

Sceptre[®] HPU



Overview

You can realize rapid, low-risk development and production of high-performance 3G handsets with the Agere Systems *Sceptre* HPU integrated chip set and software solution. Unlike other 3G offerings, *Sceptre* HPU is an integrated quad protocol *W-EDGE*[™] solution, providing seamless access to UMTS, EDGE, GPRS and GSM networks.

Sceptre HPU delivers broadband cellular access to highest performing 3G and 2.5G networks, combining data rates of 384 kbps in UMTS mode with up to 220 kbps on EDGE networks, delivering automatic handovers between UMTS, EDGE and GPRS

W-EDGE allows operators to offer high value broadband services to a broad subscriber base, by extending coverage across existing 2.5G EDGE networks and easing the pressure on next generation 3G network infrastructure deployment plans. User acceptance of 3G services will be highly dependent on network coverage and handset performance.

W-EDGE eliminates user dissatisfaction caused by service failure when out of 3G coverage and improves subscriber acceptance of next generation 3G services and handsets, by enabling seamless handover to and from UMTS and EDGE.

With *Sceptre* HPU you have the advantage of using technologies that have been field-proven over multiple generations of hardware and software systems to create new industry norms for performance, size, speed, and power consumption.

Sceptre HPU based handsets enable operators to deploy a unique combination of innovative 3G applications and multimedia services such as real-time audio, video streaming, digital photo-imaging, MP3 music and interactive gaming that drive new revenue streams and higher Average Revenue per User (ARPU).



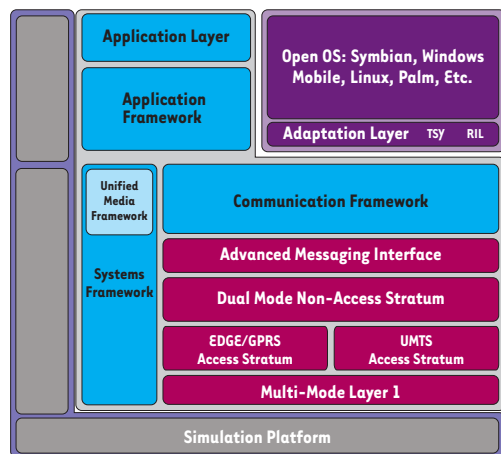
Your Benefits:

- **Fastest W-EDGE download/upload**

Delivering 384kbps in UMTS coverage areas and up to 220 kbps in 2.5G EDGE coverage areas – W-EDGE delivers up to seven times the bandwidth of most wireline PC dial-up connections and is four times faster than those wired connections even in 2.5G coverage areas.

- **Dual mode stack supports seamless handover between 2.5G and 3G networks**

The Agere multimode 3G wireless protocol stack is a complete software solution that is unsurpassed in the industry. Not only does Agere offer a 3GPP compliant protocol stack, multi mode support and full handover between GSM and UMTS, but this unique W-EDGE combination incorporates a fully integrated multimode Layer 1 and physical layer on a hardware platform, which has been proven, through testing on live UMTS networks.



Universal Software Platform

- **Single universal software platform enables comprehensive roadmap evolution**

To further reduce overall system integration time and resource, the Agere multimode protocol stack includes the Advance Messaging Interface (AMI) and unified media framework. This universal software architecture enables you to build handsets based on single or multiprocessor systems, so that cost effective feature phones or high end Smartphones can be built from the same single universal software platform.

- **High level of integration delivers small chip set**

Highly integrated solution enables smaller reference designs and more compact handsets based on a small footprint, while integrated baseband processing and power management achieve very low power consumption. Agere's highly optimized solution facilitates slower clock speeds and reduced current leakage.

Unique Hardware and Software System

Agere is recognized within the mobile communications industry for its high level of software expertise, having proven time and again the EDGE/GPRS protocol stack through extensive multi-faceted testing. The same proven formula has been used to deliver a high quality UMTS solution and Agere will be one of the first vendors to provide a WEDGE protocol stack to the open market.

Time to market is key and integration of a multimode protocol stack with the Layer 1 and physical layer hardware is a typically a long lead item, however, by utilizing core elements, which have been tested and are shipping in commercial handsets, Agere's multimode protocol stack offers a low-risk, high-confidence path to production W-EDGE handsets.

Scalable Solution and Advanced Connectivity

Sceptre HPU supports advanced multimedia without the need for a co-processor. It is scalable for entry to mid and high end 3G solutions and provides proven interfaces, designed to work with multimedia co-processors and applications processors. Advanced multimedia support includes dynamic loudness adjustment, full duplex speakerphone, HiFi audio routing, PCM audio interface, integrated polyphonic emulation: 40+ voices, MP3 and AAC+ decode. High levels of video performance including MPEG4 decode, QCIF 15 fps, MPEG4 encode, QCIF 10 fps are supported as well as video telephony through an external multimedia accelerator.

Users can easily exchange digital pictures, audio and other files between Agere based mobile phones, PCs, or PDAs using a number of flexible connectivity options such as the on-chip USB 1.1 controller, infrared (IrDA), removable secure-digital and multimedia memory cards (SD/MMC), or Bluetooth® support.



Solid Foundations

More than 75 percent of the world's mobile phone subscribers are currently served by GSM networks, the technology foundation for EDGE and UMTS.

Safety in Numbers

More than 100 different GPRS handset models have been developed using Agere's mobile terminal platform and our *Sceptre* HPE solution has been designed into more than 20 EDGE handsets. With custom WCDMA chipsets in multiple 3G handsets shipping since January 2003 and with over 70 million handsets worldwide using reference designs from Agere. *Sceptre* HPU is an evolution of proven *Sceptre* hardware and software solutions.

