

INCISOR™

for the short
range connectivity
environment

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UNREST IN THE WPAN SPACE

THIS ISSUE

UWB & WI-FI VIE FOR HIGH SPEED BLUETOOTH

REARCHITECTING THE MOBILE PHONE VIA SMART INTEGRATION

THE ROYAL AFFAIRS: WHEN BLUETOOTH MET UWB, WIBREE AND NFC

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tears before bedtime

Although there have been no public statements, those in the know are aware that there is major unrest in the WPAN space at this time. Apart from any age-old jostling between WPAN solutions, there is a much more intense battle going on.

This is the battle as to which high data rate wireless solution will be aligned with Bluetooth as the backbone for High Speed Bluetooth, or Bluetooth 3.0 as it is also known (though Bluetooth 3.0 will also encompass other advances to the technology).

Initially, it was to be Ultra Wideband. Now, this is a complicated technology and has taken time to come to market. It was always going to (take time), but the time involved has allowed restlessness to ferment, and competing technologies – ok, the Wi-Fi guys – to feel they had an opportunity to pull the rug out from under UWB's feet. We know from the way business is done in the world of Wi-Fi – they are happy to bring products to market under the stewardship of 'draft' specifications – that there are some aggressive and impatient parties involved. Some of these operate in spheres of influence that affect the directions that Bluetooth takes.

The Bluetooth SIG is in a difficult situation today. It has to find a solution that will satisfy the needs of the technology and the spec, and which will also keep the peace with commercially important players, many of whom wear Bluetooth, Wi-Fi and UWB hats.

I believe that a significant development is close. When colours are finally nailed to the wall, not everyone will be happy.

Vince Holton

Publisher & editor-in-chief, Incisor / IncisorTV

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Latest CSR silicon combines Bluetooth, Bluetooth low energy, GPS, FM Tx/Rx

During June, CSR launched its seventh generation BlueCore silicon. BlueCore7 integrates Bluetooth v2.1+EDR, Bluetooth low energy, eGPS (enhanced Global Positioning System), and FM transmit and receive technologies on a single chip.

CSR has integrated Bluetooth low energy, eGPS and FM Tx and Rx technologies into BlueCore7 alongside an enhanced Bluetooth v2.1 + EDR radio which delivers +10dBm Tx and -91 dBm Rx. These enhancements help BlueCore7 to extend the overall range and across-body performance to provide better audio quality (think handset on one side of the body and headset on diagonally opposing ear). BlueCore7 includes CSR's proprietary AuriStream voice CODEC, which is said to produce the quality of a fixed line call, when using a Bluetooth connection, and is capable of a 30% reduction in power consumption. Inbuilt speaker drivers also allow users to connect headphones directly to the device.

CSR is developing the concept of a wireless connectivity centre (see p8 '**Re-architecting the mobile phone via smart integration**'), integrating more wireless technologies into its Bluetooth subsystem. The aim is to allow designers to increase functionality of their end products without impacting the size or the bill of materials (BOM).

BlueCore 7 features

In April, CSR gave the world's first public demonstration of Bluetooth low energy technology. BlueCore7, with Bluetooth low

energy, takes less time to connect than conventional Bluetooth and results in lower power consumption when connectable.

CSR's eGPS system was launched earlier this year. By sharing resources with the Bluetooth radio and leveraging memory and processing already available on the host platform, CSR says it has reduced the cost and made significant power and performance improvements necessary for embedding GPS functionality into a mobile handset.

Transmit and receive FM radio with Bluetooth is another key feature of BlueCore7, which allows the Bluetooth and FM radios to work without interference, either independently or together to allow users to stream FM radio from a handset to a pair of Bluetooth headphones. CSR's FM receiver provides -110dBm of sensitivity, securing high quality FM reception even in difficult environments. To overcome the challenges of using a handsets internal FM antenna the FM transmitter has a high maximum output power of +4.5dBm.

Matthew Phillips, Senior Vice President of CSR's Mobile Handset Connectivity strategic business unit commented, "BlueCore7 is a truly intelligent new architecture that integrates more wireless technologies on a single chip than any other product on the market. Building upon our strengths in Bluetooth and our expertise in embedded wireless technologies, BlueCore7 delivers a robust and comprehensive solution that boasts the industry's leading power and performance figures." Phillips continued, "We have seen high demand from our customers for Bluetooth, GPS and FM functionality, coupled with an industry need to keep cost, size and power consumption of embedding such technologies to a minimum. CSR's core focus is and always has been in embedded wireless connectivity and due to customer demand we have now developed a connectivity

centre that reduces the complexity of integrating multiple radios into mobile phones and other consumer portable electronic devices."

BlueCore7 is available in QFN and WLCSP packaging and will be in volume production from Q4 2008.

MindTree unveils Bluetooth SDK for automotive

Bluetooth IP solutions company MindTree has announced the availability of its EtherMind Bluetooth Software Development Kit (SDK) for the automotive market. The company is targeting infotainment and Personal Navigation Devices (PNDs).

MindTree's SDK is backed by the EtherMind Bluetooth stack and a range of profiles. It manages the complexities of establishing and maintaining connections with multiple devices inside a car through a multi-profile co-existence Bluetooth manager.

Applications can exercise the services of the SDK through high-level Application Programming Interfaces (APIs). At the same time, the SDK provides sufficient hooks for the applications to control and customise to customer needs. Supplementing this are plug-in interfaces between the application components (such as Media Players) and HMI elements such as Voice Recognition (VR) or Text to Speech (TTS) and the Bluetooth SDK.

The SDK is available for popular operating systems such as QNX, Windows CE, ITRON, Linux and several other Real Time Operating Systems (RTOS), and includes a qualified profiles suite including PBAP, OPP, FTP, A2DP, AVRCP, HFP, and SAP.



Nokia to acquire Symbian

This story is not really about short range wireless, but it is about cellphones and in our industry that means it is newsworthy. Nokia has launched a cash offer to acquire all of the shares of Symbian Limited that it does not already own, at a price of EUR 3.647 per share. The net cash outlay from Nokia to purchase the approximately 52% of Symbian Limited shares it does not already own will be approximately EUR 264 million.

Current shareholders Sony Ericsson Mobile Communications AB, Telefonaktiebolaget LM Ericsson (publ), Panasonic Mobile Communications Co. Ltd. and Siemens International Holding BV have all undertaken to accept the offer, representing approximately 91% of the Symbian shares subject to the offer, and Nokia also expects Samsung Electronics Co. Ltd. to accept.

Nokia says that the acquisition is an important step in the establishment of the Symbian Foundation, announced by Nokia, together with AT&T, LG Electronics, Motorola, NTT DOCOMO, Samsung, Sony Ericsson, STMicroelectronics, Texas Instruments and Vodafone. More information about the planned foundation can be found at www.symbianfoundation.org.

"This is a significant milestone in our software strategy" said Olli-Pekka Kallasvuo, CEO of Nokia. "Symbian is already the leading open platform for mobile devices. Through this acquisition and the establishment of the Symbian Foundation, it will undisputedly be the most attractive platform for mobile innovation. This will drive the development of new and compelling, web-enabled applications to delight a new generation of consumers."

