SOLUTION BRIEF
Fujitsu* TP-X II 500* and TeamPoS 7000* Series
2nd generation Intel® Core™ i5 processor
Intel® Atom™ Processors
Retail Solutions

Reducing POS System Lifetime Costs with Both Outstanding Performance and Energy Efficiency

FUJITSU

"Fujitsu* takes the best available technologies and designs retail solutions that drive down cost and give retailers a competitive edge."

Bruce Donis
Vice President of U.S. Retail Sales Fujitsu America

Fujitsu* multi-function and all-in-one POS systems are at the forefront of computing technology

In the past, retailers were hesitant to buy POS systems designed with cutting-edge computing technologies, preferring instead computing platforms with a well-established track record. These attitudes have changed, and today, retailers are looking to invest in the latest technology in order to benefit from lower total cost of ownership (TCO), more capability and longer useful lifetimes.

A prime example is the power-efficient performance of new computing technologies, which translates into lower TCO though lower utility bills and higher system reliability. With the latest Intel multi-core desktop processors it's possible to get both high performance and low power consumption; whereas a few years back, POS systems needed a mobile processor to achieve energy efficiency targets.

Taking a bite out of TCO, Fujitsu* engineered its latest multi-function and all-in-one POS systems with innovative technologies that help prevent early obsolescence, minimize on-site repair calls and save energy. Built for long life, the Fujitsu* TP-X II 500* and TeamPoS 7000* Series have ample performance headroom for future business needs, thanks to powerful, yet energy-efficient, 2nd generation Intel® Core™ and Intel® Atom™ processors. These POS terminals lower maintenance costs by supporting remote manageability and tool-free serviceability. Further improving TCO, the systems dissipate less heat than prior series for a cooler operating environment, which typically increases system stability and reliability. This solution brief outlines some of the features and technologies retailers should include on their 'must-have' list to maximize their return on investment.

Factors: Total Cost of Ownership	Benefit
Computing Headroom	▪ Extend POS terminal useful lifetime with spare processor computing power for future application functionality. ▪ Enhance the customer experience with more compelling multimedia, like digital signage and attractive video displays.
POS Terminal Scalability	▪ Protect POS investments with an upgrade path: memory, peripherals and application integration. ▪ Avoid having legacy equipment delay new storefront functionality (e.g., gift registry, loyalty programs).
Manageability	▪ Save service costs by reducing on-site service calls. ▪ Simplify system inventory and software distribution by controlling POS terminals from a centralized location.
Energy Efficiency	▪ Lower utility costs using terminals with the latest CPUs that go to "sleep" during off-peak hours and consume less power than earlier CPUs. ▪ Decrease energy consumption by allowing IT personnel to remotely power off terminals after hours.
Reliability	▪ Keep service costs down with terminals designed and built to endure the harsh retail environment. ▪ Minimize overheating risk with terminals that eliminate ventilation requirements.

Table 1. Key Total Cost of Ownership Factors

Cost Saving Opportunities

Today's dynamic retail market features an explosion of new in-store devices and applications, all intended to improve the customer experience and drive profitability. Playing an expanded role, "Point of Sale" devices are now becoming "Point of Service" systems as they are deployed in more areas of the store. To ease integration, POS terminals, along with other retail systems, must easily adapt to this fluid environment by seamlessly integrating into a single, cost-effective store solution.

This requires the flexibility provided by two key POS features – computing headroom and scalability – without which a terminal is likely to have a shortened lifespan, and consequently a higher TCO. Day-to-day operating expenses (OpEx) also have a significant impact on TCO, and this is where new computing technologies are adding value by improving manageability, energy-efficiency and reliability. Going into more detail, Table 1 lists major TCO factors and related cost-saving examples that describe how retailers can save cost over the lifetime of their POS systems.

TCO-Lowering Technologies

The Fujitsu TP-X II 500 and TeamPoS 7000 Series are based on 2nd generation Intel® Core™ i5 processor and a host of other features designed to drive down TCO for retailers. The new Intel® processor is more highly integrated than its predecessor, the Intel® Core™2 Duo processor, which was used in previous-generation Fujitsu POS terminals. For example, the latest processor family has up to four processor cores, compared to two, and it has on-chip graphics and a memory controller. These architectural enhancements were possible because the processors are manufactured on industry-leading 32 nanometer silicon process technology. A high level of integration generally improves cost-performance, and subsequently TCO, through lower BOM/system cost, increased performance as well as reduced power consumption and footprint.