Low-Risk 3G Evolution

Sceptre HPU is built upon our renowned single software core that has been developed, proven, and refined over multiple generations of Agere devices. These unique attributes help you realize a very low-risk, extremely reliable UMTS migration path as well as shorter, more economical product development cycles. Product quality is driven through extensive testing, with Interoperability (IOT) sessions being performed throughout the development process to prove the solution against major global networks. Agere develops, tests and maintains a single software baseline across 2.5G and 3G chipsets and continues to fold-back in enhancements. One product family addresses GPRS, EDGE and UMTS/EDGE (WEDGE) using one software baseline and unified development tools, supporting increased ROI, reduced development cost and improved product margin.

Worldwide Operability

Sceptre HPU is designed to work across any GSM/GPRS/EDGE/UMTS network and its unique software architecture supports single and dual processor solutions, by separating communication functionality from applications to ease product development and end user customisation.

Agere's core system has undergone extensive performance

testing, has been certified by both the Global Certification Forum (GCF) and PCS Type Certification Review Board (PTCRB). Agere has achieved interoperability accreditation with virtually all major network equipment vendors. Through this, valuable months on operator approval time can be eliminated to accelerate product ramp-up and global deployment.

Support and Focus

Agere is one of a very few silicon vendors with the specific systems expertise to complement OEM and ODM business models. With proven experience in delivering operator solutions, approved in over 70 networks today, Agere's development and support team is dedicated to helping you get your differentiated handsets to market easily with the minimum amount of effort from your design team.

A word about W-EDGE. . .

WCDMA being deployed by leading operators, beginning with high density urban areas and over 130 operators in more than 75 countries are committed to deploy EDGE for delivering next generation services.

More than 50 networks are offering commercial EDGE-enabled services in America, Europe, Middle East and Asia (even more networks are in pre-commercial phase). For global handset vendors, EDGE becomes the mandatory communication base line for ANY multimedia mobile phone, and even more crucial in dualmode UMTS phones.

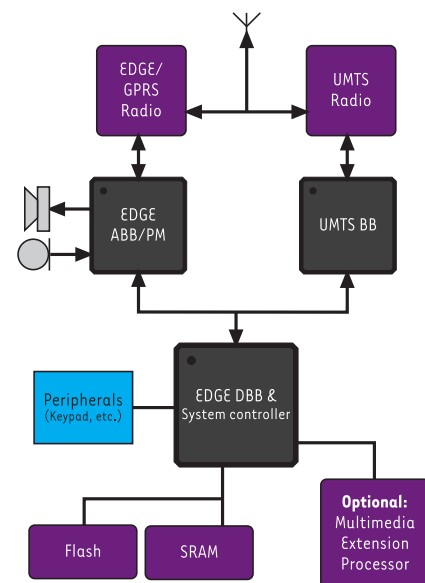


Figure 2. *Sceptre* HPU W-EDGE Solution



Key Technical Features

- UMTS Compliant with 3GPP Release 99 June 2003
- Multimode Type I and Type II in accordance with 3GPP 21.910.
 - Automatic & manual dual mode operation
 - RAT Manager
- Full Handover support
 - All 3GPP defined Type 2 GSM to UMTS handover variants
 - Soft, softer, blind, hard, intra-freq., inter freq., inter RAT
 - Data & voice handover
 - Compressed mode Inter-RAT measurements
- 3GPP USIM and USAT
 - Conforms to ETSI UICC specifications
- High speed data rates up to 384kbps uplink/downlink
- Multi-call (or Multi-RAB) options
 - Scalable to all reference classes up to 384kbps 3GPP 25.306
 - Circuit and packet switched data support
- Transport channels: BCH, PCH, FACH, DCH, RACH
 - Optional DSCH channel (Layer 1)
- Quad protocol support (WCDMA, EDGE, GPRS, GSM)
- EDGE Class 10 support (Class 12 capable)
- Phase 2+ Protocol Stack SW for Quad Band GPRS/EDGE
- Up to 220kbps on 2.5G/EDGE networks
- Intersystem handovers (real dual-mode)
- Simultaneous Packet Switched and Circuit Switched call
- Compressed mode support
- Quad Codec FR, EFR, HR and AMR speech codec support
- Supports quad-band operation (850 MHz, 900 MHz, 1800 MHz, 1900 MHz).
- Advanced connectivity support for SD/MMC, USB, Bluetooth, IrDA, and others.
- Compact design allows smaller pcb configurations, and smaller phones.

Delivering Comprehensive Systems

- Fast time-to-market and reduced development cost based on mature underlying technologies and multi-generational proven software core.
- Low-risk, high-confidence migration path leverages Agere's product evolution.
- Proven low-power technologies enables extended talk and standby times.
- Flexible RF interface allows for optimized RF solutions.
- Network interoperability based on extensive IOT and field testing experience.
- High performance and future proof through programmable UMTS physical layer implementation.
- Extensive in-house test capability, including access to a UMTS network for internal interoperability testing (IOT).
- Standard test equipment for official GFC TTCN test cases.
- Multiserver fully simulated regression test system above and beyond standards compliance.

Agere's Integrated Solutions

Agere's easily adaptable portfolio of integrated hardware and software solutions enables you to quickly and safely create innovative next-generation enhanced feature phones. Our verified reference designs give our customers the advantage of Agere's proven single software core and support for multiple handset segments and evolving standards. Agere is ready in all aspects to help you get new products to market and to be your single point of contact for design, development and deployment. Our comprehensive support gives you a low-risk, high confidence path for the rapid deployment of new phones for global markets.

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