



J2 650



**UNIQUE
FEATURES AND BENEFITS**

Overview

It has been said time and time again that the retail environment is fast paced. Then why is it that Point of Sale (POS) touch terminal manufacturers have been providing technology that lags behind the latest computing trends?

The team at J2 Retail Systems went back to the drawing board to develop a truly innovative POS touch screen solution. This involved hours of design and development work to include features never seen before in POS touch terminals. The result was the J2 650.

The heart of the J2 650 was the first innovation. Dual core processors. And not just any dual core processors but desktop versions rather than mobile. Heat management within the tight confines of a POS terminal has always been an issue that has prevented POS terminal manufacturers from utilising the latest in high powered processors. J2's development work successfully developed a design that could handle existing dual core processor chipsets as well as pave the way for future more powerful processors that will become available in the future.

The use of desktop dual core processors provides greater performance over mobile computing varieties and comes at a cheaper cost providing excellent "bang for your buck".

The innovations continue with options such as dual hot swappable RAID hard drives, built in UPS, powered printer ports and built in power supply.

With thousands of J2 650 terminals in use around the world, they have been proven to be a reliable and powerful touch terminal computer.

High performing retail environments need systems that can keep up and the J2 650 has no problems in providing retailers with the performance to stay ahead.

Dual Core Desktop CPU and Chipset

The challenge of utilising high powered computer processors has always been a challenge for POS terminal designers. It all comes down to one issue. Heat management.

With the need to have small footprint terminals come the challenges of matching the performance needs of users with the space available within terminals. It's simple. Put a high powered processor in a small box and it will overheat and fail.

As newer, more powerful processors have come about the POS industry has had no choice but to ignore them with no way of managing the heat within the terminal.

You may say that laptops have for years been able to get away with the latest dual core and even quad core processors. Why?

Well the answer is simple. A dual core mobile chipset is not the same as a desktop dual core processor.

Mobile chipsets are designed to operate in laptops, on battery power in small computer cases. To manage the heat output, a mobile chipset is designed to turn sections of the CPU off when not required as well as reduce the speed of the front side bus and memory. The result is reduced performance.

Desktop chipsets were designed for performance without the need to sacrifice power to manage heat issues. When a mobile chipset versus a desktop chipset of the same specifications are operated side by side, the desktop processor will outperform the mobile chipset.

The front side bus of a desktop processor is generally higher which improves graphic and memory performance.

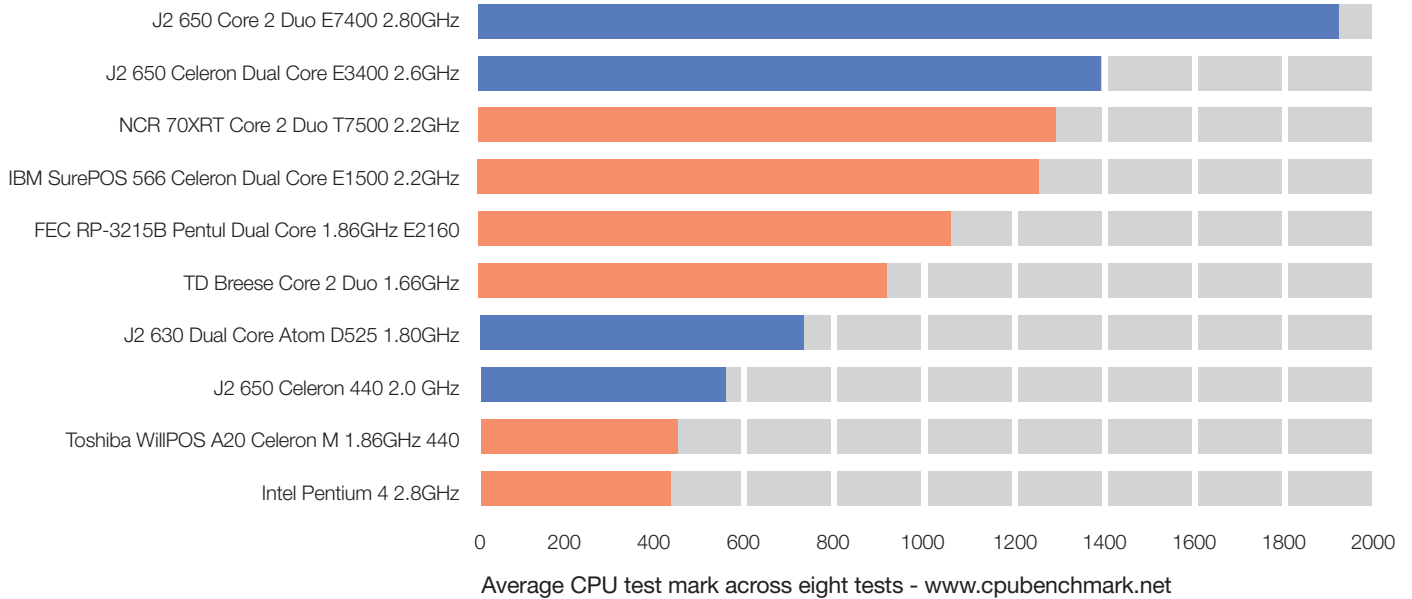
When it comes to power consumption, the mobile chipset does have an advantage but when a desktop processor is used in a POS terminal the power savings are negligible as the processor can go into a reduced power mode when the terminal is not in use in between transactions.

