Edge AI Starter Kit - /docs/ Overview

# 1. System Architecture Diagram – ABOX-5220 Integration

The Edge AI Vision + Sensor Gateway architecture leverages Sintrones ABOX-5220 rugged hardware platform. The system integrates multiple subsystems:  
- Edge AI Inference (YOLOv5/OpenVINO) via GPU or Intel iGPU  
- Sensor Interface via CANBus, Modbus, and MQTT  
- Streamlit/Grafana dashboard visualization layer  
- Connectivity via 5G module and GPS for mobile applications  
- Data ingestion from USB/PoE camera, RS232 sensors, and GPIO inputs  
  
Data flow: Camera/Sensors → Inference → MQTT Broker → Dashboard/Cloud

# 2. Wiring Guide – ABOX-5220 Connections

Below is the basic wiring setup for integrating sensors and peripherals with ABOX-5220:  
- USB/PoE Camera: Connect via USB 3.0 or PoE port (if using PoE injector)  
- Modbus Sensors: Use RS485/RS232 ports and connect to Modbus-compatible industrial sensors  
- CANBus Devices: Connect via DB9 port (CANBus) using proper termination  
- MQTT Communication: Requires Ethernet or 5G connectivity to MQTT broker (e.g., Mosquitto)  
- GPS Module: Use mini PCIe 4G/5G card with GPS support  
- GPIO Inputs: Use 10-pin Phoenix-type connector for digital inputs (e.g., motion sensors, buttons)