A blood glucose meter (BGM) is a device used to determine the approximate concentration of glucose in the blood. In order to test your blood you need a test strip and a blood glucose meter. When a drop of blood is placed on the test strip it interacts with elements on the strip that causes a reaction and an electric current is generated. This current is sent to the BGM. The Op Amp and transimpedance amplifier on the BGM convert the current into voltage. This voltage is then precisely sampled by the Analog-to-Digital Converter (ADC) of the meter. TI’s ultra-low-power MSP430™ and ARM® Cortex®-M4 MSP432™ MCUs have best-in-class integrated Op Amps and ADCs that process the data to calculate the glucose level in the blood sample. This value can then be transmitted to a PC, portable equipment or the Cloud, wirelessly (using RF) or wired (using USB-PHDC).

**Why partner with TI in blood glucose meters?**

- Targeted products for low-, mid- and high-end BGM markets
- Integrated Analog Front End to reduce BOM and improve accuracy
- Ultra-low power to maximize battery life
- Industry’s broadest radio portfolio to enable wireless communications
- Worldwide application and supply chain support
- ISO 11073 / Continua Alliance support

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<th>Issue/Need</th>
<th>Requirements</th>
<th>TI Solution</th>
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<td>FDA driving accuracy requirements higher</td>
<td>16-/24-bit sigma delta ADCs</td>
<td>MSP430FR6xx</td>
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<td>MSP430FR66xx</td>
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<td>MSP430FR86xx</td>
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<td>Cost sensitivity increasing</td>
<td>Integrated low-cost silicon BOM</td>
<td>MSP430FG4xx</td>
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<td>Longer battery life</td>
<td>Ultra-low-power MCU</td>
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<td>Richer user interfaces</td>
<td>32-bit processing</td>
<td>MSP432™ 32-bit ARM® Cortex®-M4F</td>
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<td>TM4C ARM Cortex</td>
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</table>

**Getting Started**

- Portable Medical Meters: [www.ti.com/solution/medical_meters_portable](http://www.ti.com/solution/medical_meters_portable)
- Medical and Healthcare Applications: [www.ti.com/medical](http://www.ti.com/medical)

(continued on back)
**System-Based and Optional Functional Blocks in Portable Medical Systems**

- **Connectivity**
  - Wireless Data Transmission
  - Wired Data Transmission
  - Card Slot for System Calibration
  - Audio Feedback or Instructions

- **Battery Management**
  - Fuel Gauge
  - Lithium Battery Protection
  - Battery Charger

- **Processor and Memory Power**
  - µController
  - Memory Power

- **Data Transmission**
  - USB Controller
  - Transient Protection

- **Power**
  - AC Adapter
  - AC Line (optional)

- **Control and Interface**
  - Current-Limit Switch

- **Audio**
  - Feedback or Instructions

- **Instrumentation**
  - AMP

- **Display and Connectivity**
  - LCD Display
  - LVDS

- **Core Portable Medical System**
  - Processor, Memory, Display, Keypad, Power, Battery Management

Product Availability and Design Disclaimer - The system block diagram depicted above and the devices recommended are designed in this manner as a reference. Please contact your local TI sales office or distributor for system design specifics and product availability.

**TI Worldwide Technical Support**

**Internet**
- TI Semiconductor Product Information Center Home Page
  - support.ti.com
- TI E2E™ Community Home Page
  - e2e.ti.com

**Product Information Centers**

**Americas**
- **Phone**
  - +1(512) 434-1560
- **Brazil**
  - Phone 0800-891-2616
- **Mexico**
  - Phone 0800-670-7544
- **Internet/Email**
  - support.ti.com/sc/pic/americas.htm

**Europe, Middle East, and Africa**
- **Phone**
  - European Free Call 00800-ASK-TEXAS (00800 275 83927)
  - International +49 (0) 8161 80 2121
  - Russian Support +7 (4) 95 98 10 701
- **Note**: The European Free Call (Toll Free) number is not active in all countries. If you have technical difficulty calling the free call number, please use the international number above.
- **Fax**
  - +49 (0) 8161 80 2045
- **Internet**
  - www.ti.com/asktexas
- **Direct Email**
  - asktexas@ti.com

**Asia**
- **Phone**
  - Toll-Free Number
    - Australia 1-800-999-084
    - China 800-820-8682
    - Hong Kong 800-96-5941
    - India 00-800-100-8888
    - Indonesia 001-803-8861-1006
    - Korea 080-551-2804
    - Malaysia 1-800-80-3973
    - New Zealand 0800-446-934
    - Philippines 1-800-765-7404
    - Singapore 800-886-1028
    - Taiwan 0800-006800
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