Wireless Developer Network

Microsoft® Tech Zone
Freescale Partners
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Freescale and Microsoft

Building a mobile device presents a host of engineering challenges, including more features in smaller form factors, low power consumption and great performance for mobile multimedia and other processor-intensive tasks. Freescale can help you meet those challenges with a wide range of components for the wireless communications and mobile entertainment markets. With the most mature communications and applications software suites in the industry, Freescale delivers a comprehensive portfolio of fully integrated platforms and components for cellular, mobile consumer and converged devices.

Wireless Developer Network
Combining resources from Freescale and industry leaders, our Wireless Developer Network offers advanced pre-integrated platforms and solutions that work out-of-the-box, accelerating your business and giving you a competitive advantage. The Freescale Wireless Developer Network is a global program designed to bring complete platforms to market that include hardware and software solutions, tools, systems integration, consulting and other services. With early access to improved tools, Freescale Wireless Developer Network members are better equipped to deliver mobile wireless solutions to a global audience in less time, with less effort and at a lower cost.

Microsoft Support
Freescale and our partner companies support Microsoft operating systems on a number of components, including the i.MX family of applications processors. This brochure highlights the innovation of Freescale Wireless Developer Network partners who use Microsoft to strengthen each company’s portfolio.

Freescale is pioneering and perfecting the wireless technologies behind your next great design. Few companies have the legacy and experience that we do, and we continue to invent and innovate. Our strong and deep semiconductor platform portfolio leads the way with innovative solutions for cellular, mobile multimedia, infotainment and wireless connectivity.
AMD Imageon™ Media Processors
AMD rings in a new era of growth, innovation, and choice

AMD Imageon media processors provide support for various multimedia capabilities, from entry-level camera/music phones to high-end camcorder, 3D gaming and mobile TV devices. They are architected to enhance the capabilities of baseband processors with support for various operating systems.

Imageon media processors are shipping in over 50 mobile phones worldwide—over 200 million units. The majority of them are coupled with Freescale baseband processors to bring high quality audio, up to 2 megapixel camera and camcorder solutions.

3G phones with Imageon media processors are shipping in Europe and Asia with support for Microsoft® Windows Mobile® 5.0. These phones support video telephony with AMD’s Advanced Echo Cancellation solution.

New Imageon processors, currently sampling with OEMs worldwide, provide support for:
• Up to 12 megapixel camera
• 30 fps D1 resolution Windows Media Video (WMV9) playback
• Industry's best 30 fps D1 resolution full-hardware H.264/MPEG4 video capture and playback
• Mobile TV (DVB-H/DVB-T) broadcast reception
• Integrated NTSC/PAL TV-encoder for direct connection to TV
• All popular audio codecs (over 30 audio components available)
• The worlds fastest and feature-rich mobile 3D for more realistic mobile gaming
• Support for Windows Mobile and WinCE operating systems

Through leading-edge innovative products, strong strategic partnerships and alliances, Imageon, Freescale and Microsoft® are empowering simplified platforms and APIs to enable faster adoption of next-generation digital camera, music, video and 3D gaming features.
Audistry by Dolby
Introducing a brand new sound

It's your life. It's your music. It's your call.

You choose the music that you listen to, you chose what you want to watch. Now you can choose the way that you listen to it. With the press of a button Audistry enhances sound, making it richer, bigger and better. You can then personalize Audistry features to experience music and movies the way you like. So whether you’re listening to your digital audio player or your TV, a mobile phone or a home stereo, you decide exactly how you want the sound to be.

“Audistry by Dolby” is an innovative and sophisticated set of features that provides an exceptional and individual listening experience so you can hear sound and music the way you like it.

Audistry’s highly sophisticated technology has the ability to dramatically improve the audio performance of electronic products.

