BLUMIND

AI for Everyone, Everywhere

Application Brief

Always-on AI for Security/Safety

BM110 Always-on AI for Security & Safety

Blumind's advanced BM110 is a single, ultra-low-power, always-on device capable of detecting and classifying up to 10 distinct audio events. In home safety and security solutions, a single remote sensor equipped with a low-power analog microphone and the BM110 can detect a wide range of sounds—including glass breaking, running water, pet distress, smoke or carbon monoxide alarms, gunshots, burglar alarms, door chimes, voices, and footsteps.

The Blumind BM110, paired with an analog microphone, is the lowest-power solution for edge AI audio classification and can last for years on a typical security sensor battery. The sensors MCU processor remains in deep sleep until an event is detected by the BM110. Only then is wireless connectivity activated to notify the base station, conserving up to 99.9%+ of the battery power. This makes the BM110 ideal for distributed sensor placement in any home safety and security application.

Blumind's all-analog approach ensures system-level power, size, and cost are minimized to achieve the most efficient and easy-to-deploy solution. Further, our unique architecture enables audio classification customization and in-field updates to neural network parameters for new or targeted algorithm deployment. Our built in 2-second audio buffer can capture audio events for validation, to minimize false alarms, and allows for event playback or real-time 'drop-in' to hear what's happening.

Contact us for more information.

Blumind AMPL™ Technology

Blumind's AMPL technology is unique. The Blumind all-analog approach delivers the lowest power solution while the inherently parallel architecture delivers ultra-low latency for real time applications, all in a tiny footprint.

No high-speed clocks, ADCs, DACs, or specialty memory are used. AMPL technology is built in standard CMOS with a roadmap to advanced process node.

By exploiting advanced CMOS device physics Blumind creates single transistor neurons that are small and power efficient.

The AMPL architecture was built from the ground up to address the analog compute challenges of variations in process, temperature, voltage, and long-term drift and our results are impressive.

Standard PyTorch and TensorFlow software tools are used to create the parameters for the powerful AMPL neural network.