The TeamPoS 7000 Series is also offered with Intel® Atom™ processors and solid-state drives (SDD), a combination that delivers exceptional power-efficiency.

POS Terminal Scalability

Scalability protects POS investments by enabling systems to be configured as needed and easily upgraded. Such flexibility allows retailers to extend the useful life of POS terminals through incremental modifications that address changing storefront requirements.

The TP-X II 500 and TeamPoS 7000 Series open architecture platform, compatible with new and existing systems and industry standard operating systems, helps maximize system scalability and flexibility. "The scalability of our latest POS terminals delivers an optimized mix of competitive price and high performance, from mid range to the highest performance available," says Bruce Donis, Vice President of U.S. Retail Sales at Fujitsu America. He adds, "Our POS terminals can be configured to arrive at the right price performance mix for most retailers."

The TP-X II 500 and TeamPoS 7000 Series support the following scalability features:

- A number of Intel processor options, ranging from dual-core to quad-core
- The motherboard socket will accept the next generation of Intel processors
- A wide range of system memory options, up to 8 gigabytes
- Hard disk drives that can be upgraded to a higher capacity
- A variety of I/O (RS232, PCI, USB, VGA/DVI, DisplayPort*, SATA), allowing retailers to upgrade easily as requirements become more demanding
- An extensive set of peripheral options

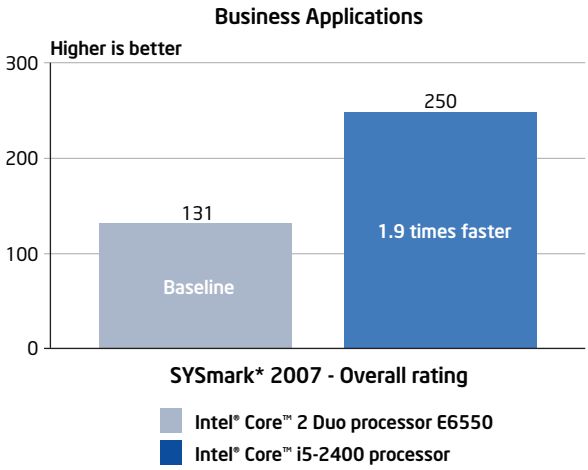

Figure 1. Performance and Performance for Watt Comparison

"Fujitsu* is taking advantage of the powerful performance and energy efficiency of Intel® processors to help enable the TP-X II 500* and TeamPoS 7000* Series meet the evolving demands of retailers,"

Michelle A. Tinsley
General Manager
Embedded Computing Division
Intel Corporation

Computing Headroom and Energy Efficiency

The performance and power-efficiency improvement from new computing technology, based on SYSmark* 2007 benchmarks[1], is illustrated in Figure 1. The Intel Core i5 processor is 1.9 times and 30 percent more power efficient[2] than earlier Intel Core 2 Duo processors. The extra performance, nearly twice as much, provides retailers a future proof POS terminal. The power-efficiency of the Intel Core i5 processor, in reality, is even higher when its additional features (e.g., memory controller and graphics engine) are taken into account. The standby power consumption is also lower as a result of advanced power management that is capable of dynamically powering-off processor cores when computing demand deceases.

Further reducing TCO, Fujitsu POS terminals have a power saving mode for CPU and LED back light optimization. A proximity sensor enables automatic power savings when the operator is not present.

Remote Manageability

Retailers can realize higher system availability while lowering the overall cost of support with the enhanced manageability available on the TP-X II 500 and TeamPoS 7000 Series, pictured in Figure 2. The terminals, when equipped with Intel® Core™ processors, include Intel® Active Management Technology (Intel® AMT)[3] that allows IT to better discover, heal and protect networked computing assets. It provides out-of-band manageability, meaning there's a dedicated secure communications link between the POS terminal and the IT control console. Even if the unit is powered off, or the application has crashed, diagnostics and repairs can be accomplished remotely. This technology can significantly decrease downtime and service personnel time.