Furthermore the cost difference between a desktop chipset and mobile chipset is substantial with the desktop chipset being cheaper than mobile varieties. As an example an E7400 2.81 GHz desktop CPU is 1/3 of the cost of a T9600 2.8 GHz mobile CPU.

There are now many POS terminals on the market that have dual core processors but most of these utilise mobile chipsets.

The J2 650 was the first dual core desktop processor based integrated touch terminal on the market. This was achieved through extensive research and development in the thermal properties within the touch terminal case. Not only has it provided significant performance gains but the cost of these premium machines have not come at a substantially increased price.

Processor Performance J2 vs other Dual Core POS Systems



Innovative Design

One of the key elements of this design is the use of the “all in the head” concept. The idea is to have all the electronics located in the head of the POS computer. There are many advantages of an “all in the head” design.

- Eliminate internal cables to reduce failures.
- One design allows many mounting options.
- Easy to service
- Very small foot print.
- Cable Management.

By eliminating almost all cables, the all-in-one design helps improve reliability greatly as cable interconnections are one of the major sources of problem in all computers.

By using a standard VESA monitor mounting pattern the system can not only use the standard mounts supplied by J2 but can also use many third party mounting solutions.

The case is designed for easy servicing; removing only two screws can remove the back cover allowing access to the internal components. Then to remove the touch screen, only four more screws need to be removed.

The I/O ports are located at the bottom of the unit, yet can still be accessed without powering the terminal off.

Green Mode / Fan less Operation

By changing one setting in the BIOS, the 650 can be configured to function as a fan-less POS system. In this mode the standard 1.6GHz processor and chipset run in a reduced power mode which means that the two fans

are off and the 650 is convection cooled. The system performance in green mode is greater than other fan-less POS systems on the market, with the 650 benchmarking near the same performance as a 1.3GHz Celeron M processor based system.

The Green mode helps retailers reduce costs through less power usage and using lower cost CPU's for less demanding applications.

Processor Support

The 650 supports a very wide range of Intel processors. Each provides a different price performance level. Celeron single core, Celeron dual core, Pentium dual core and Core 2 Duo with processor speeds from 1.6 GHz to 3.0 GHz are all supported by the 650. The 650 comes standard with the Intel single core 1.6 GHz Celeron 420 Conroe Core processor but can be ordered with a different processor type. The processor can be easily upgraded by a qualified technician. The 650 uses the Intel defined LGA775 socket.

With such a wide range of CPU's available there is a price point to match your required performance level. The LGA socket 775 allows for newer models CPUs to be used in the 650 model. Intel have just released the E3400 Dual Core Celeron, which has a high performance level, but is the same price as the entry level 440 CPUs. The new E3400 will become the entry level CPU for the 650 by the end of this year.



Optional Hot Swappable RAID/ Dual Hard Drives

The 650 is the first integrated POS system on the market to offer a hot swappable RAID feature. The two internal 2.5 inch SATA hard drives can be configured as a RAID array which gives true fault tolerance to the hard drive subsystem. This has not been available on an integrated POS device before!

Unexpected HDD failure can result in the loss of crucial business information and data and also interrupt the running of your store and place added stress on your staff and customers. RAID technology protect you important data. RAID technology simply provides two hard together to form a single large capacity storage device. Known as "mirroring", RAID works by replication all systems data on a second hard drive. Data is simultaneously written on two hard disks rather than one, creating a backup of all data. If the 1st hard disk fails all information is available on the second hard drive without interrupting operations of the terminal. The faulty hard disk can be hot swapped with a new hard disk.

UPS

The 650 features a inbuilt DC powered UPS that fits conveniently into the base of the terminal. The DC powered UPS allows for operation similar to a notebook computer in the event of a power failure. The terminal can be operated for up to 2 hours including peripherals that are powered through the unit.

Automatic LCD Brightness Control

Another innovative feature of the 650 is its use of a light sensor to control the LCD brightness. A light sensor is built into the unit and can detect when a room is darkened. It will automatically dim the LCD so that it is not too bright.

Printer Power Port

The 24 volt Printer Power Port can power most POS printers on the market, including the popular Epson line of printers. When used along with the J2 UPS, if a power outage should occur, the POS terminal can still operate and print receipts for up to two hours. Also, when the 650 is turned off the printer is turned off also. This is very useful when the auto power on and off features of the 650 is used.



Desk Mount, Pole Mount and Wall Mount

The 650 case is designed so that it may be used in many different POS environments by allowing for different mounting options. The system can use a standard adjustable counter top

base, wall mount bracket or the VESA 75mm mounting pattern. Using the VESA standard mount, many different types of mounting options are available such as an articulated arm, pole mount, ceiling mount and others.

Optional Peripherals

The 650 has numerous options including:

- 2 x 20 Line Customer Display
- 10 or 12 inch LCD Customer Facing Display
- 3 Track MSR
- Wi-Fi Network.
- Finger Print Reader.

