CY8CKIT-062S2-AI

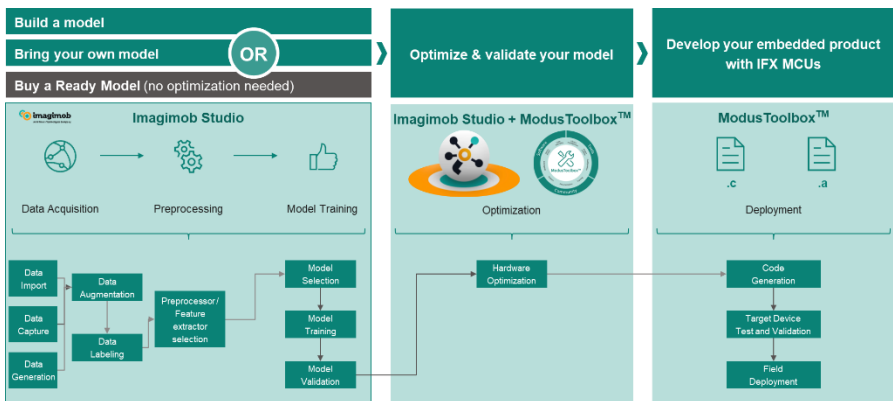## PSoC™ 6 Artificial Intelligence Evaluation Kit

Infineon's PSoC™ 6 Artificial Intelligence Evaluation Kit is your perfect partner for easy prototyping and collecting real-life data to build compelling ML products fast. Being only the size of a cracker, the hardware platform focused on Edge AI enables customers to evaluate Infineon's Machine Learning platform Imagimob Studio, as well as ready to deploy ML models, and other software products.

Data collection is enabled via PSoC™ 6 MCU, as well as Radar (BGT60TR13C), high-performance digital MEMS microphone (IM72D128), Barometric Air Pressure Sensor (DPS368) & IMU sensors (Bosch BMI-270, BMM-350). Connectivity is enabled with WiFi/BT BLE Combo (Murata LBEE5KL1YN).

END-TO-END MACHINE LEARNING TO EMBEDDED SOFTWARE JOURNEY

No matter whether you have an ML model already and want to deploy on a target HW, or whether you want to create a new model, you can enter at any stage with Imagimob Studio.

CODE EXAMPLES (Highlights)

– Imagimob Data Collection with IMU and Microphones: Collect your own data and feed it into Imagimob Studio for custom model creation.

– Imagimob Optimized Model Deployment: Deploy your newly created model optimized and quantized for the PSoC™ 6.

– Radar Presence Detection: Detect whether there is somebody within range of the kit.

– Wireless Connectivity for Cloud Connection and Reporting: Keep the edge informed of its intelligence by synchronizing within the cloud.

