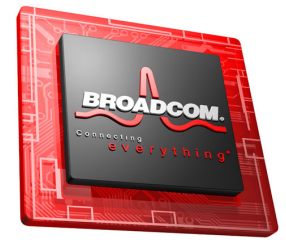




BCM2152 PRODUCT Brief



HSDPA/WCDMA AND EDGE/GPRS/GSM "HEDGE" SINGLE-CHIP MULTIMEDIA BASEBAND PROCESSOR

FEATURES

- **General Characteristics**
 - Single-chip, mixed signal, 484-pin FBGA package (14 mm × 14 mm)
 - EDGE/GPRS/GSM: 850, 900, 1800, and 1900 MHz
 - HSDPA/WCDMA: 850, 1900, and 2100 MHz
 - FR/HR/EFR/WB + NB-AMR speech coding
 - EDGE/GPRS Class 12
 - WCDMA Class 3, 384 Kbps full duplex
 - HSDPA category 7 and category 8 support, 7.2 Mbps, Release 5
 - ARM9™ for WCDMA modem and DSP for GSM modem
 - ARM1136J-S™ @ 208 MHz for stack, applications, and UI
 - Inter-RAT operation in idle and active modes
 - OTP ROM for DRM and IMEI security
 - ARM® boot options: ROM/UART/NOR/NAND/Secure
- **Multimedia Capabilities**
 - 5-megapixel camera support with wideband digital interface
 - Serial or parallel LCD interface
 - Color display support (up to 262K colors) for two panels
 - CCIR601 digital video output for TV
 - 30 FPS CIF video record, playback, and streaming over WCDMA, H.264 QCIF 15 FPS decode
 - 2D graphics, video, and JPEG hardware acceleration
- **Improved Audio**
 - SAIC for voice + data, echo canceling, noise suppression, and internal CTM
 - Proprietary M-Stream™ technology improves handset reception and voice quality.
 - Download code capability for audio codecs/processing
 - Integrated 64-tone polyphonic ringer
 - Integrated MP3, AAC, AAC+ eAAC+
 - Multiple speaker drivers (headset, handset, speaker, speakerphone, microphone, IIS), amplifier for hands-free or push to talk

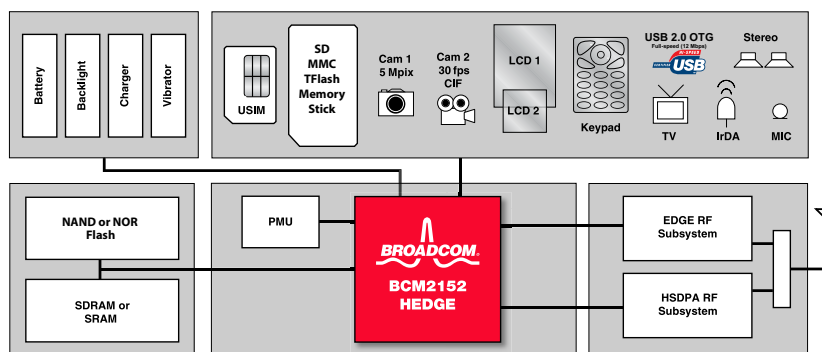
SUMMARY OF BENEFITS

- **Comprehensive HEDGE System Design**
 - Proven reference designs for bar and flip-type handsets
 - ARM RealView® debugging environment
 - TeakLite® debugging environment
- **Upgraded ARM® Memory Bus Interface (Eight Chip Selects)**
 - Various combo or discrete memories @ 1.8V
 - NOR flash: 512 Mb with 52 MHz burst read, page modes
 - SRAM: 128 Mb with 52 MHz burst read and write
 - SDRAM: 512 Mb @ 104-MHz clock, 16- and 32-bit
 - NAND flash
- **Enhanced Interfaces**
 - USB 2.0 OTG Full-speed (12 Mbps)
 - Three UARTs @ 3.6 Mbps and IrDA
 - SDIO interface @ 416 Mbps (8-bit I/F) and 208 Mbps (4-bit I/F)
 - Hard disk (CE-ATA)/SD/MMC and T-Flash
 - Memory Stick PRO™
 - USIM connections @ both 3V and 1.8V
 - 16-bit ETM and JTAG for software debug
 - Bluetooth®, Wi-Fi®, DVB-H, FM radio, and GPS support
 - GMSK APCDAC mixed-multislot transmission
 - Two DACs; GMSK RF power control DAC and RF frequency control DAC
 - 8PSK via 3-wire interface
 - Analog or digital interface support for RFIC, DigRF for digital mode