Sound is such a personal thing. So to ensure you hear it the way you like it, Audistry puts you in the control seat, giving you five ways to tailor sound to your liking:

- Sound Space Expander
- Sound Space for Headphones
- Intelligent Volume Control
- Natural Bass
- Mono-to-stereo Creator

Audistry determines critical audio quality factors, then designs and engineers Audistry’s features so that they work perfectly together when used in any combination. Audistry then takes advantage of the processing power of Freescale processors, such as the i.MX21 and i.MX31 applications processors, to deliver audio features that will improve a consumer’s overall entertainment experience in a mobile device.

Audistry features run in an integrated efficient low-footprint package on the i.MX21 and i.MX31. Simple APIs support integration into video and audio applications running on the Microsoft Windows Mobile platform. The APIs support intuitive GUI control of Audistry features to people enjoying content on their Windows Mobile powered device to “hear it the way they like it.”

Mobile devices are increasingly becoming centers of mobile entertainment. As more users seek out more content on these devices, they will look for gripping entertainment experiences. High quality audio and compelling audio effects are a critical part of creating those experiences.

To experience Audistry, please contact us for a demonstration now of an Audistry powered music player on the Freescale i.MX platform running Windows Mobile.
BSQUARE’s Windows® Embedded CE 6.0 Feasibility Study

BSQUARE’s Windows® Embedded CE 6.0 Feasibility Study enables companies to develop a successful Windows Embedded CE 6.0 migration strategy with Freescale Semiconductor’s i.MX family of applications processors. The Feasibility Study is ideal for OEMs planning to build and ship:

- Smartphones
- Portable media players
- Mobile gaming devices
- PDAs
- DVD players
- Digital cameras

Overview

Windows Embedded CE 6.0 is the next-generation Windows Embedded CE operating system from Microsoft featuring a new kernel, enhanced security and richer VoIP, Bluetooth® and Wi-Fi support. For OEMs migrating to Windows Embedded CE 6.0, BSQUARE’s Feasibility Study is a customizable short-term consulting service that enables them to create a strategy for adopting Windows CE 6.0 that maximizes revenue and profitability.

Consulting Areas

During a customized Feasibility Study, BSQUARE experts can help a customer team understand the cost and schedule impact of porting existing Windows CE code to the new operating system. How will CE 6.0 interact with the hardware architecture of a currently shipping product? Is the migration effort a porting effort or will portions of the code need to be re-written? Should a development team that is shipping devices running Windows CE 4.2 move directly to Windows Embedded CE 6.0 or move to Window CE 5.0 first?

Alternatively, an OEM could use a Feasibility Study engagement to work with BSQUARE to model the effects of Windows Embedded CE 6.0 on performance, security and code footprint. Other choices would be to use the consulting time to create a custom Windows CE 6.0 training plan or perform a backward-compatibility audit on a current application code base.

Engagement Model

A customer works with BSQUARE to define the scope of a Feasibility Study. A senior software engineer spends 80 hours on the project and delivers a written Findings Report. The Findings Report details BSQUARE recommendations and outlines next steps.

Take the Next Step: Contact BSQUARE Today

To schedule your Feasibility Study or for more information about BSQUARE professional engineering services, Windows Embedded licensing and development tools that can accelerate your time to market, contact BSQUARE at 1-888-820-4500 or email sales@bsquare.com.

About BSQUARE

BSQUARE is a solution provider to the global embedded device community. Named Microsoft Windows Embedded System Integrator of the Year in 2006, our teams collaborate with OEMs at any stage in their device development to bring quality products to market faster. Since 1994, BSQUARE has been a trusted partner to smart device makers worldwide.

For additional information, visit www.bsquare.com.
Intrinsyc Software

Intrinsyc is a mobility software and services company that has strategically positioned its offerings to capitalize on an increasing trend towards “digital convergence” in mobility technology. The Company’s mobile software products and engineering services expertise help service providers and equipment manufacturers deliver leading edge products with faster time-to-market and improved development cost. Intrinsyc is the creator and licensor of Soleus™, the world’s first software platform based on Windows® Embedded CE for consumer handset development. The Company’s vision is to become the leading enabler of next generation handheld products.

