Message from our President

**SMART** is committed to business practices that are as environmentally sustainable as they are beneficial to our stakeholders and the community.

Our memory and embedded storage products help our customers achieve their sustainability goals. We have dramatically reduced the use of hazardous substances in our manufacturing. At the same time, we have developed technologies that improve performance, reduce power consumption and extend endurance in our products.

**SMART**’s diverse global workforce is the heart of the company. We provide our employees a comfortable work environment, foster team work and ensure the health and safety of all members. In turn, our employees actively give back to their communities, two examples of which are presented in this report: a Light the Night challenge that resulted in a total of $290,142 donation from year 2012 to 2014 to the Leukemia & Lymphoma Society and a blood drive in which 109 **SMART** employees donated blood to Seberang Jaya Hospital in 2014.

This report summarizes **SMART**’s responsible and sustainable business policies and practices, our ethics in working with partners, and how our people and products are making a positive impact on the planet.

Iain MacKenzie

President & CEO

SMART Worldwide Holdings
The SMART family of companies are leading designers, manufacturers and suppliers of specialty memory and embedded storage solutions for leading OEMs worldwide. The SMART companies have led the way over the past 26 years providing standard and custom products to today's leading global OEMs crossing all major electronic industries. These industries include computing, networking, mobile, telecom, printer, storage, automotive, communications and industrial electronics markets. Taking innovations from the design stage through manufacturing and supply, **SMART Modular Technologies** has developed a comprehensive product line that includes DRAM and Flash memory technologies across various form factors.

**SMART High Reliability Solutions** offers high-performance, high-capacity SSDs defense, aerospace, and industrial automation. SMART's presence in the U.S., Europe, Asia and Latin America enables it to provide its customers with proven expertise in international logistics, asset management and supply-chain management worldwide.
SMART is committed to quality, customer satisfaction, and continuous improvement. The company is certified for ISO9001 (Quality), ISO14001 (Environment) and OHSAS18001 (Occupational Safety & Health) standards, which provide the framework for our management system. All SMART employees are tasked with preventing threats to human health, safety or the environment in our process and complying with legal and other requirements of quality, environment, health and safety to which SMART subscribes.

SMART continuously seek to improve our management system and enhance our performance. Internal audits are conducted periodically to ensure conformance to established policy and procedures. SMART also receives ad hoc and periodic audits from certification bodies, regulatory bodies as well as customers to ensure our compliance towards international standards, legal and customers requirements.

Continual improvement is tracked through periodic management reviews. SMART’s executive management conducts reviews of objectives, targets, and actual performance to ensure that our management system meets quality, environment, health, safety, labor and ethics requirements.
EICC compliance

SMART is a member of the Electronic Industry Citizenship Coalition (EICC). SMART strives to perform across a range of practices, including labor, health and safety, environment practices, ethics, and management systems. In particular, SMART’s labor and ethics policy articulates its commitment to adhere to the requirements specified by the EEICC including: freely chosen employment, no child labor, reasonable working hours, fair wages and benefits, humane treatment, non-discrimination, freedom of association, business integrity and privacy protection, all of which are important in creating and sustaining a positive and productive work environment. In line with these requirements, SMART conducted internal audits to ensure our processes and practices follow the EICC requirements as well as our labor and ethics policy.

In year 2012, SMART joined EICC as a member to show our initiative to help in improving labor, health and safety, environment practices, ethics, and management systems for those parties involved in the electronic supply chain. Through this initiative, we communicated the EICC requirements to our employees, customers and suppliers. We expect those parties adhere to the Code of Conduct that SMART subscribes to in the manufacturing of our products. In the same year, Penang site has also gone through EICC Validated Audit and has shown the compliance towards electronic industry code of conduct.
Product families

SMART Modular Technologies is a leading international manufacturer of memory modules and embedded/removable storage solutions for OEMs in today’s fastest growing application markets around the world. SMART’s comprehensive lines of DRAM memory modules, removable flash memory products, embedded storage solutions satisfy a broad range of applications.

SMART Modular Technologies' Product Lines

**DRAM Modules**
Available in registered, unbuffered, and ECC configurations, SMART’s DRAM memory modules use technologies from DDR4 to legacy FPM and EDO and are available in form factors that include standard height and very low profile DIMMs, SO-DIMMs, NVDIMMs and mini-DIMMs.

