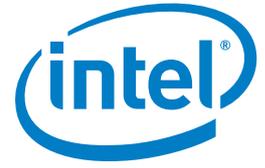


## CASE STUDY

### Intel® Core 2 Duo

Mobility in the Enterprise

Remote Manageability



# Highly reliable embedded solution for digital signage system

Focusing on helping users achieve their business goals through today's sophisticated technologies, Axiomtek adopts Intel® Core 2 Duo to provide a total digital signage solution that counts on reliability and long lifetime support.



Founded in 1990, Axiomtek is one of Taiwan's major design and manufacturing companies in the industrial computer field.

The company designs, manufactures and supports versatile and modularly designed single board computers (SBCs) applied computing platforms, and touch panel computers for digital signage and displays. Its total digital signage solution is recognized as an excellent platform to manage and broadcast visual and audio content effectively, providing users' customers with information, entertainment and a variety of other content.

As a leading industrial computer manufacturer, Axiomtek is devoted to producing state-of-the-art solutions to support users in achieving their goals.

Since its establishment, Axiomtek has successfully gained worldwide recognition for its innovative designs and outstanding customer satisfaction.

"The Intel Core 2 Duo platform is reliable and robust for the tough bus environment. Intel's embedded solution comes with long lifetime support, which is important for this kind of business."

Bobby Chang  
Product Manager  
Axiomtek

## CHALLENGES

- **Address power-related issues within vehicle digital signage.** Build a reliable vehicle computer that should be both shock- and vibration-resistant, and ready for any unstable power supply to recover from any system failure.
- **Improve software connectivity capability.** Adopt a more powerful platform that allows vehicle digital signage to effectively connect to WiFi and 3G.

## SOLUTION

- **Utilize a reliable vehicle computer powered by Intel Core 2 Duo.** Achieve high reliability and high uptime for digital signage systems that guarantee recovery from system failure and resistance from shock and vibration that bring about power supply issues.
- **Convert from RISC architecture to Intel-based platform.** Improve connectivity to communication technologies such as WiFi and 3G by utilizing the Intel Core 2 Duo platform in providing fast and easy connectivity.

## IMPACT

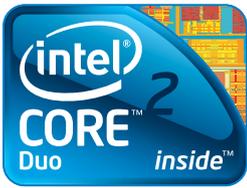
- **Highly reliable software for software investment re-use.** High uptime of the device enables low manpower utilization and better total cost of ownership.
- **Widen customers' market reach.** Enable customers to keep pace with modern solutions that will help redefine their business from a telecom/advertising agency to a total digital media company.

## Introduction

Advertising continuously makes a leap to keep pace with the modern world. From conventional signs and solutions, advertising has gone digital, with digital signage continuously generating popularity and diversifying to make its presence felt in both public and private spaces. Axiomtek, a leading industrial computer manufacturer, leads the digital signage revolution by offering solutions aimed at helping its customers efficiently broadcast dynamic digital content to target audience.

Axiomtek presents digital signage platforms that help operators manage and display content, such as information commercials and promotions, in various media formats easily to achieve their goal of communicating effectively with their target audience. Today, its digital signage platforms help deliver its customers' content via transportation services such as public transportation buses.

As this advertising platform is a 24/7 non-stop service, Axiomtek knows the importance of uninterrupted service to effectively deliver their customers' communications goals. Ensuring that their digital signage platform runs smoothly allows their customers to reach out to their audiences whenever and wherever. Without compromising on the quality and efficiency of its digital signage platforms, Axiomtek partnered with Intel to build highly reliable and performance-driven digital signage systems to its target markets.



# Axiomtek's digital signage system powered by the Intel® Core 2 Duo platform provides customers high uptime in device usage with low maintenance support and better total cost of ownership.

## Reliability and stability issues hamper real-time digital signage advertising

Axiomtek's clients include the largest transit advertising light box vendor in Taiwan and Chung Hwa Telco. Co. Ltd., the largest telecommunications company in the country. These clients provide content to their respective customers/passengers that include: (1) location-based service such as information on shopping malls and restaurants; (2) advertisement on brands and services such as clothing brands; and real-time news and updates on typhoon, earthquake and rainfall.

Prior to adopting Axiomtek's digital signage system, these clients used a RISC-based infrastructure. The limitations of this infrastructure made it difficult for these clients to make smooth connectivity to current communication technologies such as WiFi and 3G. These communication technologies are imperative in ensuring real-time updates on the content delivered by the digital signage system.

Apart from this problem, RISC-based platform was not reliable enough to meet power supply issues head on. As power supply on buses can be unstable, this poses shock and vibration risks on the digital signage system. On top of that, the old platform did not come with failure recovery mechanism that would allow the digital signage system to continue running smoothly in case system failure risks occur.

"With a service that is time-sensitive, digital signage systems should with stand the tough bus environment. To meet our clients' requirements, we knew we needed a reliable solution to meet this kind of challenge," says Bobby Chang, Product Manager, Axiomtek.

By partnering with Intel, Axiomtek was able to come up with an optimized, more reliable version of the RISC-based digital signage system.

## Built for real-time, built for long life

Utilizing the Intel® Core 2 Duo platform to power the digital signage system, Axiomtek was able to build a reliable solution that met power supply issues. As the Intel solution has embedded long lifetime support, the digital signage system provided high uptime in device usage and was able to recover from any system failure such as shock.

The digital signage system utilizing Intel-based solution is able to communicate with the server via 3G network. The video and banner contents are downloaded from the 3G network of the embedded vehicle PC. The embedded video system utilizes CAT5 to deliver the content from the embedded PC to the two displays. DVI from the display player PC enters into the video transmitter which then delivers the signal via the CAT5 to the other display, where it is converted to a video signal and then displayed on the screen. The video distribution system offers high-quality video.

Through discussions with its customers, Axiomtek has identified the locations where the digital signage equipment will be located: behind the seat of the bus driver and in the middle of the bus. Only one embedded PC was needed for the two-display output.

In addition to having the capacity to update the content easily, the embedded PC also enables reporting the system's power, communication and device status. All lost connections can be detected and reported instantly. Plus, the administrator is able to remotely update the system and control the system through the 3G network.

"Using Intel's high performance CPU powered by the Core 2 Duo platform utilizing new communication technology like 3G has made location-based service like digital signage realized," adds Chang.

## Leveraging new advertising solutions through high-quality digital signage system

Through Intel-based digital signage system that provides high uptime in device usage, Axiomtek's customers achieved better total cost of ownership as the system utilizes low manpower maintenance and provides better software investment. It can also be re-used.

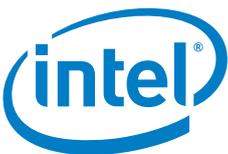
Add to that, Intel's support allows Axiomtek to deliver long lifetime support to its customers. Cooperating with Intel's staff allows Axiomtek to bring not only new technology but also high quality digital signage solutions through Intel's digital signage seminar and documentation, building a highly reliable embedded system for digital signage users.

"This digital signage solution using Intel-based technologies leads our customers towards redefining their business. Now, they are not only confined to being a telecoms company or advertising agency, but a total digital media company," shares Chang.

Find the solution that's right for your organization. Contact your Intel representative, visit Intel's Business Success Stories for IT Managers ([www.intel.com/itcasestudies](http://www.intel.com/itcasestudies)), or explore the Intel.com IT Center ([www.intel.com/itcenter](http://www.intel.com/itcenter)).



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