Nokia expects the acquisition, which is subject to regulatory approval and customary closing conditions, to be completed during the fourth quarter of 2008 and. After the closing, all Symbian employees will become Nokia employees.

Industry response has been rapid. Neil Mawston, Director at market research company Strategy Analytics, said, "We expect Nokia to use royalty-free Symbian software as a loss-leader to drive profitable growth in handsets and services in 2009. This is a good move for Nokia, because cheaper smartphones for the mass-market will eventually drive higher global volumes of Nokia devices and Ovi content."

Mawston's analyst colleague at Strategy Analytics, Bonny Joy, added, "Lower costs for the Symbian operating system spell bad news for licensable rivals, such as Google Android and Microsoft Windows Mobile. They will impact Android on volume and Microsoft on value. Symbian will match Android on zero-Dollar pricing, and this diminishes one of its major competitive advantages. For Microsoft, the pressure will surely mount to cut the price of its license fees to handset vendors, which we estimate to be a relatively high \$14 per unit worldwide in 2008."

Freescall joins RF4CE Consortium

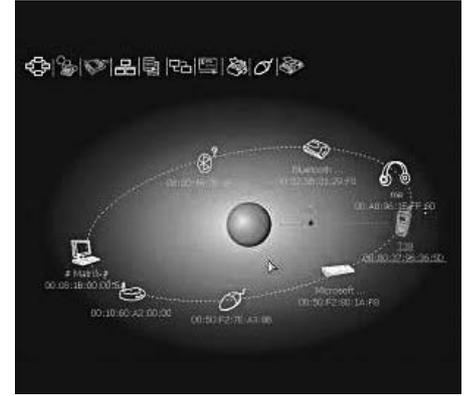
Freescall has joined the RF4CE (Radio Frequency for Consumer Electronics) Consortium, which has been formed to develop a new protocol that will further the adoption of radio frequency remote controls for audio visual devices. The consortium founding members - Panasonic, Philips, Samsung Electronics, Sony Corporation - are working together

with Freescall Semiconductors, OKI, Texas Instruments to create a standardized specification for radio frequency-based remote controls

Freescall is working with the Consortium on the development of the spec and is providing its Synkro technology for incorporation into the specification. Freescall launched Synkro in 2007 and is currently in commercial production. The company is providing its networking protocol software stack, written on top of the 802.15.4 standard, for use in the design of home entertainment products such as digital televisions, DVD players, audio/video receivers, set top boxes, docking stations and remote controls.

The CE industry has used IR technology for more than 30 years for networking purposes. Communication from an IR-based remote control unit must be in line-of-sight of the device and within a short distance. For today's more connected consumer devices such as plasma and LCD screens continues to grow, IR technology no longer has the ability to effectively control these larger devices because of its technical limitations.

The ultimate goal of the RF entertainment control network is more than just replacing an IR remote control. RF technology is expected to enable control capabilities such as two-way communication between entertainment devices. With a single RF remote device, consumers would be able to control every aspect of the connected home. It is engineered to allow control over appliances and equipment from anywhere in the home without regard to walls or floors.



Bluetooth or a bullet

One of the surest ways to boost take-up of Bluetooth in a given location is to make it illegal to use a cellphone while driving a car. At least, this is the theory. British drivers seem to have a blatant disregard, and insist on tying up one arm to talk bilge to their mates on their handset, while at the same time eating an apple, streaming another mpeg to the audio system, programming their Tom Tom, applying their make-up or generally checking themselves out in the rear-view mirror. Oh, and driving their car. Fines and points on the licence ain't doing it at the moment.

On July 1, California and Washington join other US states (New York, Connecticut, New Jersey and Washington DC) by banning the use of handsets while driving. The July 1 hands-free laws will impact 23 million licensed drivers in California and 4.6 million drivers in Washington. In addition, visitors driving in the areas with hands-free laws will also be required to comply with handheld bans. The trend only promises to grow as every state in the U.S. has considered some form of hands-free prohibition.

Now if you are thinking it has a vested interest, you could well be right, but the Bluetooth SIG is suggesting that products such as headsets, in-vehicle solutions, after-market car kits and speakerphones will enable drivers to stay connected on the road while complying with hands-free laws. The SIG has provided online educational resources for hands-free compliance using Bluetooth technology at http://www.bluetooth.com/btmicro/ontheo_demo.html.

"With more and more states and individual cities passing hands-free laws, it's getting difficult for drivers to know where the laws are in effect," commented

Mike Foley, executive director of the Bluetooth SIG. "The simplest way to comply is to go wireless with Bluetooth technology. Many new vehicles come with Bluetooth technology built in. It's easy and cost effective to buy a headset that connects to your mobile phone, install an aftermarket Bluetooth car kit, or simply clip a Bluetooth speakerphone to the vehicle's visor."

Under both laws (SB 5037 in WA and SB 1613 in CA), it is illegal to hold a cell phone to the head while driving, making it mandatory to use a hands-free device when talking on the phone. Drivers violating the laws will receive a ticket and will be fined between \$20 to \$175 in California and a flat \$124 fee in Washington.

Now, telling people they can't use their cellphone in the car any more might not work. But ... cops in the USA carry guns. Hopefully they will have more luck than their British counterparts when it comes to persuading drivers. What is worse to have in your ear – a cold steel muzzle or a bit of plastic and a blue flashing light?

IVT ports BlueSoleil to Linux

Bluetooth software specialist IVT has ported its Bluetooth application software, BlueSoleil 5.0 on Windows XP/Vista onto the Linux Operating System (kernel 2.6 or above), providing Linux users with the same look and feel GUI and functionalities.

According to Dan Tian, IVT's director of windows applications, BlueSoleil has become the de facto standard for Bluetooth product interoperability: "Our new Linux version follows the same

design philosophy of BlueSoleil 5.0 : ease of use. It has hidden the complex Bluetooth concepts, with just three clicks, it allows a user to establish a connection with a local device within a single window. With all the innovative applications inherited from BlueSoleil 5.0, BlueSoleil Linux version significantly enhances the usability of Ultra Mobile PCs."

BlueSoleil Linux version supports a number of different flavours of Linux, such as Ubuntu, Debian, Moblin and Redflag. IVT also offers a dedicated team for additional GUI customisation services.

... announces its new 'Extended Range' Bluetooth portfolio

IVT demonstrated its new 'Extended Range' Bluetooth Portfolio of products for Fixed-Mobile Convergence (FMC) at Taipei Computex during June.

"The general user perception is that Bluetooth is a 10 meters Radio. 'Extended Range' added on Bluetooth Branding clarifies that Bluetooth is more than a 10 meter technology. IVT's O200 GSM phone, a feature rich, quad-bands GSM phone for world wide market, using Bluetooth Cordless Telephony Profile, can make and receive PSTN calls or IP call excess of 500 meters in open air though IVT's PSTN or SIP access points respectively," stated Fei Xu, IVT's director of embedded application.

"IVT is the first in the provision of these products, which are in mass production. IVT is currently looking expand its network of distributors, worldwide" stated Alan Buckley, IVT's Executive Technical Director.



