

OMAP35x Platform Solutions for Portable Patient Monitoring and Diagnostic Applications



The need to minimize healthcare costs is driving healthcare providers to move patient treatment and monitoring outside the hospital. Providing healthcare in highly populated rural and remote areas in emerging economies is driving the need for remote patient monitoring and telemedicine.

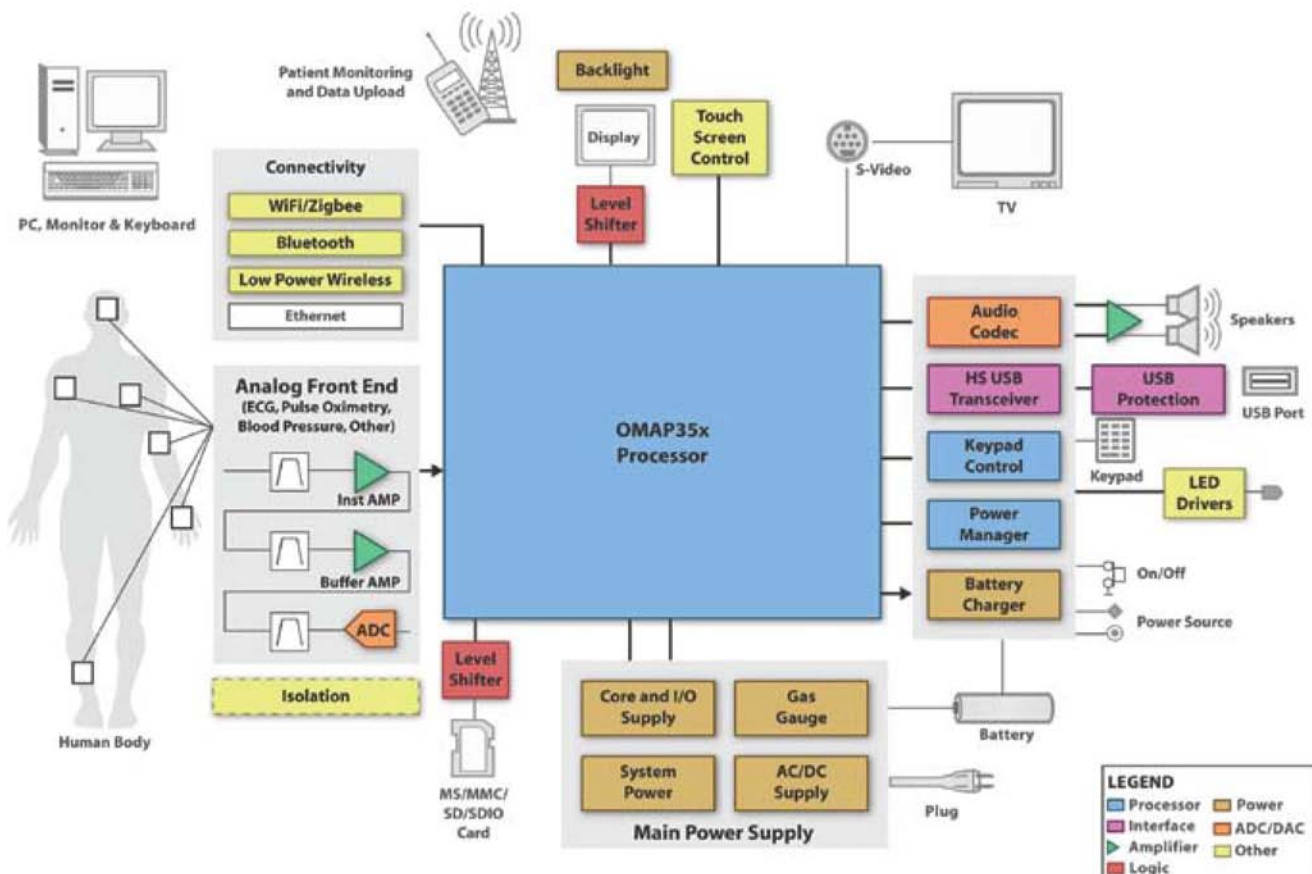
The challenges in implementing such patient treatment and monitoring equipments are similar to cellular phone systems. There are a wide variety of patient monitoring systems such as ECG monitoring, fetal monitoring, sleep monitoring, non-invasive health monitoring and many others.

Key requirements for patient monitoring include portability, ease of use, very high performance, capability to run multi-modal analysis and lower costs. TI's OMAP™ technology, with embedded ARM® and DSP processor cores, directly addresses these challenges, so manufacturers can deliver powerful medical devices that are easier to use, accessible and affordable.

It begins with the physiological interface to collect the signals from the human body. TI has extensive analog front end solutions for essential signal conditioning. The OMAP 3 processor performs further digital signal processing, measurements and analytics to monitor patient condition.

The powerful ARM processor runs a high-level operating system (HLOS) which makes adding multi-modal monitoring easy and provides extensive user interface and system control. Data logging is critical to make the patient's health history available to the health care provider periodically.

Detecting abnormal conditions and communicating to a central server is essential in providing timely and on-demand healthcare. OMAP 3 processors have an extensive peripheral set to support various connectivity options such as Bluetooth® technology, WiFi®, Zigbee® and other emerging standards.



▲ Typical patient monitoring system

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