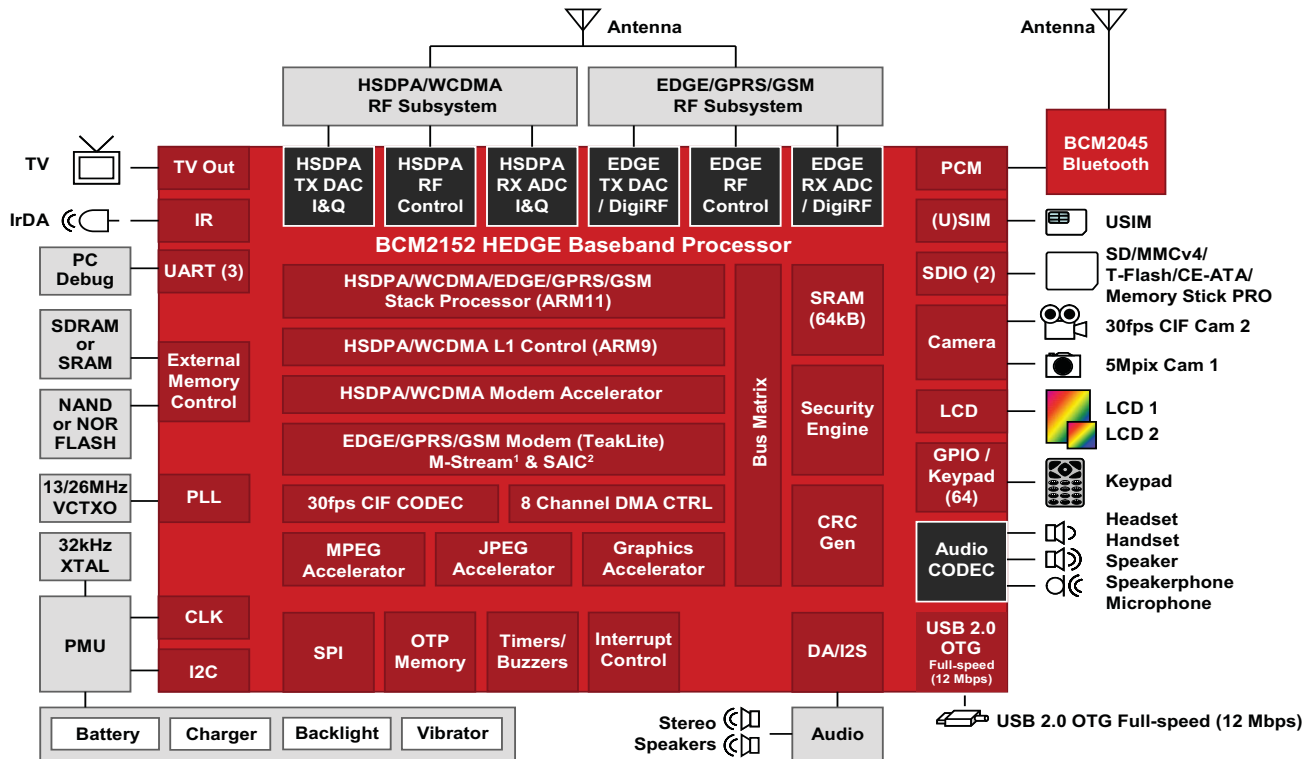
APPLICATIONS

- High-end and midrange feature and multimedia phones
- High-end smartphones
- Suitable for operators in Europe and UK, the Americas, and Asia

System Block Diagram



OVERVIEW



¹M-Stream is an additive technology that enhances *downlink voice quality* in the presence of noise.

²SAIC (Single Antenna Interference Cancellation) is an additive technology that improves downlink quality in the presence of interference and noise.

www.DataSheet4U.com Functional Block Diagram

Overview

The BCM2152 dual-mode HSDPA/WCDMA and EDGE/GPRS/GSM multimedia baseband processor features 384 Kbps WCDMA, 7.2 Mbps HSDPA Category 7 and Category 8, and EDGE Class 12 capability to achieve broadband-like connectivity.

Full inter-RAT operation is supported for seamless global roaming on EDGE/GPRS/GSM and HSDPA/WCDMA networks worldwide.

Interface functions and drivers are integrated to enable auxiliary components, such as handset, headset, microphone, and speakerphone speaker (up to 400 mW into 8Ω) and 3V/1.8V switching SIM to connect directly to the chip.

Separate parallel LCD and ARM memory busses allow the user interface to be updated without impacting the real-time radio operations.

Security

The embedded one-time programmable (OTP) bits allow the software to boot securely and check IMEI security prior to network activation. OTP bits can also be used by high-level applications to verify the integrity of Digital Rights Management (DRM) functions.

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