Broadcom shows 65nm single-chip Bluetooth 2.1 + EDR solution

Broadcom has announced a single-chip BCM2070 that integrates a high performance 2.4 GHz "Class 1" Bluetooth radio for improved output power, providing a stronger radio connection between handsets and other devices such as headphones or wireless headsets. Based on 65 nanometer CMOS technology and enabling Bluetooth version 2.1 + EDR, Broadcom claims that the BCM2070 is the smallest available solution (with an innovative chip-on-board implementation enabling board space designs of less than 25mm²) and a savings in power consumption of up to 40% compared to other Bluetooth solutions.

The BCM2070 is based on multiple generations of Broadcom's Bluetooth technology and features a new RF architecture that provides key improvements in receive sensitivity and transmit output power to ensure better connectivity between mobile phone and headset products. The new chip also allows the handset to stream stereo music to multiple users simultaneously using the advanced A2DP Bluetooth profile - a feature made increasingly attractive as handsets add advanced multimedia capabilities and move to the center of the personal area network.

Additionally, the BCM2070 integrates key elements of the company's SmartAudio sound and voice enhancement technology that significantly improves the audio quality of Bluetooth links. The audio enhancement technologies in the BCM2070 include Broadcom's unique packet loss concealment (PLC) technology that reshapes audio streams, compensating for lost data packets and delivering clearer digital voice communications. SmartAudio PLC is based on the company's extensive experience and research in processing voice in voice over IP (VoIP) applications.



The single-chip BCM2070 Bluetooth baseband processor is sampling to early access customers. Pricing is available upon request.

Bluetooth star born in 1940's

Betcha didn't know this - Bluetooth technology and many other popular wireless technologies used today are modelled on a 1940's secret communication system developed by Hollywood actress Hedy Lamarr and composer George Antheil. The Bluetooth SIG has honoured Lamarr and Antheil's contribution to the invention of frequency hopping by sponsoring a play about their story called (believe it or not) Frequency Hopping, which premiered at the 3LD Art & Technology Center in New York City during June.

Lamarr and Antheil's invention is the basis of Frequency-hopping Spread Spectrum (FHSS) which Bluetooth's Adaptive Frequency-hopping Spread Spectrum (AFH) is based upon. Most would agree that AFH is at the core of the success of Bluetooth technology.

FREQUENCY HOPPING tells the tale of Hedy Lamarr who, while appearing in movies with greats like Clark Gable, Spencer Tracy and Jimmy Stewart as a Hollywood beauty, also showed her skills in math and military science by patenting a way for communications signals to rapidly switch frequencies there by thwarting any interference that may occur. The invention of frequency hopping came to Lamarr and Antheil while he was working on a way to automate control of musical instruments during WWII. Far ahead of its time, the "secret communication system" was first successfully implemented by US military ships blockading Cuba in 1962. Now, we can see the roots of frequency hopping in the development of many modern day wireless technologies.

And you really do learn something every day.



Stollmann implements Health Device Profile

Stollmann is one of the first manufacturers to implement the Bluetooth SIG's Health Device Profile (HDP) for medical devices. According to the terms of a cooperative agreement, Stollmann is now making this profile available to the members of the Continua Health Alliance, an organization of the most important global medical device manufacturers. Continua - which was discussed by Bluetooth SIG marketing director Anders Edlund in the recent movie [Bluetooth low energy wireless technology](#) - had chosen Stollmann, together with another partner, as technology leader for this project. The Bluetooth HDP was selected by the Continua Health Alliance for the wireless transmission of standard data records pursuant to the IEEE 11073 standard.

Stollmann told Incisor it is the only German manufacturer to participate in the international standardization efforts for the Bluetooth HDP for medical devices. The HDP facilitates the concurrent transmission of multiple data streams, safe wireless data transfer, and the synchronization of medical sensors, paving the way for the transmission of patient data for use in remote and local patient monitoring.

Stollmann remarked that although Bluetooth has been integrated in medical devices before, interoperability of devices made by different manufacturers has not been assured to date. The Bluetooth Health Device Profile now fills this gap by providing a standard format for medical data interchange.

Stollmann joined the Continua Health Alliance in May this year. The Alliance has more than 150 members working on application guidelines and interoperability standards for medical devices.

new products



Parrot squawk-boxes pair NFC with Bluetooth

The new Parrot Party Black Edition speakers are claimed to be the first commercialised speaker system to integrate Near Field Communication (NFC) as well as Bluetooth. They will incorporate Innovision Research & Technology's Topaz NFC Tag.

The user touches an NFC-enabled mobile phone – like the soon-to-be-available Nokia 6212 Classic – to the Parrot Party speakers to set up a Bluetooth connection and stream music live to the speakers.

The Innovision Topaz tag, built into the speaker, performs the pairing automatically, removing the need to go through pairing menus and settings – particularly useful if there are a number of Bluetooth devices within range. The speakers can also pair with other Bluetooth devices such as MP3 players, PCs and Macs, although without NFC users will still need to go through menus to pair up.

The 6W Parrott Party Black Edition speakers, which are portable and play around two and half hours on full charge, will be available in the Summer.

... and aims to raise the bar for hands-free kits

There are now many Bluetooth handsfree devices in the market, and most of them leave a lot to be desired. Sound quality and general usability rarely exceed average. Parrot has now launched Minikit

Slim, a portable Bluetooth hands-free kit aimed mainly at use in the car, and makes serious claims for its performance. Parrot also suggests it can also be used elsewhere - in the office or at home, for example,

Once paired, the Parrot Minikit Slim will automatically connect to a Bluetooth phone when nearby, and can automatically synchronise its phonebook with the contacts on a mobile phone. The phonebook can then be updated seamlessly whenever it connects.

The entire phonebook is available at all times via voice synthesis of the names (Text-To-Speech function). Parrot claims that the Minikit Slim recognises spoken names without any prior training and dials the number. If several numbers are associated with the same person, you can tell the kit which one you want to dial by saying mobile, work, home, and so on. You can also record a voiceprint (shortcut) for one of your contacts, so that you can call them even more quickly.

Rather than building in what are generally in this sector rather rubbishy speakers, Parrot has adopted vibrating panel technology. The top panel is connected to the audio circuit and vibrates to reproduce what is described as stunning sound quality, and crystal-clear conversations. A high sensitivity microphone is built into the design.

Incisor hasn't tested this product yet, so we will have to take Parrot's word for it about the sound quality. If it has achieved half what it claims, this product will stand out in a category where 'just about OK' is too often deemed as acceptable.

Motorola launches focused headsets

Motorola has announced two new Bluetooth enabled headsets, the Motorola H620 and Motorola H560. Both feature noise reduction and echo cancellation, and the H620 demonstrates a bit of focused thinking.

Motorola describes the H620 as its first ever Bluetooth headset optimized for the car. As well as noise reduction and echo cancellation technology, the volume automatically adjusts as road noise increases to deliver clear calls for both people in the conversation. Completing the car-centric aspects, it comes complete with a dashboard headset holder and rapid in-car charger. The headset also supports phone voice dialling to keep users eyes on the road, EasyPair technology and a three-color indicator light that enables users to check the battery level.

Its sister product, the H560 also has noise reduction and echo cancellation technology as well as automatic volume control. Multiple sizes of ear cushions help provide a good fit and create a seal that helps reduce background noise.

