



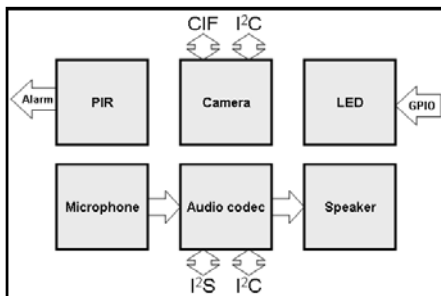
## Imote2 Multimedia – IMB400

### FOR WIRELESS SENSOR NETWORKS



#### IMB Subsystems:

- Color Image and Video Camera Chip (OmniVision OV7670)
- Audio Capture and Playback CODEC (Wolfson WM8940)
- On Board Miniature Speaker and Line Output
- On Board Microphone and Line Input
- PIR Motion Sensor (Panasonic)
- Status LED



The IMB400 adds multimedia capabilities to the Imote2 platform. It allows for capturing images, video and audio as well as for audio playback. All data is digitally captured for storage, transmission or further processing on the Imote2 mainboard. In addition, the IMB400 features a PIR sensor for platform wake-up from sleep if movement is detected.

#### Applications

The Imote2 Multimedia Board offers a compact, power efficient solution due to its integration of camera, audio and motion detection functionality into one platform. Instead of using compute intensive image analysis to detect motion, the Imote2 Multimedia Board uses a Passive InfraRed (PIR) sensor to pick up movement, which then activates the camera allowing for its operation as a low-power device. In addition to the PIR sensor, key subsystems include a color image and video camera chip along with an audio capture and playback CODEC.

This sensing capability provides users with the ability to set-up low-power wireless camera networks and conduct visual tracking of objects and people. This device can be used to monitor intrusion detection with its capability to act as an audio recorder and perform image capture for safety and security.

#### Specifications

##### Camera

- Image resolution up to 640x480 pixels, 30 fps max. RGB, YCbCr or YUV formats
- Hardware image scaling and filtering - automatic exposure, gain, white balance, black level
- Image controls include saturation, hue, gamma, sharpness

##### Audio Codec

- Sampling rates up to 48kHz, mono
- SNR > 94dB, THD < -80dB
- Programmable filters for noise suppression

##### PIR Sensor

- Maximum range ~5m
- Detection angles 80-100°

#### Software Support

This board is supported under TinyOS. Future support is planned for Linux, SOS and Microsoft .NET Micro Framework.

#### Board Interface

The IMB400 attaches to the advanced connector set of the Imote2 main-board. If desired, it can also attach to the pass-through connectors of the IIB2400 interface board. The IMB400 is also electrically compatible with the ITS400 basic sensor board and the IBB2400 battery board and can be concurrently operated with those boards as well.

Model	Description
IMB400CA	Imote2 Multimedia Sensor Board