With over 10 years experience as a mobile and embedded systems integrator, Intrinsyc has positioned itself as a strong technology partner with industry leaders such as Freescale and Microsoft. As a result, we are uniquely positioned to provide Freescale customers with expertise in the i.MX architecture, Windows Embedded CE and Windows Mobile. Intrinsyc offers both hardware and software engineering services with core competencies in:

- Packaged telephony integration services for 2G/3G RIL (Radio Interface Layers), GSM/GPRS, and VoIP on Windows Mobile and Windows Embedded CE platforms
- Experts in Power Management including integration of ARM Intelligent Energy Management (IEM) into Windows CE and Windows Mobile on Freescale’s i.MX31 applications processor
- Extensive experience in production Production quality BSPs (Board Support Packages) and new driver development and optimization
- New silicon board bring-up partner for Freescale (FSL)
- Experts in CETK (Windows CE Test Kit) and LTK (Logo Test Kit) including Hopper test debugging
- Application development and porting between Windows Mobile/Embedded CE, Symbian and Linux

In addition, Intrinsyc's Mobile Product offerings include Soleus™. Soleus™ is a complete mobile handset software platform built on Windows Embedded CE, with pre-certified telephony and a large application portfolio designed specifically to address the consumer feature phone opportunity. Soleus™ is pre-integrated with the leading hardware platforms including the i.MX31 multimedia applications processor. Soleus’ modular architecture provides a faster and more cost effective approach for bringing new mobile devices to market. Soleus™ leverages the Microsoft Platform Builder development environment and the Soleus™ UI Framework is based on Microsoft Visual Studio. The Soleus UI Framework is optimized to provide common phone controls and delineation between the application and UI layers, allowing for the efficient delivery of differentiated user interfaces. Soleus™ open platform and UI Framework enables manufacturers and operators to seamlessly integrate their applications into new device designs, providing greater control over brand experience.

Soleus™ and the i.MX31 create a comprehensive handset development platform that offers mobile phone manufacturers and network operators a low-risk, cost-effective and faster way to build handsets. As an active member of the Freescale Technology Forum and the Freescale Wireless Developer Network, Intrinsyc's Soleus™ product was recently awarded the Freescale Partner Software Solution of the Year award. Intrinsyc is also a founding member of Microsoft’s Mobile Partner Advisory Council and a Gold Member of the Windows Embedded Partner program. Our partnerships and unique experience enables companies to create winning wireless, mobile and embedded devices that build stronger and more profitable businesses.
Logic Product Development
Product-ready i.MX embedded computing modules

Your intellectual property, plus Logic’s products and services, give you an accelerated market launch. We fast forward product design, engineering and manufacturing with affordable, easy-to-use development kits and product-ready system on modules. By providing tools that let engineers begin writing software immediately, Logic helps your company stay focused on its high-value core technologies.

Logic PD has been helping fast forward thinking in product development for over forty years. We integrate user research and advanced technologies to deliver innovative, cost effective solutions for high performance products and industries. By providing a single point of contact from concept to fulfillment, we’re helping clients realize greater efficiencies and see a return on investment from their new products ahead of schedule.

Logic’s System on Module moves you from development kit to final product—easily, efficiently and without redesign.

The development kit simplifies:
• Application-specific software development
• Evaluation of the processor and SOM
• Transfer of application software to production
• GUI development with optional Display Kit

Logic’s line of product ready System On Modules (SOM) are complete with:
• Common footprint
• Software board support packages
• Bootloader that provides in-field device management, manufacturing, and test capabilities

Custom baseboards and peripheral boards provide:
• Power
• Connectors
• Custom peripherals
• Custom form factor

To learn more about Logic’s low-cost i.MX platform running Windows Embedded CE, visit www.logicpd.com.
The combination of Freescale i.MX family of application processors and Microsoft software provide an excellent fit for embedded applications such as portable media players. Freescale internally develops Application Development Systems (ADS) and reference design hardware. Freescale also internally develops Board Support Packages (BSP) software that optimizes performance of the overall system. These BSPs are tested and certified. Freescale provides access to these Microsoft-based BSPs on the Freescale web site http://www.freescale.com/imx.