The H620 and H560 are expected to be available in Q3 2008.



Re-architecting the mobile phone via smart integration



In its 20 years in the mainstream, the cellular handset has rapidly become one of the most powerful product concepts ever invented. It is ubiquitously deployed, and is used for both work and leisure. User demands and the ingenuity of its developers have combined to see it absorb increasing numbers of complex functions.

Along the way, the humble handset has transformed itself from a “brick” to a multi-purpose device: if users had their wish, it would probably be an all-purpose device. The evidence for this shows in current and future market growth figures: it is in the smartphone and feature phone sectors that industry observers expect the biggest advances over the next five years, with the market reaching 1.1 billion units per annum by 2012.

Users’ appetite for new features has now created a further significant shift in the market. As well as requiring ever more computing power, better display technology, camera features and the like, future product differentiation will require more than a single, simple network connection. In the words of market analyst In-Stat: “Network connectivity is no longer the defining factor in differentiating portable devices. In-Stat expects more devices to connect via multiple

networks so users can be assured of finding access and selecting the preferred network based on availability, cost, speed, or other factors.”

In other words, future handsets will need to exploit a wide range of interconnection technologies in order to deliver what the user is looking for. Network connections – for example those made via 3G to the traditional bearer network or to the internet via Wi-Fi – will be just one element of the mix. To these will be added connections to other public services, such as GPS satellites for navigation.

The handset will also need to interconnect with an increasing variety of standards-compliant equipment owned by users themselves – for instance headsets and car audio systems. It will be expected to forge temporary peer-to-peer connections with “friendly” devices nearby, enabling collaboration, file sharing and the like. It may even be used for proximate communication in applications such as security and access control, electronic payment systems and e-ticketing on public transport.

Technological solutions and industry standards that realise all of these feature combinations – and more – are already defined. But actually fitting these functions into a market-ready end-

product, against the traditional portable device design constraints of cost, size and power consumption, is a tall order indeed.

And, just as users are demanding more features from manufacturers, so handset designers are turning to silicon suppliers to solve these pressing integration problems. With its leadership position in the Bluetooth market and unmatched expertise in a wide variety of standardised short-range wireless technologies, CSR is uniquely equipped to rise to this challenge by leveraging its position as the leading supplier of Bluetooth technology and its advanced portfolio of relevant IP. The company is driving the development of an entirely new category of IC – the wireless connectivity centre – to enable the creation of this next generation of handset products.

The wireless connectivity centre offers dramatic potential, both in creating new products and making it easier to implement existing feature set combinations. By sharing resources and integrating complementary wireless functions, CSR has created a multi-purpose IC that expands the available feature set, with minimal impact on handset size, battery life and system cost. And, by solving many of the underlying integration problems, CSR’s wireless connectivity centre frees



handset designers to focus on innovation in their own field, and to implement value-added features that differentiate their end products.

Bluetooth technology is itself central to this vision, because Bluetooth is at the centre of short-range wireless communication systems within the handset. It already boasts an attach rate in excess of 50%, and is expected to reach 60% by the end of 2008. It is therefore the best technology around which the newer wireless interconnection techniques are likely to be grouped.

It is worth noting that the creation of the wireless connectivity centre does not imply an "integrate everything" approach. Two fundamental issues determine exactly what

gets integrated into a single solution: first, market need; second, technical feasibility.

For example, most end users recognise the value of a handheld device that provides GPS-type navigation services: a capability that can be incorporated into a wireless connectivity device at negligible cost, and with considerable savings in end-product size. In contrast, combining wireless technologies with widely differing attach rates, or which appeal to very different market segments, will probably serve only to waste money and power.

The wireless connectivity centre is already a reality. CSR's BlueCore7 uniquely integrates Bluetooth, Bluetooth low energy, eGPS, FM

receive and transmit, as well as digital circuitry, RAM and ROM. Meanwhile, technologies such as UWB (ultra wideband) and NFC (near field communications) are already defined as standards, and are showing their potential to help satisfy users' demands for added features.

With the help of advanced semiconductor technology and the integration expertise of CSR, handset makers will be empowered to create the next generation of products; wireless technology is enabling the expansion in feature sets that consumers have come to expect.

sponsored contribution

Bluetooth low energy wireless technology

- Newest addition to the Bluetooth family

Fiona Thomson,
Research Director,
Connectivity Group,
IMS Research



Well, it's not exactly new anymore: formerly Wibree and formerly Ultra Low Power Bluetooth technology, I feel like this technology has already been around the block and the specification hasn't even been defined yet!

The Bluetooth SIG has prioritised sports & fitness, healthcare, the digital watch and mobile phones as Tier One devices for Bluetooth low energy technology. However, here at IMS Research we predict that it will be the cost of solution (or rather the lack of it) that will drive the market as opposed to the use cases, at least in the short-term.

Realistically if it all goes to plan, and the specification is defined during 2009, we will see a small amount of silicon in 4Q09. Considering design cycles and the like, IMS believes it will be 2010 before Bluetooth low energy enabled devices get into the hands of the consumer.

The industry is hoping that dual-mode and single-mode Bluetooth devices come to market in sync. However, if this doesn't happen (and there is a 'chicken and egg' situation) IMS believe that the quickest route to market for the technology is for dual-mode devices to adopt first. We already estimate that the ASP of a Bluetooth IC for a mobile phone is sub \$2 in 2008. Where dual-mode ICs are replacing core Bluetooth ICs, we estimate volumes will increase exponentially.

The single-mode devices are likely to be slower and that comes down to education: Bluetooth technology has not traditionally been used in heart rate monitors, cycling computers and watches. Bluetooth technology really took off when consumers started to demand the technology, when they started to differentiate between those handsets with Bluetooth technology and those without.

It is education and retail promotion that will encourage consumers to go out and buy a single-mode device to work with their dual-mode device. What we don't want to see is a significant majority of consumers owning dual-mode devices and not taking advantage of the low energy part of the solution.

Single-mode Bluetooth low energy technology uptake is partly dependant on the attach rate of dual-mode ICs to mobile phones. Manufacturers of potential single-mode enabled devices and proprietary IC vendors would like to see dual-mode Bluetooth ICs made compulsory, which would (after a transition period) eliminate core Bluetooth ICs. Should core Bluetooth ICs and dual-mode Bluetooth ICs merge into one, dual-mode will automatically become compulsory. However, this will be decided over time and is dependant on the uptake.



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An introduction to Bluetooth low energy wireless technology
CSR BlueCore7 - The Wireless Connectivity Centre

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A FINGER ON THE PULSE OF WPAN



The Royal Affairs: When Bluetooth met UWB, Wibree and NFC

by Dean Anthony Gratton

The national and international press have afforded most of us the sensationalised revelations of royal marriages and their respective successes and failures. It seems that the press are always eager to see one trip and fall spectacularly in front of those fervent quick-fingered photographers. Alas, it's a comfort to know that royals are indeed human after all. As for Bluetooth's King Harold leading to a tenuous royal connection, it's hard to fictionalise who should take the female lead in this article? As we look at Bluetooth's explicit affairs, we of course, can visualise Ultra Wideband as a technology with a strong masculine stature: such power and strength, right? With Ultra Wideband alone, perhaps this article should have been titled 'Brokeback Wireless: When Bluetooth met UWB' (Ed. - Dean, leave it! Your continued train of thought will deem this article as unpublished!). Anyway, moving on and using the analogy of a fairytale romance, surely we can visualise what was Wibree – now low energy Bluetooth – as a dainty female with a softly spoken voice and an intuitive ability to always say the right thing. Likewise, Near Field Communications (NFC) could also be seen to have a fragile feminine demure, with a graceful presence possessing such a delicate touch.

