

PMB 8877

S-GOLD₃[™] - Turbo Engine for
EDGE-enabled Multimedia Phones



S-GOLD₃[™] TAKES Infineon Technology's well-known S-GOLD[®] architecture to new performance spheres. Its performance-optimized implementation nearly doubles the multimedia power of previous S-GOLD[®] controllers. High processor speed combined with multimedia hardware accelerators and advanced connectivity make this device the "turbo engine" of the S-GOLD[®] family. Even the most performance-greedy applications such as video telephony and 3D graphics can easily be handled without additional hardware. S-GOLD₃[™]'s proven architecture known as "application-enhanced modem" is extremely efficient with respect to overall system cost, footprint, feature set, power consumption, and application performance. Its EDGE capable modem marks the third generation of Infineon's EDGE-enabled baseband solutions. Configurable with a UMTS co-processor, S-GOLD₃[™] extends into the growing 3G market, offering easy migration from a GSM/GPRS/EGPRS phone to a dual-mode wideband CDMA/GSM terminal.

AS NEXT-GENERATION mobile phones go further and further beyond pure communication functionality, S-GOLD₃[™] offers cost-optimized access to multimedia functions such as camera support of up to 5 MPixel (with JPEG camera module), video replay up to 15 fps/CIF resolution, video streaming over EDGE in MPEG4/H.264/Real format, video recording, and advanced audio codecs like AAC++. Supporting all this functionality without the need for additional hardware, S-GOLD₃[™] enables a true 3-chip system solution with minimum cost and size requirements. For even more demanding feature need S-GOLD₃[™] is configurable with a number of co-devices such as multimedia companion chips and/or WCDMA co-modem for 3G feature phones.

S-GOLD₃[™]'S[™] OVERALL SYSTEM performance is based on the outstanding processor speed of its ARM[®]926 CPU which is tailored to run at up to 312 MHz. Data and instruction caches as well as general-purpose zero-wait-state memories allow for fast memory access, fully exploiting the processing power of the CPU core. To keep power consumption at a minimum several power measures control the activation, the frequency selection, and the power-down modes of the various on-chip resources. To enable efficient access to external memory devices S-GOLD₃[™] allows for low-latency access to a number of memory types such as NOR/NAND Flash, SDRAM, cellular RAM, PSRAM. DDR SDRAMs can be operated "high speed", transferring data twice per clock cycle.

COMBINED WITH Infineon's latest SMARTi[™] RF devices and SM-POWER[™] power management ICs, S-GOLD₃[™] comprises the system solution for next-generation, EDGE-enabled mobile phones with minimum bill-of-material and space constraints.

Key Application Features

- ARM[®]926 based single modem and application processor with cache support and fast tightly-coupled memories
- Parallel/serial display interface supporting high resolution color displays
- High-speed serial display interface for cost-effective clam-shell mechanics
- Camera interface supporting camera applications of up to 5 MPixel
- MPEG4/H.263 accelerator hardware (MOVE[®] coprocessor)
- 2x MMC/SD interfaces, SD IO capable
- USB 2.0 on-the-go, full speed
- Fast IRDA
- Dedicated NAND flash controller supporting burst mode and error detection
- Standardized multimedia extension interface (MMIC-IF) supporting external hardware accelerator ICs such as complex display/camera modules or graphic accelerators
- 2 bi-directional digital audio interfaces (I²S) to connect audio companion ICs and Bluetooth modules
- Support for video streaming + video telephony
- Support of DDR-SDRAM devices

Key Modem Features

- E-GPRS/GPRS/GSM modem supporting up to multislots class 12
- FR, HR, EFR, AMR
- HSCSD class 10
- SAIC
- DTM class 11
- Polyphonic Ringer support for up to 64 voices at up to 48 kHz sampling rate
- Echo cancellation/noise reduction
- GTT/TTY

