

# 3G Reference Design

## Smart Solution for the Mass Market

Getting to market quickly with flexible solutions is key for OEMs and operators. That's why Freescale is collaborating with Symbian™ and S60 on a breakthrough 3G reference design. This innovative technology is a compelling solution for 3G phones for the mass market. Based on Freescale's Mobile eXtreme Convergence (MXC) platform that provides opportunities for 3G, open OS cellular devices, the reference design offers a comprehensive form factor that includes hardware and software. This collaboration of industry leaders provides a design that can greatly improve time to market.

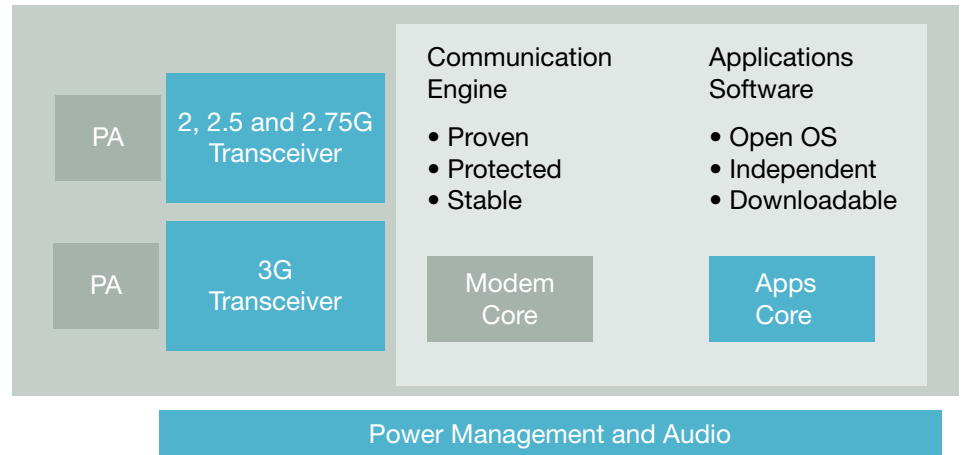
Each partner brings technical innovation, engineering expertise and a history of leadership in mobility to this project.

- Freescale—Reference design owner, leading platform development with the MXC300-30 single-core modem architecture, radio and power management
- Symbian—Symbian, developer and licensor of Symbian™ OS, contributing to reference design development in the areas of connectivity, telephony data path and OS base port
- S60—Providing the S60 smartphone software, S60 technical consulting and phone program support

### Planned Features

This reference design is expected to support mass-market phones with features for imaging, entertainment and video. It is planned to include the following features:

- Freescale's MXC300-30 single-core modem architecture
- Symbian OS
- S60
- 3GPP Release 5
- Tri-band GSM/EDGE



- High-Speed Downlink Packet Access (HSDPA) at 3.6 Mbps
- Multi-band WCDMA capable
- QVGA display, up to 4 megapixel camera
- MP3 and AAC music playback
- Video telephony and camcorder functionality

Freescale and its partners have built a roadmap of these reference designs, with plans to add features over time to address a variety of markets.

### Freescale MXC300-30

Freescale's MXC platforms bring cost-effective, high-performance technology to the mass market. The MXC architecture is elegant, flexible and open, ultimately reducing overall system power and cost.

The MXC architecture represents a radical simplification for smart wireless devices. MXC separates the two main domains of a cell phone: a modem core that communicates with the base station, and an applications

core that powers the user experience. Communications standards such as UMTS and WCDMA change far less often than applications—the latest videogame, Web browser, multimedia support—which can and should change rapidly according to what consumers want.

Because MXC cleanly separates these domains, designers can create new applications as quickly as they need to without touching the modem core. This helps to reduce development costs and helps to speed time to market by as much as six months. An open operating system approach lets software developers deploy applications across a broad range of devices.



Price and size matter. MXC is a true single-chip solution—and it's the only one on the market today. Incorporating more features in a smaller, integrated package reduces complexity, which results in a lower bill-of-materials cost than more traditional approaches. MXC's modem core is a proven, protected, mature and stable solution.

### **S60**

S60 offers a base for mobile devices based on Symbian OS that is rich in features. Support for large color screens, an easy to use interface and a suite of applications make S60 ideally suited to support new mobile services, such as rich content downloading and Web browsing. S60 is a source code product that S60 licensees can port and integrate into their own hardware designs to produce handsets with advanced data capabilities that offer numerous benefits for users, operators and developers.

S60 includes an extensive suite of smartphone applications. These include voice and video telephony, full Internet browser, calendar and RealPlayer™ media player, all of which provide state-of-the-art functionality for users. S60 applications are also seamlessly integrated with each other, to provide a smooth user experience when several applications are open simultaneously.

To drive service use, S60 includes an award-winning user interface, enabling a consistent and seamless user experience across all S60 based handsets. Rich personalization and customization features are built into the user interface framework. Advanced functions, such as multitasking and copying information between different applications, are made easy for the users.

S60 also provides an extensive set of embedded enabling technologies such as device management, 3GPP streaming audio and video support, and Java™ MIDP 2.0 that promote interoperability between terminals and foster the use of revenue-generating mobile services.

### **Symbian OS**

Symbian develops and licenses Symbian OS, the market-leading operating system for advanced, data-enabled mobile phones known as smartphones. As of Q3 2006, Symbian OS has shipped in over 100 million smartphones to over 250 network operators worldwide developed by 10 different handset manufacturers, including the world's top five.

Designed specifically for use in mobile phones, Symbian OS is power-efficient, multitasking, standards-based, open, C++ focused and Java friendly. Symbian OS includes integrated support for multimode telephony, networking for wide area and personal area networks, messaging, security and a framework for building compact user interface implementations. Symbian OS also adds industrial-strength personal information management applications to mobile phones and offers rich APIs for developers.

Reference designs pre-integrate Symbian OS with leading hardware and software enabling handset manufacturers to reduce phone development time and costs, and to focus development on innovative features. Reference designs have great advantages in enabling smaller, less expensive and even more capable smartphones based on Symbian OS. This enables handset manufacturers to easily target the high-volume, lower cost phone market.

### **Learn More:**

For current information about Freescale's MXC architecture, please visit [www.freescale.com/MXC](http://www.freescale.com/MXC).