The Bluetooth royal affair is a really simple fairytale to tell; it's clearly about the royal marriages of Bluetooth and Ultra Wideband and low energy and NFC (such energy!). As for the royal connection – you don't really need to ask, do you? In fact, how did they all actually hook up? It may have been just gossip – you know, that rumour mill supported by the press and its persistent sensationalism or perhaps something may have become lost in translation when the happy couples were first introduced? Who knows, but more importantly where are they now?

The dating game

Before looking at their current marital statuses, let's take a look at how the whirlwind romances evolved. More specifically, what did they really see in each other or was it marriages of convenience with a motivation of what can you do for me? With a turbulent foundation, the Bluetooth royal struggled to find his way in the wireless sphere – if we were to use a modern day comparable we could liken the young Bluetooth royal to a gawky Prince Edward! In a similar manner, Bluetooth was extremely keen to impress others and very eager to please, offering a multitude of profiles that would fit most consumers' expectations. What's more, in Bluetooth's early days it struggled to offer data rates that exceeded the 1Mbit/s barrier – a more realistic and modest 721Kbit/s was always theoretically available to most applications. Who can forget that Bluetooth has the possibility of connecting to seven devices simultaneously, all managed by a master device. Naturally, this would in fact divide the theoretical offering of 721Kbit/s by seven. Even today, with Bluetooth's v2.1 +Enhanced Data Rate (EDR) purporting data rates of up to 3Mbit/s it still lacks the oomph required to compete with technologies like USB or 1394 (Firewire).

Obviously, the Bluetooth Special Interest Group (SIG) has grandiose expectations of its nowadays more mature Bluetooth royal. Bluetooth wireless technology needs to penetrate a wider market to maintain its success – look at Bluetooth low energy wireless technology, for example – as an evolutionary step towards wider prevalence. But then there are other features that have made Bluetooth an attractive alternative to cable technology – after all, let's not forget Bluetooth is still a cable replacement technology. Its marriage with Ultra Wideband was deemed as convenient – a relationship which would

clearly enhance King Harold's already attractive feature list (such magnificent jewels!). Likewise, Ultra Wideband would naturally piggyback the already successful career of Bluetooth wireless technology. It almost feels as if something was in the air which brought these two technologies together (groan!).

Of course, low energy Bluetooth has emerged as a consequence of a marriage between Bluetooth and Wibree (initially developed by Nokia). Wibree emerged in 2006 with Nokia announcing an open industry initiative to wirelessly enable small devices that would only consume a fraction of the energy when compared to its power hungry competitors. Nokia felt that the industry lacked a real low power wireless alternative and in 2007 the Bluetooth SIG announced the convergence of Wibree into the Bluetooth royal family.

How many partners is too many?

With the marriages confirmed between Ultra Wideband and Wibree, some may argue that this is a bigamist move and how can the King possibly get away with this? Most of us should know that bigamy is traditionally unlawful in Western countries and whilst many (probably limited to men only) might enjoy the privileges bestowed by a polygamist relationship, we obviously forget that ultimately we are not royalty. Nonetheless, the relationships conquered by Bluetooth naturally encapsulate two extremes within the wireless domain. On one hand, Bluetooth low energy wireless would start to address applications, such as home automation, security and control – something, which ZigBee allegedly supports, but with Bluetooth's low energy alternative this should finally place that nail in ZigBee's coffin. Bluetooth's low energy doesn't seem to be limited to just smart home applications. With the prospect of low energy devices we could



start to envisage the technology becoming integrated into health care systems. In fact, Incisor's May 2008 issue also featured a story about CSR and the future of health applications along with the development of a new Health Device Profile (HDP). It's clear with CSR's first demonstration of low energy technology and its shipment of over one billion chipsets the King has no intention of stepping down from his throne. Bluetooth's reign over the consumer electronic and health care markets will undoubtedly increase exponentially, as CSR seeks to conquer the SIG's new objective by 2011 to deliver two billion chipsets in one year by 2011. And let's not forget, on the other hand, but more curiously, in converging Ultra Wideband and Bluetooth we should witness an onslaught of applications that will finally compete with Wi-Fi and its 802.11n offering. Is there something we're missing here?

Naively, many industry analysts argued that Bluetooth and Wi-Fi were complementary, but looking more intently and reading between those radio waves, we surely see Wi-Fi and Bluetooth vying for the same market. Nevertheless, we are witnessing a secret war with an elite trophy at stake: single wireless dominance – an ideal, where one wireless technology will suit all your wireless needs! Actually, that is something that Incisor purported back in December 2007 (Ultra Wideband: A Personal-area Networking Phenomenon) we suggested that with Ultra Wideband we can easily envision a "wireless 'one-size-fits-all' technology". However, the Bluetooth royal's ingenious strategy to take Ultra Wideband into his private quarters and become ultimately integrated into the rumoured Bluetooth v3.0 royal family is clearly a logistical move that will secure Bluetooth's new founded wireless popularity. The notion of Ultra Wideband as a technology alone will soon stand in the shadow of the Bluetooth King, just like Wibree. Ultra Wideband will of course continue to support Wireless USB, but again the underlying technology supporting the radio medium will ultimately fade (as it should), as the end application should prevail.

Bluetooth needs that oomph and Ultra Wideband will afford the King that striking ability to deliver high-end audio and video-centric applications with theoretical data rates of up to an amazing 480Mbit/s. Bluetooth is surely reigniting its founding belief, as a cable replacement technology and with its inevitable success, as a consequence of its strategic partnering with other wireless technologies, we will begin to see those cables truly fading away.

Come close, but don't touch ...

But what about NFC? Of course, NFC will ultimately become the significant jewel in the King's crown. It has been mentioned several times before and it should be mentioned again: when you take the cable away from a product you will add an unmeasured sense of complexity, see A Touch of Genius: Wi-Fi Protected Set-up also in Incisor's May 2008 issue. The cable bestowed a product and the consumer an intrinsic security feature – take it away, we then have to provide alternative security mechanisms to overcome attacks from unwanted predators. In addition to Bluetooth's v2.1 +EDR increased data rates, it also boasts new improvements for pairing and increased encryption mechanisms. The Bluetooth specification also extends to the possibility of NFC being used to help with the automatic creation of secure connections when bringing two products in proximity. For example, with the mobile phone and headset topology, consumers will merely bring the products together to create a secure connection.

Currently, consumers use a passkey, which is agreed upon prior to connecting a device, but NFC aims to simplify the whole connection procedure. NFC's ability to provide inherent security for wireless-enabled products is not just limited to Bluetooth, as you may have seen in last month's Incisor issue. Other applications include the ability to transfer, say an image from a mobile phone, to a monitor. NFC is used to initially instigate a secure connection, but Bluetooth would be used to actually transfer the image.

