

Hammerhead™

PMB 2520

Single Chip A-GPS Solution



THE HAMMERHEAD A-GPS single chip solution integrates a high performance Assisted-GPS baseband processor and a low-noise GPS RF front end to deliver exceptional sensitivity (-160 dBm), low power consumption and fast time to first fix (TTFF).

THE MASS adoption of A-GPS in mobile devices requires a cost optimized solution delivering high performance in a small package while drawing minimal power. Infineon and Global Locate have met these prerequisites with a single chip A-GPS receiver – Hammerhead.

THE HAMMERHEAD is based on Global Locate IP and State of the Art Infineon 0.13 micron RFCMOS Process Technology. This ground breaking chip is the key for enabling location based services such as emergency assistance and personal navigation in deep urban canyons, in moving vehicles and indoors.

Key Features and Benefits

- Single chip solution (A-GPS baseband & RF front end) minimizing board space footprint (<80 mm² PCB area for complete A-GPS solution)
- Advanced low-power 0.13 micron RFCMOS technology with smart power management allowing low power consumption for long battery life
- Real-time hardware correlator engine (fast acquisition and high sensitivity)
- High sensitivity, -160 dBm, enabling indoor and deep urban operation
- Built in voltage regulators supporting single power supply source
- Multiple mode operation
 - MS-based (calculation of position in mobile handset)
 - MS-assisted (calculation of position in base station)
 - Autonomous (no assistance by network)
 - Enhanced autonomous (position computed at mobile device using four day assistance data)
- Multiple protocol operation
 - Control plane (RRLP & RRC)
 - User plane (SUPL)
- A-GPS control software does not disrupt call flow and is easily integrated into cellular processor
- Standard compliant (exceeds requirements for 2.5 G and 3 G networks)

Note: The Hammerhead trade mark is owned by Global Locate, Inc.

Specification

- -160 dBm sensitivity
- Time to First Fix (Mobile-Based):
 - 1 second @ 5 m accuracy (cold start, -130 dBm)
- 2 m steady state accuracy
- Supported reference frequencies of 10–40 MHz
- Serial interface (SPI, I²C, UART)
- Assistance data standards support
 - UMTS/GSM: 3GPP TS 25.331, TS 44.031, and OMA SUPL
 - CDMA: 3GPP2 C.S0022-0-1
- 7 x 7 mm PG-VQFN-48 package (lead/halogen-free)

Devices

- Mobile phones
- Smartphones
- PDAs

Applications

- Emergency Assistance (E911, E112)
- Navigation: Point-to-Point, POI, Business finder, Real-time Traffic information
- Child safety and Friend-finder
- Fleet and workforce management
- Location Games



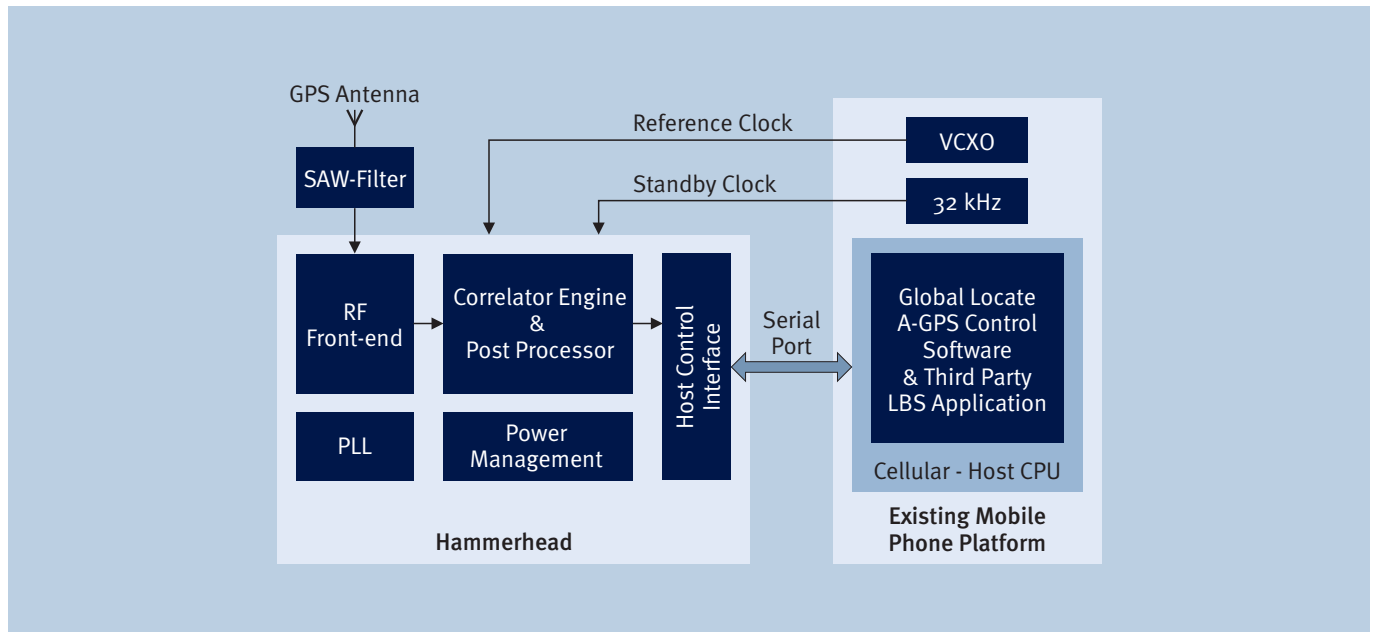
www.infineon.com/gps
www.globallocate.com

Wireless Communication



Never stop thinking.

Block Diagram



Block Diagram

- Cost optimized architecture for integration into mobile phones
- No additional external CPU or memory required
- Both A-GPS control software and LBS (location based services) application executed on host CPU of cellular processor
- Serial host interface (UART, SPI or I²C)
- No additional TCXO required, uses host 32 kHz standby clock & reference clock (10 to 40 MHz)

Application Example

- Personal Navigation Never get lost again in foreign cities. Your mobile phone is leading the way to your destination, whether you start indoors or outdoors. Avoid being delayed in traffic jams by utilizing real-time traffic information.
- Location based Services Finding the way to points of interest simplifies your life. Take the short way to restaurants in your neighborhood, the nearest gas station or metro station. Use your LBS application indoors, to start planning your trip before you get in your car.
- Emergency Assistance A-GPS-enabled mobile telephones are in demand to allow accurate tracking of emergency calls placed from mobile telephones by the end of 2005. Hammerhead will enable mobile users calling emergency telephone codes, to provide emergency services with very accurate location information, both from indoors and outdoors.
- Friend-Finder and Child-Safety Meeting with friends and family is now an easy task by sharing your personal location. Keep an eye on the current position of your children and keep them away from dangerous places.

Product Summary

Product	Sales Code	Package
Hammerhead	PMB 2520	PG-VQFN-48 (7x7 mm) lead-free/halogen-free

For further information on the Hammerhead product please contact Global Locate (www.globallocate.com) or Infineon Technologies (www.infineon.com/gps).

How to reach us:
<http://www.infineon.com>

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