**Removable Cards**
SMART designs and manufactures removable flash memory products in a wide variety of form factors including CF, PC Card and Key Drives, that utilize ATA, Linear and USB technologies.

**Embedded**
SMART offers industrial-grade embedded flash-based products including eUSB, ISATA, uSATA, mini-IDE drive form factors equipped with SATA, USB and PATA interfaces.

**eMMC**
SMART’s eMMC Product Family is an embedded memory solution that combines NAND Flash Memory, an embedded MMC (MultiMediaCard) controller, and advanced Firmware in a small BGA package that provides a stable yet cost effective high-density embedded storage.
Product families

Embedded Flash-Based Products

mSATA modules are easily integrated into a host system without any special BIOS modifications or additional device drivers thanks to their industry-standard SATA interface. SMART offers both single level cell (SLC) and multi level cell (MLC) mSATA drives.

The SATA Slim XL small form factor (SFF), industrial-grade embedded SATA module is a robust solid state drive product. The small form factor, low power consumption, and fast data throughput are major advantages of the SATA Slim XL module over traditional rotating hard disk drives (HDDs).

SMART’s mSATA Mini XL is an ultra-small SATA II (3Gbps) solid state drive (SSD) with outstanding performance. Its JEDEC® MO-300B form factor, measuring only 26.8 x 29.9mm, about the size of an SD card. The mSATA Mini XL is compatible with both standoff and card guide mounting methods.

SMART’s Embedded USB (eUSB) is a flash based drive designed to be used as a main boot and storage device for embedded systems. The eUSB’s small form-factor, lower power consumption and fast access times offer distinct technical advantages over more traditional mass storage devices.

SMART’s high-performance, Embedded Flash Drive (EFD) product offering specifically targets the needs of OEM markets, such as networking, telecommunications, and data communications applications. The EFD products are also a natural fit for embedded computing, medical, automotive, and industrial applications.
Product families

Removable/Cards

**ATA PC Card**
SMART's industrial-grade, RoHS-compliant ATA Flash PC Card is designed with the industry's best-in-class read and write speeds, satisfying the requirements of the ultra-direct memory access (UDMA) protocol.

**CF Card**
Offering reliable high performance operation in an industry standard CompactFlash form factor, SMART’s CF Card products are suitable for the most demanding OEM applications.

**CFast Card**
The SATA CFast Memory Card is a single-level cell (SLC) solid state drive product. The small form factor, low power consumption, and fast data throughput are major advantages of the SMART's SATA CFast Memory Card over traditional rotating hard disk drives (HDDs).

**SD Card**
Incorporating on-board error detection and correction algorithms and static and dynamic wear leveling techniques, SMART's SD Card products insure years of reliable operation over the life cycle.

**2.5” SATA SSD**
SMART's industrial-grade 2.5” Sata XL SSD brings the advantages of non-volatile memory to embedded computing applications. It provides low-power, high reliability mass storage in a 2.5” form factor and can be used as a direct replacement for a HDD.

**Enterprise USB Memory Key**
SMART's Enterprise USB Memory Keys address the need for enhanced reliability by incorporating on-board error detection and correction, and global wear leveling algorithms that provide reliable operation over the product life cycle.

Verification of current revision online is required before use.
Product design, manufacturing and test technologies developed by SMART are the key reason that SMART products deliver higher performance, last longer and are more reliable than comparable competing products. SMART incorporates design for manufacturing (DFM) from the product development stage all the way through to mass production, resulting in shorter development cycles and superior manufacturability.
Product content

Full material disclosure
Starting from the design stage of a product, SMART avoids using toxic or hazardous substances. In line with the European Union’s Restriction on Hazardous Substances (RoHS) directive and Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) regulations, we have a clear action plan to eliminate materials containing lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls and polybrominated diphenyl ether from our supply chain.

As part of our commitment, we also work closely with our customers and suppliers to drive the material declaration process whereby we disclose our product content down to the component level. To help with the material declaration process, we adopt Green Data Manager - REACH (GreenSoft Technology, Inc) as our software tool in managing the green data collection to perform substance analysis and compliance validation.