Windows® Embedded CE 6.0

Componentized, real-time operating system and powerful tools for building a broad range of small-footprint embedded solutions

Windows® Embedded can help you turn your vision and ingenuity into superior business results by offering a great combination of the creative tools and technology you need and the support and resources Microsoft® and its partners can provide.

Designed specifically for embedded developers who need to bring new devices to market in minimum time and at the lowest possible cost, Windows Embedded CE 6.0 provides a 32-bit native hard real-time, small footprint operating system, a re-designed kernel, and powerful embedded development tools. CE 6.0 interoperates with industry standards and existing Microsoft desktop and server technologies to help you create differentiated devices for a broad range of device categories, from commercial devices to consumer electronics products.

New Kernel Provides Increased Functionality

CE 6.0 features a re-designed kernel to increase functionality for a richer set of user experiences by enabling a larger number of applications to run simultaneously. CE 6.0 supports up to 32,000 simultaneous processes, with up to 2 GB of virtual memory space for each process. A new file system supports larger storage media, large file sizes and removable media encryption.

Enabling New Business Opportunities

- The Cellcore Stack component helps devices establish data and voice connections over cellular networks.
- The Windows Media Connect and Digital Video Recording components help devices consume media from Windows XP-based PCs and record, pause and rewind live video streams.
- The Windows Network Projector component will make it easier for meeting attendees to give a presentation from a Windows Vista-based PC.
Nero Mobile

Nero Mobile is an outstanding content-centric digital media suite which transforms mobile phones, portable media players (PMPs) and PDAs into true feature-rich mobile media centers.

Nero Mobile’s built-in media library considerably simplifies content access and allows users to organize digital media content such as photos, videos and music in an easy-to-use manner regardless of the physical media source. It also allows the uncomplicated drag-and-drop transfer of music and videos from the home center to the mobile phone or PDA. Nero Mobile’s unique look and user-friendliness are available on all supported system platforms.

Nero Mobile closes the gap between home and mobile environments by providing direct mobility to all kinds of content. Direct support for Nero Mobile multimedia capabilities is available within the Nero 7 software suite. With more than 200 million customers worldwide, Nero is positioned to enable rich content experience to mobile, portable entertainment and automotive markets.

Nero Mobile has a unique user interface that has been carefully designed and optimized for the best possible multimedia experience, while keeping ease-of-use even for inexperienced new users.

Multiple designs (2D and 3D icons) are available, depending on the power of the target multimedia device running Nero Mobile as well as customers’ preferences. Skinning, for example with corporate logos, color schemes or images, can be done to meet customers’ needs.

- Nero Mobile is optimized to run on Windows Mobile (Smartphone and PocketPC, 2003 and 2005 versions) systems
- Nero Mobile supports Windows CE 5.0 operating system
- Supports advanced graphic acceleration through mobile DirectDraw technology from Microsoft

Nero Mobile currently supports Freescale’s i.MX21 and i.MX31 applications processors.

Upcoming features include online streaming services such as TV broadcasts and internet radio capability. Another key feature of Nero Mobile will be automatic synchronization between a mobile phone and a home media center, when both are in transfer range of one other.

For additional information, visit www.nerodigital.com.
SoniqCast

SoniqCast, L.L.C. is headquartered in Minnetonka, Minnesota. Early in 2004, SoniqCast launched the Aireo™, a wireless media player that used the company’s patent-pending platform. The SoniqCast platform leverages industry-standard technologies to achieve the greatest degree of flexibility and openness of any platform on the market. The platform provides support for all major digital audio formats including MP3, Windows Media Audio and WAV. The platform can support other formats, including FLAC, MP3Pro and OGG, with just a software upgrade.