Obviously, Bluetooth wireless technology can nowadays deliver a more realistic wireless acumen, as a consequence of its strategic partnering with Ultra Wideband, Wibree and NFC. Despite its immature foundation, Bluetooth has forged ahead and continued to lead a market where Bluetooth wireless technology has become synonymous with cable-free connectivity. The pulsing blue LED is testimony to a trend, a fashion in fact, that has been widely adopted by generations of consumers. It seems the future is bright for the Bluetooth King: the wireless future has a flashing blue LED.

Snippets

Transfer of Nokia's line fit automotive business to novero GmbH completed

Nokia's line fit automotive business in Bochum and Düsseldorf, Germany, and Detroit, USA has been transferred over to novero. novero is owned by Razvan Olosu, the former head of Nokia's Automotive business and Enhancements unit, and Equity Partners GmbH, a German private equity firm. With this transfer novero assumes full ownership of the line fit automotive business, effective June 16, 2008. As part of the agreement, approximately 230 employees of the line fit automotive business all get to keep their jobs.

Deep joy for 1st gen iPhone customers. Not.

Here's some news to wipe the smiles off the faces of all of those smug iPhone owners. The iPhone 3G, which offers a spec somewhat nearer to what most people believe the iPhone should have had from day one, has been announced by Apple and will go on sale in 70 countries on July the 11th. What's more, with a view to selling 10 million iPhones this year, Apple CEO Steve Jobs announced a lower price as well as a raft of new applications and features. The iPhone 3G will go on sale starting at \$199. As well as 3G, other new features include built-in GPS, longer battery life and a subscription mobile Web service dubbed MobileMe that can synchronize information over a number of devices.

Never forget the maxim: don't buy first generation products unless you want to get bitten!

Bluetooth

SIG makes product listing compulsory

The Bluetooth SIG Board of Directors has approved a proposal that makes it mandatory for every product implementing Bluetooth technology to be listed on the Bluetooth SIG End Product Listing (EPL). Mandatory listing of products came into effect on the 5th June, and applies to all members of the Bluetooth SIG.

The aim is to make the EPL the authoritative place for consumers and manufactures to find all qualified Bluetooth enabled products.

uwb / wireless usb news



Pulse-Link zaps Tzero

Regular Incisor readers may remember that we reported that UWB company Pulse-Link had become involved in a spat with Tzero Technologies over what Pulse-Link saw as an infringement of its UWB-Over-Coax patents. Well, the United States District Court, Southern District of California, has ruled that Pulse-Link patents 6,895,034 and 7,099,368 are valid and enforceable. The judgment was announced as part of a settlement agreement between Pulse-Link and Tzero Technologies.

Federal litigation against Tzero alleged that, by making, using and selling UWB-Over-Coax solutions, Tzero was violating Pulse-Link patents which are fundamental to UWB communications over wired media such as coaxial cable, power line and phone wires. In the settlement, Tzero affirmed it had suspended development of products that were the subject of the legal action, and agreed that before re-introducing any such product it would obtain a license from Pulse-Link. Which (Pulse-Link), very magnanimously, and presumably with no smirk on its face at all, has agreed to grant Tzero a fair and commercially reasonable license in the event Tzero requests such a license in the future.

"The ratification of our IP rights by a federal judge is extremely significant and a positive milestone for all innovative start-up companies who invest millions to invent and productize their technology," said John Santhoff, Pulse-Link co-founder and CTO. "We have made an ongoing and massive investment into building the world's most comprehensive UWB Intellectual Property portfolio in order to ensure that the vision for whole-home multimedia networks could be properly delivered to the greatest benefit of consumers and the industry."

Though deeply embedded in UWB, most of Pulse-Link's recent effort seems to have

been applied to developing UWB-Over-Coax solutions rather than wireless. Incisor profiled Pulse-Link way back in our [October 2005 Wireless in America special issue](#). At that time, this left-of-centre UWB company was doing some interesting stuff with video over very high data rate (1Gbps+) wireless UWB technology. It's probably about time for an update.

Alereon announces W-USB solutions for home and office

Alereon is showing a range of reference designs for Wireless USB applications. Included are the Worldwide PCIe Half-MiniCard and Worldwide PCIe ExpressCard/34 reference designs for host laptops; and the Worldwide Wireless USB Graphics Adapter reference design for device solutions. The new reference designs are compliant with both the WiMedia and Certified Wireless USB specifications along with the Windows Premium Logo Program utilizing the Windows Host Controller Interface (WHCI). The PCIe Half-MiniCard and ExpressCard/34 designs feature the Alereon AL5350/AL5100 Wireless USB chipset with PCIe interface. Alereon's AL5000 family of products operating in WiMedia band groups 1, 3, 4 and 6, thereby providing OEMs and ODMs with a single solution that can meet the regulatory requirements in any country via software configuration.

Features of the AL5620 Graphics Adapter include support for DVI or VGA output for resolutions up to 1680x1050, and 16.7 million colours.

The AL5708 Worldwide PCIe Half-MiniCard, AL5705 Worldwide PCIe ExpressCard/34 and the AL5620 Worldwide Wireless USB Graphics Adapter are currently available for initial sampling.

WiQuest ships W-USB stereo drivers for XP/Vista

WiQuest Communications is claiming to be the first company to ship Wireless USB software driver solutions supporting stereo and 5.1 Surround Sound audio for Windows XP and Windows Vista in its latest release – Version 1.4.

"Wireless USB audio is a required feature on new multi-media devices such as Wireless Docking Stations and multi-media hubs to provide high-quality audio on your desktop, wirelessly," said Todd Brown, WiQuest's VP of sales.

WiQuest supports Windows Isochronous USB Audio. Isochronous audio transfer is an optimized technique for allowing audio data packet streaming from notebooks to widely-deployed wired USB speakers. It is now available for the first time to enable Wireless USB devices to wirelessly transfer high-end audio from notebooks to USB speakers.

WiQuest's solution includes associated device drivers for both Windows XP and Windows Vista. Version 1.4 also includes the new icon-based WiQuest Control Center (WiCC) and ease-of-use enhancements. Version 1.4 is shipping to customers now.

Coming in July 08

WiMedia special issue

All the latest developments in UWB

Featuring – Artimi, Intel Staccato Communications, WiMedia Alliance, WiQuest, Wisair

zigbee / 802.15.4 news



Freescal unveils single-chip 802.15.4/ZigBee Platform-in-Package

Freescal Semiconductor is now sampling the MC13224 device, a single-chip 802.15.4/ZigBee Platform-in-Package (PiP) solution.

The MC13224 is designed for a range of wireless applications, including energy management, commercial building automation, industrial control and monitoring and home entertainment control. It supports existing protocols, such as SMAC, IEEE 802.15.4 MAC, ZigBee stack and Synkro™ network protocol stack, with the ability to support the WirelessHART specification, ISA100 and 6LoWPAN.

The MC13224 contains a 32-bit ARM7 microcontroller (MCU), an 802.15.4 transceiver, flash, RAM and ROM, peripherals, balun and RF matching components. This is all integrated into a small-footprint land-grid array (LGA) package.