Conflict minerals
As a full member of the Electronic Industry Citizenship Coalition (EICC), SMART also commits that the components that we use do not directly or indirectly finance or benefit armed groups that are perpetrators of serious human rights abuses in the Democratic Republic of the Congo or an adjoining country. SMART prohibits using in its products tin, tungsten, tantalum or gold from any source whose supply chain, traces back to the mines of origin of the minerals used to produce these metals in a conflict zone.
Health and safety are always our first priority at SMART. Every employee contributes to maintaining a safe and healthy work environment. Our EHS committee and ERT team play a key role in ensuring employees’ health and safety. At SMART, we conduct our business activities in light of QEHS policy, whereby we ensure compliance with all health and safety laws and regulations. We are also aware that prevention is always the best mitigation measure. Thus, we implement the best prevention practices in all manufacturing processes.

Beginning in 2011, periodic safety inspections by our management team and safety personnel used to identity areas for improvement in safety and prevention. With the continuous effort from the team, the safety case have been reduced and are kept from majorly increasing.
Diversity

SMART adheres to a non-discrimination policy whereby SMART practices people-oriented and fair treatment principles in the recruitment, promotion, performance evaluation, compensation, training, and retirement of employees. SMART also recognizes that a diverse workforce is our most vital asset that enables creative, think-outside-the-box problem solving. SMART’s global workforce is extremely diverse, bringing together many different cultures, languages, backgrounds and career experiences.

SMART promotes equality on the basis of race, color, ancestry, religion, sex, gender, age, national origin, sexual orientation, marital status, physical or mental disability and any other legally protected characteristics, to provide working environment with equal opportunity employment so that workers are treated with fairness and respect. Figures below show the number of manufacturing site employees and the employee gender ratio.
Diversity

SMART is aware that human capital is an important asset for the organization. Every year, SMART invests in trainings such as 6-sigma, internal auditor training, soft skills trainings, management skills training, process related trainings, EHS trainings, so on and so forth. The trainings are conducted based on training need analysis by the training department. In 2014, EICC awareness trainings were conducted for our employees and suppliers through online training, classroom training and town hall briefings. Internal auditor trainings were provided by accredited personnel to train our EICC internal auditors. In the same year, the first batch of Six-Sigma projects have been completed. The completion of Six-Sigma projects has contributed significant savings for SMART (USD 1,469,110.09 hard and soft saving for year 2014). The figure to the right shows the investment in training over the past five years.
Work environment

SMART promotes a work-life balanced environment whereby in addition to being active in business development, SMART is also actively involved in recreational activities.

- **SMART Football Club** has been actively playing in local football leagues. In 2014, Penang site’s SMART Football Club captured the Penang League Division 1 football championship.

SMART employees work like a family and live like a family.

- **SMART** organizes outing programs and an annual banquet to celebrate the year’s achievements.
- **SMART** celebrates various festivals with their employees. Every year, SMART employees decorate their office and organize open house events for major holidays including Christmas, Chinese New Year, Hari Raya Aidilfitri and Deepavali to celebrate the occasions.
SMART recognizes that climate change is a serious issue and poses social, economic and environmental consequences to everyone. Since 2009, SMART has measured greenhouse gas emissions produced during production. The greenhouse gas emission profile changes as our business profile continues to evolve. As part of the commitment in reducing carbon footprint, we have implemented programs that address energy efficiency and consumption. Through various energy saving programs, SMART managed to control CO2 gas emission from year 2010 to 2014 even with increasing business volume. More efforts are being taken to further reduce the CO2 gas emission in year 2015. As a reward for the excellence in energy efficiency, the Penang site was been awarded “Energy Industry Award” in the category of “Energy Efficiency Management Excellence Award” in 2011 by the Energy Commission, Ministry of Energy, Green Technology and Water, Malaysia. The figure to the right discloses the greenhouse gas (CO2e) emission for SMART.
Energy and resources conservation

At SMART, we strive to protect the environment, conserve resources and reduce our footprint on the planet in every way possible. SMART maintains sustainable manufacturing policies and processes. As one of our commitments to the sustainability of the environment, we implement various energy and water saving programs. Starting in 2011, energy saving equipment and appliances, such as power conditioner, temperature controller, LED bulbs etc., have been progressively replaced in SMART’s plants. By replacing old equipment with new energy saving equipment and appliances, we managed to save an average 204 MWh of electricity per quarter.

