transaction data is automatically saved into a journal which allows retailers to understand when a customer wants a receipt, providing valuable insight on where coupon printing will be most effective. In addition, it is possible to reprint the receipt from the journal if necessary.

Power Reduction

The cost to power only one receipt printer is quite small, even when viewed on a yearly scale. However, retailers will see drastic results when they multiply electricity cost and CO₂ savings for that one unit by the amount of printers installed across many stores. A retailer with 700 printers in the field can save a staggering £10,300 in 5 years by simply implementing an eco printer!

Energy Costs: Eco-Friendly Design VS Typical

Conditions:

700	Printers Installed Across Retail Chain
300	Printed Receipts / Day per Printer
150	mm Receipt Length
24	Hours / Day in Operation
365	Days / Year in Operation
£0.13	Estimated Cost / kWh of Electricity Used

Term: 5 Years

	CO ₂ Emissions (kg)	Total kW Per printer	Total Amount Spent at the End of 5 Years	Total £ Saved	Total CO ₂ Saved per printer (kg)
Eco Model	16.8	34.5 kW	£3,140	£10,328	45.4
Non-Eco Model	62.2	148 kW	£13,468	£0.00	0

* Two currently available USB printer models were used to obtain all of the above figures. Measurements will vary depending upon printer model used, interface, frequency of printing, and length of time the printer is powered on.

Reducing Environmental Impact

While striving to reduce the environmental impact of paper and power consumption as much as possible, some POS printer manufacturers are also turning to greener manufacturing and packaging methods such as:

Halogen Free Case Manufacturing: Many electronics manufacturers have taken the initiative to produce products with reduction of halogens: Fluorine, Chlorine, Bromine, Iodine and Astatine. These elements are not harmful to humans or the environment as electronics; rather, the problem occurs during the disposal process.³ When halogens are incinerated, they produce dioxins and furans which are highly toxic, cancer-causing agents. For this reason, some printer manufacturers have removed halogens from case manufacturing.

Recyclable Packaging: The removal of polystyrene, Styrofoam, and plastic bag packaging has also been taken into consideration. Some manufacturers embraced redesigning printer packaging to contain only recyclable cardboard. This process involves a lengthy period of testing to ensure that the printer and all of its included peripherals still retain the same quality result for its in-packaging drop test.

Electronic Manuals: Following in suit with sustainable packaging, some manufacturers are also providing manuals on the Installation CD included with the printer and making those documents freely available online for download. These electronic manuals not only reduce waste but are easier for users to search through.

Benefits of Implementing an Eco Friendly POS Printer

The benefits of implementing an eco printer are plentiful. Installing one of these intuitive printers:

- Simplifies the process for retailers to begin or continue green initiatives
- Reduces operation costs
- Extends retailers' ability to reduce environmental impact
- Requires no employee training as it functions like a typical POS printer
- Provides results with no modifications to existing POS software
- Requires no uncomfortable adjustments to existing business processes
- Contributes to a positive, forward-thinking company image

³ Flinders, Randy. "Halogen Free Electronics An Overview." Presentation. PSES Monthly Presentation. Irvine. *IEEE PSES*. Aug. 2008. Web. <<http://ewh.ieee.org/r6/ocs/pses/>>.

Selecting the Right Eco Printer

While more eco printer models are beginning to appear as manufacturers actively respond to requests of retailers, hardware decision makers can easily narrow down the correct solution by taking these points into consideration:

Maximizing Paper Savings

- 3 mm Default Top Margin
- Horizontal and Vertical Compression Options
- On Demand Printing Option

Maximizing Power Savings

- Intuitive Self Power Management
- ENERGY STAR Certification
- Low Power Consumption

Minimizing Other Environmental Impact

- Halogen Free Case Manufacturing
- Recyclable Packaging
- Free Manufacturer-Sponsored Carbon Offset Program
- Manuals Provided in Electronic Format

Maximizing Business Benefits

- Full 4 Year Manufacturer-Backed Warranty
- Easy-to-Use Eco Reporting Tool to Monitor Paper and Cost Savings
- All Necessities (Cables, Drivers, etc) Included with the Printer
- Simple and Fast Installation

Choosing the Right Partner

- All Features Provided at a Low Price
- Trusted Reputation
- Long History of POS Market Experience

Reasons to Partner with Star Micronics

Star Micronics' TSP100 ECO is the world's first dedicated POS printer manufactured specifically to be eco-friendly. This advanced receipt printer is the crucial bridge between retailers and going green at the point of sale, providing a multitude of features that are friendly to both the wallet and environment.

Star Micronics, a respected manufacturer and recognised leader in the POS industry, has been producing printing solutions since the early 1970's. The TSP100 ECO is part of the largely successful and customer-approved printer family, the TSP100 Series.

This outstanding eco printer ticks all the boxes and offers so much more:

Paper Savings Utility: The TSP100 ECO features a 3 mm top margin as default but gives retailers the option to adjust this space anywhere up to 11 mm, satisfying any specific drop-in replacement needs. Provided with easy-to-use Eco Settings Software, retailers can reduce receipt size both vertically and horizontally while maintaining high print quality or enable the intuitive On Demand Printing feature.

Intuitive Power Savings: Boasting another industry first, the TSP100 ECO is so smart with energy efficiency that it doesn't require a power switch. This ENERGY STAR certified printer goes into sleep mode when not in use and wakes up immediately when a print job is sent to it.

Sustainable Materials: Star Micronics has taken care to manufacture the TSP100 ECO with halogen-free materials and use only recyclable packaging. All polystyrene, Styrofoam, and plastic bags have been removed from the inside of the printer box and replaced with cardboard.

Carbon Offset Program: To further its commitment to the environment, Star Micronics purchased Certified Emission Reductions (CERS) credits to offset the manufacturing, projected power consumption and disposal process of the TSP100 ECO. Retailers who purchase the TSP100 ECO can print out a certification of participation in this program and display it in their stores. Best of all, this benefit comes to retailers at absolutely no extra cost.

Designed for Reliability: Star Micronics is so confident in the reliability of the TSP100 ECO that it is proud to offer the industry's first ever 4 year RTB limited warranty including print head and cutter (Europe & South Africa).

Designed for Efficiency: Star provides an easy-to-read Eco Reporting Tool so retailers can understand how much money and paper have been conserved. Included in the box with the printer is every accessory necessary, including power and communication cables and an Installation CD with drivers and electronic manuals.

With Budget in Mind: This incredible printer comes complete with all these outstanding features at an equally outstanding price. Go green with Star Micronics and save both the environment and money.

Take your first step or continue your initiatives to running a greener and leaner business by requesting a demo of the TSP100 ECO today! Contact Star Micronics by phone: +44 (0)1494 471111, email: sales@Star-EMEA.com, or visit our website: www.Star-EMEA.com



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