GREATER FLEXIBILITY WITH TWO STYLES OF POS TERMINALS

Fujitsu* has POS systems to meet a wide range of needs, whether it's the flexibility of a standard box or the aesthetics and convenience of an all-in-one. The TP-X II 500* is ideal for retailers who want a rich configuration with many peripherals (e.g., dual scanners, scale, electronic funds transfer (EFT) that provides a more traditional POS value proposition. In retail locations, like specialty stores, where styling and compactness are important, the TeamPoS 7000* Series has a clean, modern design that blends into all store interiors, ranging from casual to luxury.

Figure 2. Fujitsu* TP-X II 500* (left) and TeamPoS* 7000 Series

High Reliability

The TP-X II 500 and TeamPoS 7000 Series are designed and built to endure the harsh retail environment. Systems incorporate high reliability and long lifecycle components, including built-in temperature sensors, fan rotational speed controls, security lock, spill-proof enclosure, corrosion resistant chassis and UV-resistant plastics. To help keep service costs down, terminal components are easy to replace and upgrade because they can be accessed tool-free.

Retailers have the option of solid state drives (SDD) that have been shown to be faster, lower power and more reliable than traditional hard disk drives. Increasing reliability further, the TeamPoS 7000 Series SKU equipped with the Intel Atom processor is fanless, which means there is less heat and circulating dust in the box, and no risk of fan failure.

All Fujitsu systems undergo rigorous environment testing that includes: temperature and humidity; shock and vibration; drop; power drop-out/cycling; surges and sags; voltage and frequency margins; noise immunity; electrostatic discharge susceptibility; electromagnetic interference.

Feature Rich

With the TP-X II 500 and TeamPoS 7000 Series, retailers can dial in the performance they need by selecting from a range of Intel processors, listed in Table 2. These terminals offer many other features, including:

TP-X II 500:

- Dual independent touch screens
- Up to two hard drives with integrated RAID 0/1
- DVD R/W option
- High-efficiency 80%+ power supply for PC and peripherals
- Easy to service, tool-free component access

TeamPoS 7000 Series:

- Placement flexibility (on counter and pole or wall-mounted)
- Mixed textures and colors (matte, glossy, black and silver) fit well with store counters
- Ergonomic, bezel-less touch panel
- Clutter free connections - no visible cords
- Second screen options include a 2x20 customer display that is:
  - » pole-mounted, attached to the display, or a second full-screen display

Forefront of Computing Technology

It pays to look under the hood before buying a POS terminal to ensure it is built with industry-leading technology, especially since retailers can save a lot of money over the long term. This is because the lifetime costs of POS terminals have come down substantially with technology that increases computing headroom, scalability, manageability, energy-efficiency and reliability. Fujitsu, with the help of Intel processors, is delivering retail solutions that drive down costs and better adapt to a changing retail environment.

Intel® Processor	TP-X II 500* Series	TeamPoS 7000* Series
Intel® Core™ i5-2400 processor 3.1 GHz, 4 cores	X	
Intel® Core™ i5-2400S processor 2.5 GHz, 4 cores		X
Intel® Core™ i3-2120 processor 3.3 GHz, 2 cores	X	X
Intel® Pentium® processor G850 2.9 GHz, 2 cores	X	
Intel® Celeron® processor G540 2.5 GHz, 2 cores		X
Intel® Atom™ processor D525 (fanless) 1.8 GHz, 2 cores		X

Table 2. Intel® Processor Options

[1] Source: www.intel.com/content/www/us/en/benchmarks/desktop/core-i5-2400-vs-core-2-duo-e6550/core-i5-2400-vs-core-2-duo-productivity.html.

[2] Power efficiency is calculated as follows: benchmark performance divided by CPU thermal design power (TDP).

[3] Intel® Active Management Technology (Intel® AMT) requires the platform to have an Intel AMT-enabled chipset, network hardware and software, as well as connection with a power source and a corporate network connection. With regards to notebooks, Intel AMT may not be available or certain capabilities may be limited over a host OS-based VPN or when connecting wirelessly, on battery power, sleeping, hibernating or powered off. For more information, see http://www.intel.com/p/en_US/embedded/hwsw/technology/amt.

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