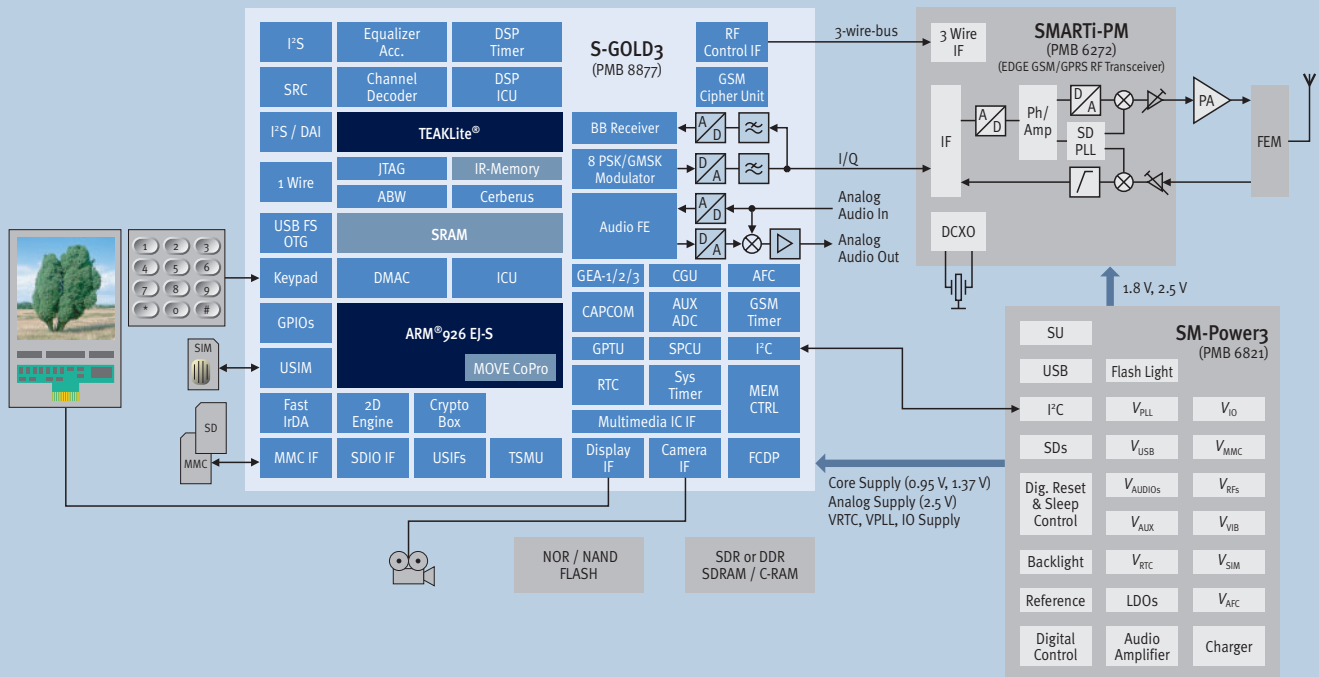
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Mobile Solutions



Never stop thinking

Application Example Quad-Band EGPRS Solution



Applications

- E-GPRS/GPRS/GSM multimedia phones with tomorrow's multimedia requirements
- Minimum space E-GPRS/GPRS data modules supporting up to multislot class 12
- WCDMA phone and data module applications (in combination with WCDMA co-processor)

Key Benefits

- High integration level of key multimedia features allowing for minimum cost system solutions for tomorrow's feature phones
- High overall system performance with high-speed ARM subsystem and double-data rate memory access
- Proven leading-edge modem technology with third generation E-GPRS evolution
- Feature flexibility through upgrade options with multimedia chips via standardized interface
- 3G upgradeable with WCDMA coprocessor
- Connectivity to Bluetooth, FM Radio, WLAN, A-GPS and other modules

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Published by
Infineon Technologies AG
81726 München, Germany

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Ordering No. B134-H8540-G1-X-7600
Printed in Germany
PS 01061. nb