For water conservation, a water recycling program has been implemented which takes used RODI water from production and uses it as an input for a cooling tower. With the implementation of this program, we managed to save average 3,143,984 liters of water per quarter.
Hazardous waste management

Hazardous waste management remains a focus and challenge due to increasingly complex manufacturing processes. At SMART, we focus on environmental issues such as the generation, minimization and recycling of waste. Solder waste which is one of the hazardous wastes produced is collected and sold to licensed waste vendors to be recycled. The figure to the right shows the amount of hazardous waste generated and recycled. The amount of hazardous waste being recycled increases from year to year with our effective hazardous waste management program.
Recycling

As an initiative in promoting environmental consciousness, SMART conducts recycle program every year. SMART employees renders their support by contributing recyclable items from their homes. In year 2014, Penang site managed to collect 6.6 ton of recyclable items and contribute to local recycle center.
Supply chain management

As a leader in the memory and storage subsystems industry, SMART has a global network of components and raw materials suppliers. Every year, SMART conducts supplier audits which cover management system, records, design control, supplier quality, traceability, process control, inspection, calibration, nonconformity control, handling, packaging, storage and delivery to ensure goods and services supplied to us are in line with our management system. In year 2014, SMART had conducted 19 supplier audits.

Being a sustainable manufacturer, SMART maintains a good relationship with our suppliers to uphold product quality. We feel grateful to have diverse worldwide suppliers, who are so supportive in supplying us goods, raw materials and services. Our diverse suppliers partner with us in being quality, environment, health, safety, labor and ethics conscious help to improve our mutual business growth.

In year 2014, a supplier forum was conducted at Penang site to communicate SMART’s initiative towards EICC compliance whereby suppliers are being trained and communicated on EICC requirements. Starting with 2013, SMART will include EICC requirements as part of the supplier assessment. Figure above shows the number of supplier audits that have been conducted from year 2010 to 2014.
Highlights of community engagement programs

Being a caring and social responsible organization, SMART organizes various community services and charity programs in conjunction with festive seasons. From Christmas to Hari Raya Aidilfitri, Chinese New Year and Deepavali, SMART cherishes orphans and old folks with our various outreach programs. SMART also donates money and goods to poor families, orphanage and old folks home. Figure below show the charity giving over the past five years. The annual charitable giving increases from year to year with the increasing participation and contribution of SMART employees.
Highlights of community engagement programs

In year 2014, Kelantan (an East Peninsular State in Malaysia) was hit by the worst flood tragedy in Malaysia. SMART Penang was involved in the aiding and support of the effected families. SMART Penang management team together with SMART employees was on ground zero assisting the victims. We managed to gather and donate $76,207 worth of cash value and household needs to the families of the victims of the flood. In Newark site, SMART participated in Light The Night Corporate Cup Challenge to raise funds for The Leukemia & Lymphoma Society’s (LLS’s) Light The Night Walk event and bring help and hope to people battling blood cancers. SMART have contributed in total of USD $290,142 to this event. SMART also engages in other community programs, namely blood donation program and recycle program, as annual activities. Every year, blood donation campaign is carried out to help to replenish the blood bank storage for local medical service center.
GOALS
Corporate sustainability goals

To drive continual improvement towards corporate sustainability, SMART sets goals in our key areas to ensure we hold the accountability for our performance.

Management system
- Target for TS16949 compliance and certification by year 2015.

Products
- Continually to ship zero defect products to customer and achieve > 98% in customer satisfaction.

People
- Maintain our safety performance by achieving a target safety rate of 1.0.

Environment
- Reduce water and energy consumption below year 2012 levels by year 2018.

Partners
- Ensure 100% of our supplier comply to EICC requirements by year 2018.

Community
- Continue to participate in local community outreach programs and help the needy.
For more information, visit our websites:

http://www.smartm.com
http://www.smarth.com