MTBF of the 650 Terminal

The MTBF can be a very misleading number. In fact a number of manufacturers no longer publish MTBF data as it can be so misleading.

Most of the components used in the 650 have a MTBF considerably higher than 1,000,000 hours, which is true of our competitors as well. The J2 650 does use the higher quality notebook parts, were as a majority of our competitors use desktop components that are not normally as highly rated for MTBF. In reality these components do not normally enter into the picture of true failures, the real MTBF of the system is the lowest rated MTBF component.

For the 650 the component with lowest MTBF rating, hours

LCD panel (Backlight)	50,000
Fans	150,000
Touch screen	490,000
HDD	500,000

The 650 is then considered to have a MTBF of 50,000 hours. However MTBF should not be confused with useful life. The MTBF of 50,000 hours for the LCD is measured at 24/7/365, with full brightness. By turning off the backlight off with the screen saver or dimming the backlight, the

useful life of the LCD can be extended greatly. J2 has customers using LCD based products that are now 15 years old. The true measure of reliability is failures in the field. Currently the J2 650 has a failure rate of 0.68 %. This failure rate is based on 15,000 install base, over 2.5 years.

After Sales Support & Warranty

You can't put a price on having after sales support in the event that the unexpected happens and your POS terminal requires servicing. This is why J2 offers support services that can be tailored to your needs, long after your initial purchase.

The 650 terminal comes with a standard 3 year Return to Base (RTB) Warranty. Furthermore, J2 Retail Systems believe that if anything malfunctions under normal use within the first 90 days, a replacement is more than justified. This is why J2 offer a Replacement Warranty for all faulty terminals that have malfunctioned within the first 90 days of normal use.

It is not always possible to wait 2-3 days for a unit to be fixed. This is why J2 Retail Systems offer an industry leading onsite support service with flexible options to suit the needs of your client's business.

From 9am-5pm - Monday-Friday, to 24 hours a day - 7 days a week, J2's onsite support service can fit the time schedule to your client's operating hours. Furthermore J2's onsite support service covers all metropolitan and major rural areas in Australia and New Zealand, making each package tailor made to suit your client's business.

J2 On-Site Warranty Locations

	Point of Sale			
Coverage Hours	Mon-Fri 0800-1800	Mon-Fri 0800-1800	7 Days 0800-1800	24 x 7
Response Time	NBD	4Hr	NBD	4Hr
Capital City (AU) & City Service Centre (NZ)	✓	✓	✓	✓
Regional Service Centres	✓	✓	✓	
Country Service Centres	✓			
Remote Service Centres	✓			



Lifecycle

J2 only uses chipsets from Intel's embedded roadmap. This allows J2 to guarantee that our products, including the 650, are available for a 5 to 7 year lifecycle. Support and service are available for a further 5 years after EOL (End of Life). The 650 is schedule to be manufacturer until 2014, with support and parts available until 2019

Current J2 650 Users



J2 Retail Systems Australia Pty Ltd

J2 Retail Systems Australia is a wholly owned subsidiary of J2 Retail Systems (UK), this gives our customer the benefits of dealing directly with the manufacturer, and designer of the products.

- Rapid technical response and direct access to J2's engineers.
- Short lead times, both supplying products and completing repairs. Currently lead times are 2 days for orders and warranty repairs.
- Staging and loading customer applications, so terminals are ready to work straight from the box
- Direct ship to your customer's site
- Supply industry leading POS peripherals
- Streamlined RMA process on J2 website.

J2 650 Specifications

SPECIFICATION	
PROCESSOR CHIPSET, MEMORY AND OPERATION	
Intel Processor	Celeron 2.0GHz 440 Core 2 Duo 2.81GHz E7400
Chipset	Intel Q965
Main Memory	Max 4GB, 2 x DDR2 DIMM, 800MHz
Graphic Memory	Intel's Dynamic Video Memory Technology
Fans	Fanless in Green Mode , Quiet Blade Server fans for Dual Core with embedded Controller
LCD TOUCH DISPLAY	
LCD Size	15 inch TFT Display
Touch Screen	Resistive 5 Wire
Tilt Angle	0-90°
Sealed Screen	YES
Automatic brightness sensing monitor	YES
STORAGE DEVICE	
HDD	160GB Standard 2.5 inch
Dual HDD or SSD	YES
RAID 0 (high speed)	YES
RAID 1 (back-up)	YES
Hot Swappable HDD	YES
I/O PORTS	
USB	8 USB 2.0, 4 I/O Panel, 1 left side, 3 interna
Serial	3, 2 powered with 5v or 12v
Parallel	1 DB25 I/O Panel
LAN	Gigabit 10/100/1000
Cash Drawer	2 x 24 volt (or 12) RJ11
Video Port	1
Printer Power Port	YES
Audio MIC in / Headphone	YES
OTHER	
Pole Mountable	YES
Wall Mountable	YES
Internal or External Power Supply	Internal or External
Internal UPS	YES, Optional 1.5 hour run time
Weight	7.6kg
Warranty	3 years. Optional On-site