"We've seen high demand for our IEEE 802.15.4/ZigBee Platform-in-Package family as wireless applications such as home entertainment control, smart energy, industrial and process control and monitoring continue their rapid growth," said Brett Black, manager of Freescal's Wireless Connectivity Operation. "Our customers need a platform solution that helps them get to market quickly so they can keep pace with this growth and be ready to develop the applications that could be next. With the designer's needs in mind, we developed the MC13224 as a solution that provides high-performance functionality and industry-leading integration at a cost-effective price point."

MC1322x development kits are available now. Production quantities are expected to



be available in September. Suggested resale pricing for the MC13224V in 10K resale quantities is US\$4.99.

Your Toblerone is now ZigBee-enabled

Ember seems to have decided that the hotel and hospitality market is a ripe picking ground for ZigBee. In last month's issue of Incisor we reported how it was ZigBee-enabling hotel room doors. Now we learn that it has teamed-up with Bartech, an automatic minibar systems specialist to provide hotels with real-time status and charges from in-room minibars.

Typically, attendants in hotels have to "blindly" visit every room to check on inventory and replenish minibars. But Bartech's Web-based dot.net software can now report which products need to be replenished in a specific room. Additionally, minibar doors can be automatically locked and unlocked at check-in or check-out times, and the staff automatically notified of any malfunctioning cooling units. The Bartech system also monitors the shelf life of any products in or outside the minibar for freshness based on expiration dates.

Property managers can remotely monitor the system's temperature and control the cooling units to save cost based on variable energy rates. They can remotely adjust temperature levels in any refrigeration unit according to the status of each room (occupied or vacant).

Bartech's ZigBee enabled mesh networking systems use Ember's EM250 system-on-chip (SoC) and EM260 network co-processor along with the EmberZNet PRO platform. It also implements security features using 128-bit keys (Link and Network keys) to secure all minibar communication throughout its ZigBee networks.

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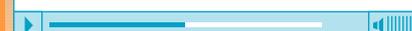
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wi-fi / 802.11 news



Wi-Fi Alliance claims continued growth for 'spec-Lite' 802.11n

Now, Incisor has questioned the concept of a 'draft' specification many times. You either have a spec, or you don't. And if you allow products to come to market based around a draft spec, there is endless potential for trouble. Just think interoperability problems, short-termism and in-built obsolescence, support issues – and maybe even a total lack of support. But it is under just such a set of guidelines that 802.11n has come to market, under the management of the Wi-Fi Alliance.

Perhaps keen to reinforce the validity of the .11n proposition, and one year after it introduced the 802.11n draft 2.0 certification, the Wi-Fi Alliance tells Incisor that the upward trajectory of this next-generation Wi-Fi technology continues unabated. Apparently, nearly 50 percent of Wi-Fi chipsets sold this year are expected to adhere to the new draft standard - double the number from 2007.

To date, the Wi-Fi Alliance has put the Wi-Fi Certified seal of approval - indicating validated product interoperability - on 325 products and says it is seeing strong numbers of 802.11n draft 2.0 products presented for testing.

The products which have been Wi-Fi Certified to date in the program span both traditional PC networking gear and consumer electronics. Televisions, media servers, and gaming devices are among the products certified in the first year, and nearly half of the products also support Wi-Fi Protected Setup, which eases the process of configuring and protecting a home Wi-Fi network.

"Across the board, and with a range of consumer and enterprise devices, we are

seeing a real hunger for all things 802.11n draft 2.0," said Edgar Figueroa, executive director of the Wi-Fi Alliance. "The standard has redefined the wireless experience, enabling streaming video, gaming, and other media throughout the home, while enabling advanced applications in enterprise networks. Wi-Fi Certified delivers a great user experience with a wide range of Wi-Fi products."

By any low-level assessment, this sounds like a success story. However, it doesn't really let the Wi-Fi Alliance off the hook for not nailing this unruly situation. Vendors may have been overly keen to sell new kit to their customers, but there is still potential for a major pratfall if someone decides something needs to change within the spec - let's face it, this has happened many times before. Will those customers be happy then, with their out of date, non-compliant, unsupported product?

Oh, but of course, there will then be an opportunity to sell them new kit that complies to the finally ratified 802.11n specification. Suddenly all is clear A cynical industry? Surely not.

Broadcom shows single-chip 802.11n USB solution

Broadcom is claiming it has the world's first single-chip dual-band 802.11n solution for universal serial bus (USB) adapters (Ed. - when will companies stop doing this – claiming 'world's first' with every press release? They know it is pretty much impossible to verify such a claim. Which, presumably, is why they do it). Anyway, the newest member of Broadcom's Intensi-fi XLR wireless LAN (WLAN) family apparently enables very small and cost-effective (er, we're being subjective here again) USB adapters

that consumers can use to connect PCs, TVs, set-top boxes, personal video recorders, and other devices to a Wi-Fi network. The new Broadcom dual-band chip also features the company's Accelerange technology to provide the wireless performance and range that is required to transfer high-definition (HD) content between devices throughout a home.

Broadcom quotes ABI Research, which says that annual shipments of Wi-Fi USB adapters will reach 15 million by 2011. A majority of these will be dual-band 802.11n adapters, to serve the growing number of consumers who are using the 5 GHz portion of their wireless network for video streaming and voice over IP (VoIP) calls. With greater network capacity and less interference than the 2.4 GHz band, the 5 GHz band is ideal for multimedia applications that require higher bandwidth, more robust signals and lower latency.

Broadcom's single-chip BCM4323 USB solution uses 65 nanometer (nm) CMOS and enables 20mm x 52mm USB modules, while high integration and the resulting low bill of materials (BOM) cost mean that manufacturers can build dual-band 802.11n USB adapters with form factors and price points that are, says Broadcom, comparable to most of today's single band 802.11n adapters. The BCM4323 also features an integrated ARM(R) processor and on-chip RAM that can offload wireless functions from the host processor in consumer devices. This enables manufacturers to embed dual-band 802.11n capabilities directly into multimedia products, such as digital TVs, set-top boxes and DVD players.

wi-fi / 802.11 news



Wi-Fi in Consumer Electronics: what will the future bring?

From the home, to coffee shops, to large universities, wireless access points and routers have made Wi-Fi available in practically every type of environment. With this widespread availability, Wi-Fi is being embedded into many types of consumer electronic (CE) devices. Some categories, such as handheld gaming devices have flourished, while other devices have been slower to catch on, according to Jonathan Gruber, Research Analyst at market research company In-Stat.

Portable CE devices showed the strongest growth of embedded Wi-Fi. Presently, handheld gaming devices are the largest category, with market leaders Nintendo and Sony shipping over a combined forty million units in 2007. Online and multiplayer games are driving the inclusion of Wi-Fi in these devices.

In-Stat expects the attachment rate of Wi-Fi in cellular handsets to increase significantly. Apple opened the door with the introduction of the iPhone in 2007. In 2008, top vendors say that at least 50% their smart phone models will have Wi-Fi.

