



iCOMOX PoE AI

Intelligent Condition Monitoring Box – an open platform for Condition Based Monitoring (CBM) of industrial equipment, assets and structures.

iCOMOX monitors operating conditions from the surface of the equipment to identify potential faults and reduce risks associated with equipment operation and maintenance. This extends the lifetime of the equipment, reduces unplanned downtime, cuts maintenance costs and unlocks potential for energy savings.

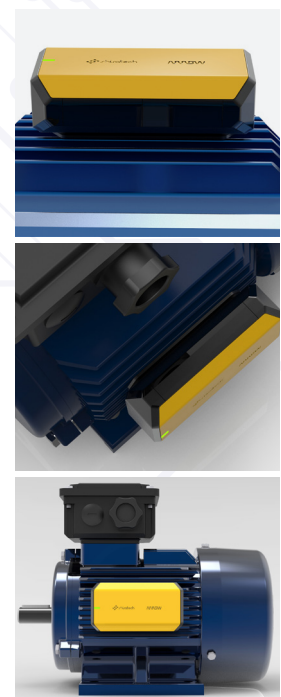
iCOMOX PoE uses 10/100Base-TX Ethernet PoE to send sensor data, status and analysis to the the cloud (IPv4/IPv6, TCP/IP).

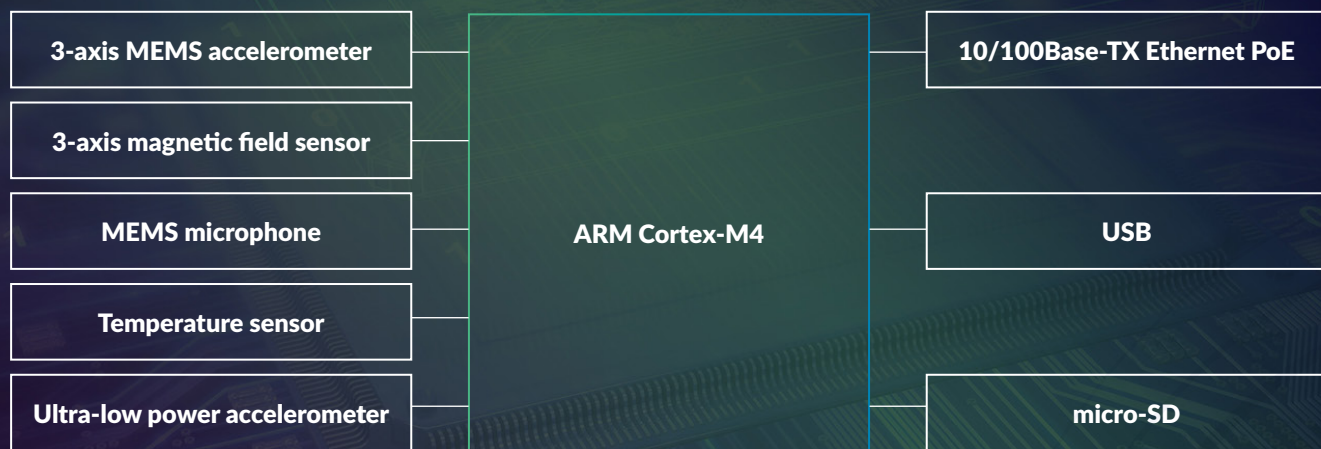
iCOMOX PoE AI contains an integrated embedded memory optimized AI library which:

1. Analyzes sensors data in the frequency domain
2. Trains from selectable sensors data
3. Automatically infers anomalies from the trained states

KEY FEATURES

- Open embedded sensor-to-cloud platform
- Multi-sensing: vibration, magnetic field, temperature and sound sensors
- High dynamic range and exceptional SNR for vibration analysis
- High performance acoustic emission detection
- Non-invasive current sensing for motor current signature analysis
- 10/100Base-TX Ethernet PoE port
- Supports IPv4/IPv6
- Supports TCP/IP
- Embedded AI library for training of asset typical behavior and inferring anomalies from its normal operation
- Ability to configure warning and alarm levels and timestamp events for each sensor
- CE and FCC certified with IP65 enclosure
- Compact form factor for external and under hood mounting
- Various mounting adapters to accommodate a wide range of monitored equipment
- Easy to install, use and maintain platform concept





APPLICATION PROCESSOR

- **ADuCM4050** from **Analog Devices**
- Ultra-low power ARM® Cortex®-M4F MCU with integrated power management
- SensorStrobe™ technology with 10x system-level power savings
- Memory - 512 kB of embedded flash memory with ECC and 128 kB of configurable system SRAM with parity
- Analog peripherals - 12-bit SAR ADC, 1.8 MSPS, 8 channels
- Security - hardware cryptographic accelerator supporting AES-128, AES-256, and SHA-256

VIBRATION SENSORS

- **ADXL356** from **Analog Devices**
- Low noise, low drift, low power, 3-axis MEMS accelerometer
- ±10g, ±20g and ±40g ranges
- 5.5kHz resonant frequency with adjustable analog output bandwidth
- Excellent long-term stability from -40°C to +125°C
- Integrated temperature sensor
- **ADXL362** from **Analog Devices**
- Ultra-low power, 3-axis MEMS digital accelerometer
- ±2g, ±4g and ±8g ranges
- Motion activated wake up mode

MAGNETIC FIELD SENSOR

- **BMM150** from **Bosch**
- Low power and low noise 3-axis magnetic field sensor
- Extended measurement range of ±1300 μT (x-, y- axis) and ±2500 μT (z-axis) with 0.3 μT resolution
- Adjustable output bandwidth >300Hz

SOUND SENSOR

- **IM69D130** from **Infineon**
- High performance microphone with dual backplane MEMS technology
- 105dB dynamic range and 69 dB(A) SNR
- Below 1% THD at 128 dB SPL
- Flat frequency response with low frequency roll off at 28Hz

TEMPERATURE SENSOR

- **ADT7410** from **Analog Devices**
- ±0.5°C accurate with 16-bit resolution
- -55°C to +150°C temperature range
- Programmable interrupts

COMMUNICATION

- 10/100Base-TX Ethernet PoE port
- IPv4/IPv6
- TCP/IP

SECURITY

- OPTIGA™ Trust X from Infineon
- High end security controller
- Mutual authentication using DTLS client (IETF standard RFC 6347)
- Secure communication using DTLS
- Up to 10 KB user memory
- Cryptographic support: ECC256, AES128, SHA-256, TRNG, DRNG

OTHER FEATURES

- Micro SD card connector
- USB-C connector, USB2.0 full speed compatible
- LED status indicator lights
- Operating temperature from -40 °C to 85 °C
- Advanced SW and analytics for early fault detection on demand
- User-programmable sensor interrupts for triggering events
- Cloud connectivity (MQTT, TCP/IP)
- Optional cloud apps and advanced analytics

ORDERING OPTIONS

iCOMOX PoE AI P/N: SRT-ICOMOX-POE-SEC-AI