Key features

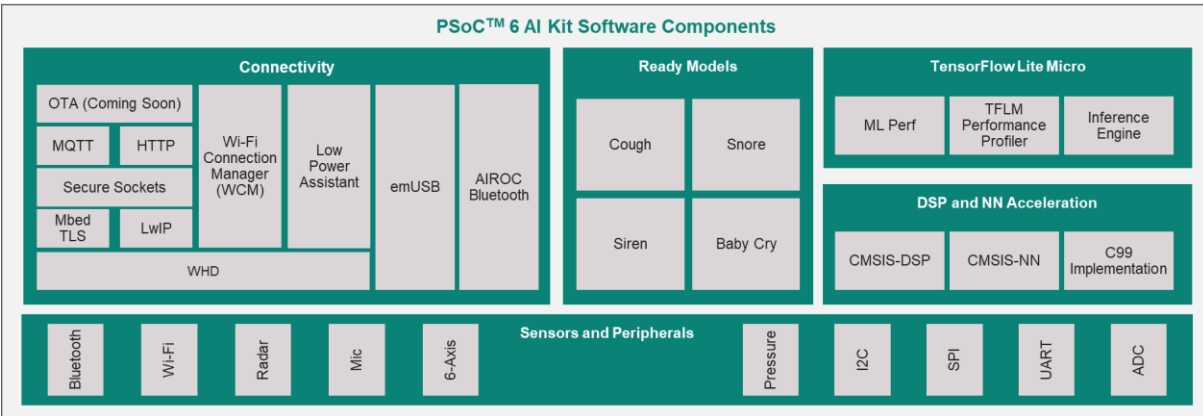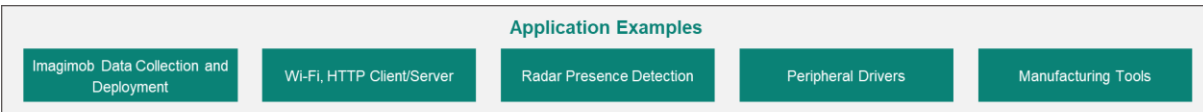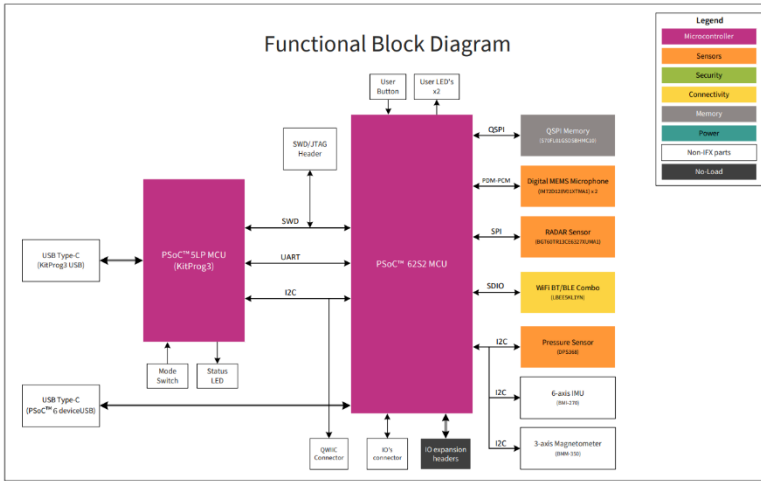**Designed for ease-of-use and end-to-end Machine Learning**

– Small form-factor (35x45mm), wireless, low cost

– Solution approach with PSoC™ 6, QSPI Flash + multi-sensor input (radar, micro-phone, pressure & 6-axis motion sensors)

– Production ready ML models: Imagimob Ready Models (siren, coughing, baby cry, snoring)

– Complete ML to embedded SW journey: ModusToolbox™ & Imagimob Studio compatible

Key benefits

– Low-cost evaluation board with efficient form factor for easy prototyping

– Rapid prototyping: Easy creation of sensor fusion-, ML-, acoustic-, time series- and radar models

– Fast time to market at minimal development cost, direct launch for PSoC™ 6 & AURIX™

– End-to-end: Collect data, create, train, evaluate & deploy ML models fast

– Seamless integration to ModusToolbox™ and Imagimob Studio with application code examples

FUNCTIONAL BLOCK DIAGRAM & SOFTWARE ARCHITECTURE

Functional Block Diagram

Application Examples

| Imagimob Data Collection and Deployment | Wi-Fi, HTTP Client/Server | Radar Presence Detection | Peripheral Drivers | Manufacturing Tools |

PSoC™ 6 AI Kit Software Components

Connectivity

- OTA (Coming Soon)
- MQTT
- HTTP
- Secure Sockets
- Mbed TLS
- LwIP
- Wi-Fi Connection Manager (WCM)
- Low Power Assistant
- emUSB
- AIROC Bluetooth
- WHD

Ready Models

- Cough
- Snore
- Siren
- Baby Cry

TensorFlow Lite Micro

- ML Perf
- TFLM Performance Profiler
- Inference Engine

DSP and NN Acceleration

- CMSIS-DSP
- CMSIS-NN
- C99 Implementation

Sensors and Peripherals

- Bluetooth
- Wi-Fi
- Radar
- Mic
- 6-Axis
- Pressure
- I2C
- SPI
- UART
- ADC

Important Links

- Find out more about the kit **here**
- Download the Imagimob Studio development tool **here**
- Evaluate one of our Ready Machine Learning Models **here**

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