In stationary CE, gaming consoles have the largest percentage of Wi-Fi attachment. Two of the three major gaming console vendors include Wi-Fi in their current device and the third adds an adapter for an additional price. Nintendo and Sony, again the market leaders, shipped over twenty-seven million units in 2007. With all three vendors including Wi-Fi in their next generation of consoles, this category should continue to see strong growth.

The speed and bandwidth capabilities of 802.11n will drive Wi-Fi's success in stationary CE. Media adapters will surely benefit from the introduction of 802.11n. With the amount of video content available for download and the popularity of high definition televisions, media adapters will be essential for streaming this media from screen to screen. In 2007, all major WLAN vendors -- Linksys, NETGEAR and D-Link -- released models.

Despite the growing popularity of Wi-Fi in CE, the popularity of some devices is still up in the air. Although every major printer vendor has released a model with embedded Wi-Fi, there has not been broad market acceptance. In addition, Portable Media Players (PMP) with Wi-Fi showed promise, but high prices, competitive technologies, and limited capabilities may have caused these devices to slow presently. Wi-Fi embedded PMPs accounted for less than 3% of overall shipment numbers for 2007.

Anritsu partners with WLAN chipset vendors

Anritsu Company's new MT8860C WLAN Test Set is a fully integrated test solution that performs high-speed radio layer measurements on IEEE 802.11 WLAN chip sets. The MT8860C combines the capabilities of a power meter, spectrum analyzer, and vector signal generator to provide designers and manufacturers with a single instrument that performs traceable and repeatable measurements on WLAN devices to ensure they are in full compliance with the IEEE 802.11-2007 standard.

The MT8860C's Network mode capability uses standard WLAN protocol messaging is used to test both the transmitter and receiver of a device under test (DUT), and eliminates the need for control software from the chipset vendor. Network mode simplifies the measurement set-up and allows any WLAN device to be tested in a mode that closely reflects its native operation. Anritsu believes this is especially important when testing the new generation of portable consumer products, such as digital cameras, smart phones and PDAs, where the WLAN technology is embedded inside the end product.

Anritsu has developed LANTest software with DUT control packages in partnership with leading WLAN chipset vendors to provide a fully automated PC application for rapid testing of WLAN devices without manual intervention.

nfc / rfid news



Innovision launches next-gen NFC/RFID tag platform

Innovision Research & Technology has launched a next-generation NFC/RFID tag platform offering up to 2Kbytes of memory. It is intended to meet demand for high volume, small size, lower cost RFID/NFC tags for integration into smart objects.

The additional memory sizes in the platform have increased from today's 96Bytes up to 512Bytes and offer faster read/write/test operation speeds. Innovision claims that these meet or exceed the data storage requirements for all anticipated non-payment NFC applications, including peer-to-peer connectivity, service initiation and Smart Posters. These larger memories will also allow developers to use digital signatures for more secure RFID/NFC applications.

Innovision's latest tag IC platform is also capable of providing on-chip capacitance up to 250pF in some cases to support miniature antenna designs, which enable the small RFID/NFC tag form factors. The platform is both backwards-compatible with the company's existing Jewel and Topaz RFID/NFC products, and forwards-compatible for new releases of consumer products meeting the NFC minimum level of interoperability (MLOI) specifications. First samples of product based on the platform are expected to be available in the second half of 2008.

NFC Forum announces competition winners

The NFC Forum has announced the winners of its Touching the Future: NFC Forum Global Competition, which has been previously featured in Incisor.

In the competition, developers in a Commercial Track vied for the honour of having their solutions named "The Best NFC Service of the Year 2008," while a Research Track recognized "The Most Innovative NFC Research Project of the Year 2008."

The first-place winner in the Commercial Track is VingCard Elsafe of Norway for its "Signature RFID by VingCard - Electronic Lock for Hotels." This solution enables hotel guests with NFC-enabled mobile phones to completely bypass the check-in process and unlock their hotel room doors using their phones.

The first-place winner in the Research Track is Lancaster University of the UK for "Touch & Interact: Applied to a Tourist Guide Prototype." This project uses NFC technology to allow mobile phone handsets and public information screens to share display space, thereby overcoming the screen size limitations of mobile phone displays.

Market for RFID is vibrant as demand grows

According to IDTechEx, the organisers of the forthcoming 'RFID Europe' conference, the global RFID market continues to grow as record orders of up to \$0.5 billion each are serviced. This year IDTechEx predicts sales for RFID will be \$5.3 billion and will reach \$27 billion by 2018.

Recent substantial additions to the global RFID order book include A\$350 million from the State of Melbourne to boost its public transport RFID card scheme and a forecast by transport analysts that the national RFID card for transport project that is being progressed in the UK will cost \$2 billion.

Indeed, much is now happening in Europe, although it is the US and China that share top slot as RFID spenders at present. For example, also in the UK, Raytheon, partnered with Serco, Accenture, Detica, QinetiQ, CapGemini and Steria has received an additional \$184 million for the infrastructure of the UK RFID e-passport scheme.

US analyst Baird has noted that retailer Metro in Germany has taken leadership in introducing RFID into general retailing now the Wal-Mart schemes have slowed. However, it is in apparel that there is a huge surge across the world and this is covering everything from tracking the bolts of cloth in the factories to pallets, cases and above all individual items of clothing, where Marks and Spencer is world leader, with approaching 350 million tags used yearly.

New handheld RFID reader

Intermec has introduced the IP30 add-on RFID reader, a solution for adding mobile RFID read/write capability to the latest generation of Intermec mobile computers – including the CN3, CN3e, CK61, and CK61ex.

Through a combination of data collection methods, GPS location association, and communication via multiple radios, the IP30 delivers mobile RFID read-write capability both within buildings and outside of them. The IP30 can be purchased with or added to an existing installed base of CN3 Series or CK61 mobile computers.

In addition, when the IP30 is combined with the Intermec CK61ex, it is a handheld RFID system with an integrated near/far barcode imager, enabling users to scan both 1D and 2D barcodes from a variety of distances up to 50 feet.

events



DATE	EVENT	LOCATION	NOTES	LINK
July 10 - 13 2008	International SinoCES	Qingdao, China	-	www.sinoces.com/en/index.aspx
Sept 10 - 12 2008	IEEE International Conference on Ultra Wideband	Hanover, Germany	-	http://www.wimedia.org/en/events/events.asp?id=events
Oct 6 - 10 2008	Bluetooth UnPlugFest 31	Budapest, Hungary	-	https://www.bluetooth.org/Events/sig_events.htm
Nov 4 - 6 2008	Bluetooth Developers Conference	COEX Convention & Exhibition Centre, Seoul, Korea	-	https://www.bluetooth.org/Events/sig_events.htm
2009				
Jan 8 - 11 2009	International Consumer Electronics Show	Las Vegas, Nevada, USA	-	www.cesweb.org
Feb 16 - 19 2009	Mobile World Congress	Fira de Barcelona, Spain	-	www.mobileworldcongress.com
April 1 - 3 2009	CTIA Wireless 2009	Las Vegas Convention Centre, Las Vegas, Nevada, USA	-	www.ctiawireless.com
Oct 7 - 9 2009	CTIA Wireless I.T. & Entertainment 2009	San Diego Convention Centre, San Diego, California, USA	-	www.ctiawireless.com

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