



## Varied Bluetooth Applications Lead to **Market Growth**

# Varied Bluetooth Applications Lead to Market Growth

By Greg Quirk

**Bluetooth®** is an open standard to connect devices over a short range using little power. It utilizes packed protocols to communicate to multiple systems at the same time to transmit and receive data. Driven by the **Bluetooth** Special Interest Group (SIG), a number of versions of Bluetooth have been created. The most common today is **Bluetooth v2.1 + EDR**, which allows for simple pairing between devices. However, there is a **version 3.0 + HS**, which offers faster transfer speed via a collocated **802.11** link.

The initial use for Bluetooth was limited, but today the applications are quite varied. Most consumer electronics products use Bluetooth, including **smartphones, tablets, headsets, gaming consoles, keyboards, mice, speakers, computers** – the list goes on and on. But it is also used in many other industries as well, such as automotive, industrial, medical, bar code scanners, and traffic control systems.

### **Revenue**

Overall, **Bluetooth** revenue worldwide is expected to be close to \$4B by 2013, compared to \$1.7B in 2007. This indicates about a doubling in revenue, but given price pressures, it will represent more than a doubling in chip sales. In some markets, Bluetooth functionality is being integrated into other **wireless** chips. In others, the demand for lower bill of materials is reducing margins.

### **Mobile**

Given the wide range of applications, the revenue for Bluetooth is quite large. When it comes to smartphones, **Bluetooth** has an attach rate of 60%. Projections indicate it will have closer to a 70% rate by the end of 2012. Take the iPhone 4 and iPad as just one example. The combined **Bluetooth** and **802.11** chipset has an estimated price of \$7.80 according to iSuppli, and there have been multiple millions of the devices sold.

In many locations, it is illegal to hold a phone to your ear while driving. However, hands free headsets are legal, creating a large market for both the headsets as well as Bluetooth embedded in smartphones.

## Health Care

Bluetooth is making it easier to **monitor patients** and share vital information, even when the specialist is not in the same hospital, or even the same city. For example, a heart monitor can be connected via **Bluetooth** to a computer to transmit an EKG to a cardiologist. A small, digestible chip could be added to a pill to monitor if a patient took a drug and send information about the digestive tract to a smartphone to free up a nurse or home health care professional's time. The options are limitless and will make caring for the elderly easier, as well as providing important information in a less invasive manner.

## Industrial

The benefits for Bluetooth in industrial applications is that it is small and low powered. It can be placed in difficult-to-reach or harsh locations, making it possible to monitor and control temperature, humidity levels, and vibrations levels in these otherwise inaccessible locations. As with health care applications, Bluetooth in industrial applications can be implemented in a wide array of different ways.

## Conclusion

Although the recession slowed semiconductor sales for a period, things have started to pick up again. **Bluetooth** is applicable to the quickest rebounding segments and can be used to solve problems within that space. As other areas gain momentum, Bluetooth solutions will be ready to solve their needs as well, making this a very flexible, and profitable, industry.

*Greg Quirk has been a technical writer since 2004 focusing on semiconductor components, consumer devices and business trends. He has written numerous articles for industry publications and presented at technical conferences. His expertise has been sought by the financial community on multiple occasions to predict design-wins in popular consumer products.*