The SoniqCast Aireo ready-to-manufacture platform and reference design uses Freescale’s i.MX31 multimedia applications processor along with the feature-rich Windows Embedded CE operating system. This combination provides a world-class platform enabling the latest and most sought after features in PMPs including Wi-Fi connectivity, Bluetooth, peer-to-peer content sharing, Windows Media, MP3, MP4, FM and more. The SoniqCast platform also supports direct-from-internet content acquisition, transaction processing, a la carte and leased content and wireless podcasting. Additionally, SoniqCast can customize the platform for any content provider including audio, video and photo content service providers. This best-in-class platform enables the latest technologies and features in the industry.

The SoniqCast platform can also support Windows Media DRM 10, the new standard for digital rights management. This Microsoft technology enables a new service which allows consumers to lease music on a monthly basis, eliminating the need to purchase songs a la carte. The platform also allows consumers to purchase music from multiple online music stores using a standard audio format, allowing them to shop and buy where they want. Users can obtain content wirelessly though their computer or an open Internet hot spot. Users of devices running on SoniqCast platforms can also transfer files between players wirelessly. Windows Media DRM 10 will allow users to “fill” their devices with music on a subscription basis for a monthly fee. Users can have thousands of songs updated and they can also share songs with other users with limited usage provisions. The SoniqCast platform provides unparalleled access to content.

The SoniqCast Platform is the only platform in the world that offers wireless (Wi-Fi) capability for media players. This provides unparalleled access to content because users can get new music and audio downloads while away from home, traveling, and on-the-go.
Xvid Solutions
One to Play Them All: High-performance Video Playback
for Freescale i.MX

Freescale’s family of i.MX application processors and Xvid Solutions software enable video
enthusiasts and consumers to truly enjoy their content any time, any place. Since being
unleashed to the public in 2001, the Xvid codec has become by far the most widely adopted
video compression technology to date and is used by millions worldwide.

With Xvid Solutions’ highly-optimized video codec libraries for Freescale i.MX31 and Windows
Embedded CE 5.0, OEMs and ODMs now can address the popular demand for superior picture
quality and interoperability for Xvid compressed video as well as a broad variety of other well-
known video compression standards such as MPEG-1/MPEG-2, H.263, MPEG-4 SP/ASP and
H.264/AVC - all as a one-stop solution.

This enables a myriad of use cases around digital video on Freescale’s i.MX31. Be it file
playback of user-generated content with demanding features, digital television or live video-
conferencing, Xvid Solutions provides the right answers to achieve a better performance and
hence satisfied consumers. Xvid Solutions software ideally fits:

- Smart Phones
- Portable Media Players
- Pocket TVs
- Mobile Gaming Consoles
- Digital Cameras and Camcorders

All software libraries developed by Xvid Solutions feature careful and in-depth optimizations
especially for Freescale’s i.MX31 processor and support Windows Embedded CE 5.0 as well
as Windows Mobile 2005 taking advantage of Microsoft’s DirectShow framework. This enables
unrivaled performance and feature-richness effectively closing the gap between desktop and
mobile video. Xvid Solutions’ multi-format video decoders designed for i.MX31 feature:

- High-resolution video playback (up to PAL/D1)
- Support for complex coding tools like Quarterpel MC
- Reduced power consumption and long battery runtimes

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| Applications               | Mobile TV, DVB-T | PMP, Mobile Gaming | PMP, Video Phones, Mobile TV |

Playback of many media types can be achieved on i.MX31, e.g. avi, mp4, mov, mpg, vob, 3gp, 3gp2, mkv, ogm and many more...

For more information please visit www.xvidsolutions.com.