



SoftFone® for EDGE Complete Platform for EDGE/GSM/GPRS Terminals

Key Features

- Complete Hardware/Software Platform
- High-performance Blackfin® Processor Core
- ARM® Control Processor
- Extended peripheral interfaces for multimedia applications
- Othello® EGPRS Direct-conversion Radio
- EGPRS Software package from TTPCom

Overview

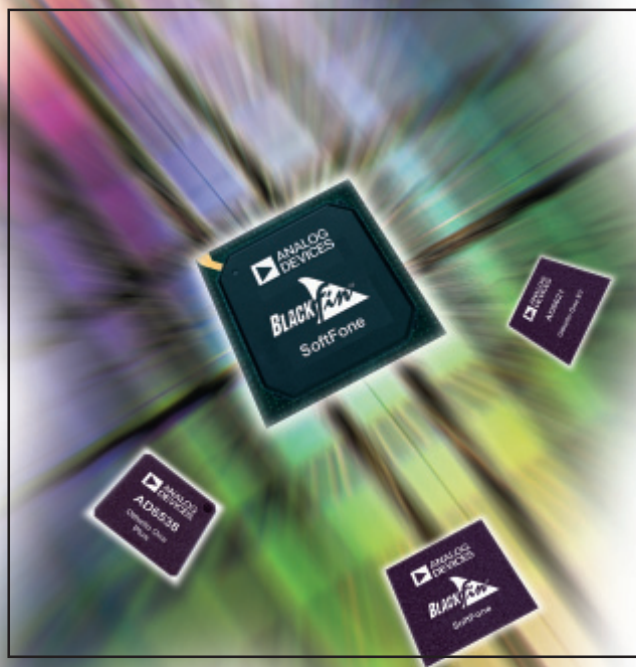
The Blackfin SoftFone GSM/GPRS/EDGE platform is a complete hardware and software system that enables rapid development of EGPRS terminal devices, including cellular phones, PC card form-factor wireless data cards, multimedia “smartphones”, and wireless-enabled PDAs. It supports EGPRS operation up to Class 12 (5 active slots, 296 kilobits per second total). The platform comprises four chips supplied by Analog Devices. TTPCom Ltd. of Cambridge, England provides software and a reference design platform.

Baseband Processing Section

The AD6532 digital baseband processor includes the Blackfin processor core, based on the MicroSignal Architecture jointly developed by Analog Devices and Intel. The Blackfin processor operates at speeds scalable up to 247 MHz (494 MMACS) and offers the processing speed necessary for EDGE signal equalization, demodulation, and speech-coding algorithms, with additional MIPS available for advanced audio and video processing. An ARM microcontroller is included for the protocol-stack processing and control functions.

The processing speed of the Blackfin processor core in the AD6532 enables multimedia algorithms such as MP3, MPEG4, noise-reduction, echo-cancellation, etc., that enhance the features and audio quality of the end product. A wide range of peripheral devices is supported, including high-resolution color displays, cameras, and both MultiMedia Card (MMC) and Secure Digital (available to SD Association members only) removable media.

The AD6555 analog baseband chip includes high-linearity baseband receive A/D converters needed for the EDGE signal, and dual-mode transmit D/A converters with GMSK and 8-PSK modulators. The voiceband codec supports 8 kHz and 16 kHz sample rates for high-quality voice recording. A stereo D/A converter with variable sample rates from 8 to 48 kHz and integrated stereo headphones/speaker drivers, provides MP3-quality audio, game sounds, and polyphonic ringtones. The AD6555 also provides complete power management, including USB power and dynamic power management for the digital baseband processor to reduce core voltage and extend battery life.



With the entire signal chain and software perfectly tuned as one, Analog Devices Blackfin SoftFone product represents the most complete and advanced solution in the industry.



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Radio

The radio section of the Blackfin SoftFone platform is based on Analog Devices' award-winning Othello® direct-conversion technology. The AD6546 Othello-E GSM/GPRS/EDGE transceiver IC provides a small, low-component-count solution for the EDGE transceiver. The AD6546 Othello-G uses a closed-loop polar modulation transmitter architecture for high efficiency and ease of manufacture, and a high performance direct-conversion receiver. Sensitivity is -110dBm, measured at the antenna terminals including filter, switching, and matching network losses. All VCO tank circuits and loop filters are included on-chip and the AD6546 operates in the 850, 900, 1800, and 1900 MHz bands.

Software

TTPCom Ltd is a world leading independent supplier of technology for digital wireless communications. TTPCom technology is featured in products, such as mobile phones, wireless PDAs and modems, base stations, and test equipment sold all over the world. TTPCom's GSM and GPRS protocol-stack products are field-proven and well respected in the industry, with extensive interoperability testing and continuous integration of enhanced features. EDGE is one such extension of TTPCom's existing technology.

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EDGE Handset Block Diagram:

