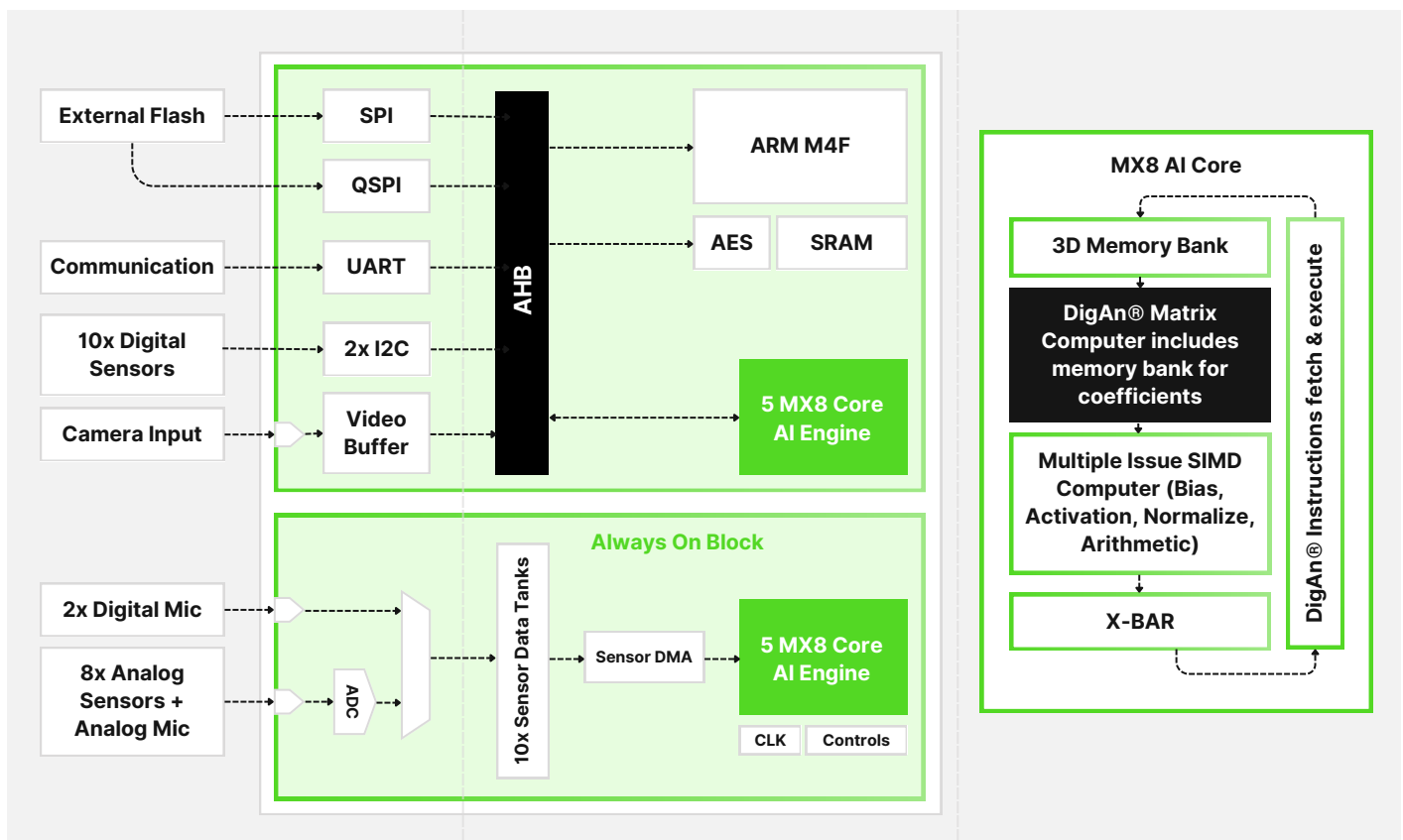


GPX10 is a single chip solution that brings AI capabilities to power constrained edge devices, unlocking significant cloud savings, near zero latency and user data privacy. Our DigAn® architecture built from the ground up, utilizes analog matrix multiplication with in-memory computing to accelerate deep learning with minimal power consumption, >100X efficiently than traditional microcontrollers. A complete system with a separate control processor and various integrated components, GPX10 can be programmed extensively using our comprehensive software suite and support for industry standard AIML frameworks. From predictive maintenance to always-on voice detection to fitness wearables, GPX10 unlocks a world of **battery-powered AI possibilities, without compromising on accuracy, flexibility or affordability.**

Block Diagram



Scalable edge AI Platform

Support for various combinations of sensors with an integrated control processor enables application flexibility



System BOM Optimization

Several integrated components within GPX10 helps reduce system BOM and makes GPX10 a single chip AI solution



Ultra-Low Power AI

Analog matrix multiplication with in-memory compute accelerates AI at >100X the power efficiency

Key Features

- > Ten MX8 programmable AI Cores for ultra-low power deep learning applications
- > Up to 2,560 MACs operations per clock cycle (256 MAC per cycle per core)
- > Peak performance of 512 GOPs at unbeatable efficiency > 7 TOPs/W
- > 256 Point FFT Engine in "Always On"
- > Sensor fusion: Unified configurable sensor data tanks up to 10 sensors
- > Stream data from any number of digital sensors to MX8 AI Cores through I2C, SPI, UART via AHB
- > Multi-Channel Ultra-low power 16-bit ADC to support up to 8 analog sensors at <5 μ W for 20K Samples/s
- > Up to 4 analog microphones and 2 Digital I2S microphone 16-Bit
- > 8-Bit DVP interface and 16KB auto streaming video buffer for low frequency image classification
- > ARM M4F 32-Bit Processor with floating point unit & wide frequency range (100 KHz to 70 MHz)
- > 256 KB System SRAM with 64KB retention SRAM in "Always On" block
- > Sophisticated clocking structure (LPO, External Clock Source, PLL) for SOC level power minimization
- > Support for multiple operand and weight resolutions (4 to 32 bit)
- > Support for standard neural networks (CNN, RNN, LSTM, FCN) as well as custom networks from scratch
- > Comprehensive software suite with AI compiler, drivers, libraries, etc.

Markets & Applications



Industrials

Predictive Maintenance



Automotive

Cabin Monitoring
Realtime Sensing



Healthcare

Fitness Wearables
Distress Detection



Consumer & Home

Home Security
Voice Control



Agriculture

Soil Sensor
Smart Irrigation

Any combination of sensors, microphones, camera inputs enables endless edge/on-device AI applications

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