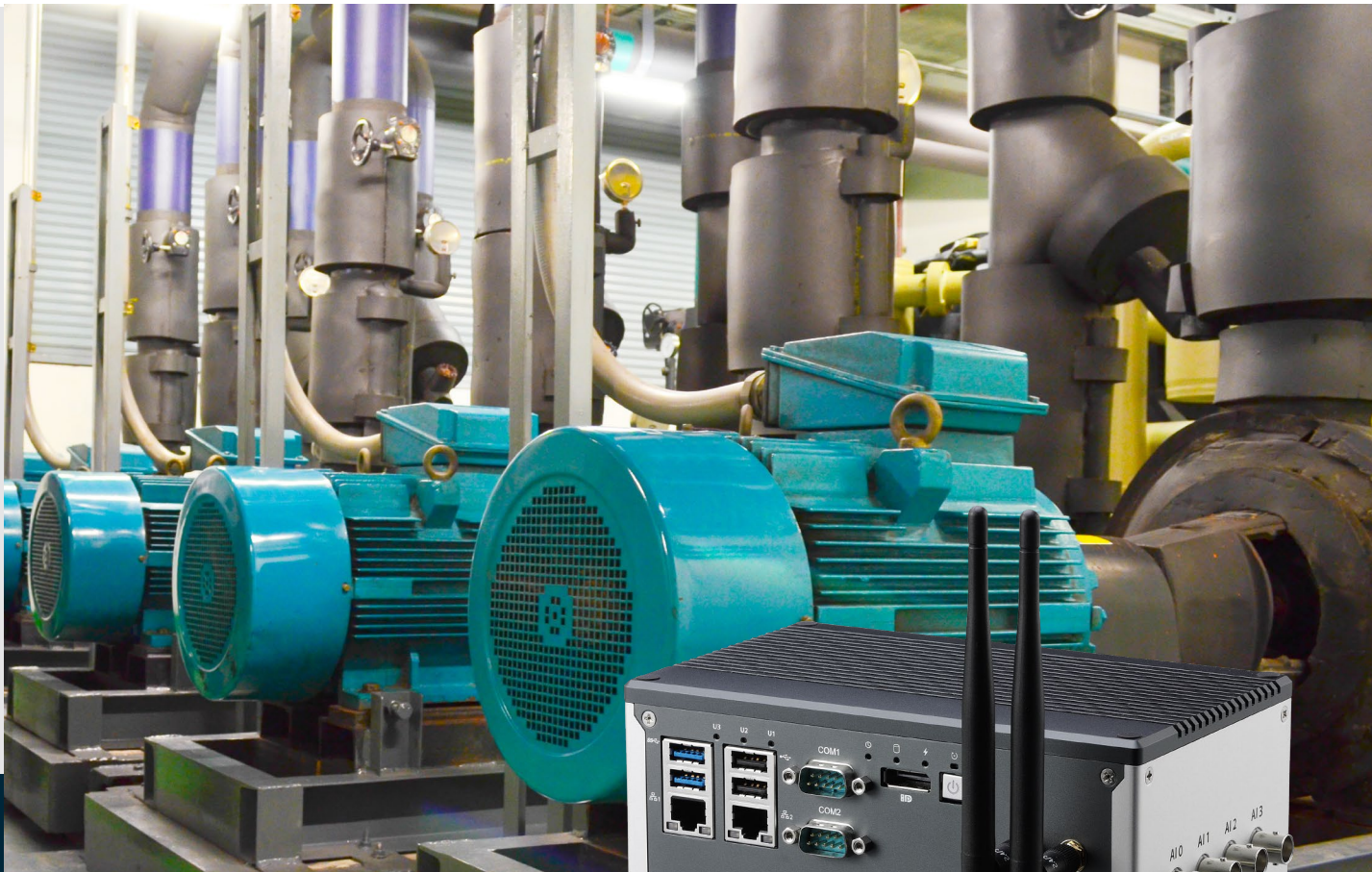


# Intelligent Machine Condition Monitoring Solution

## The Smart Way to Guard Your Assets



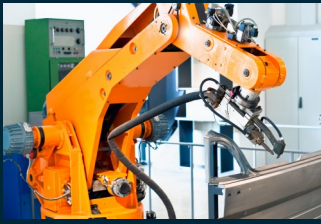
Up to  
**70%**  
reduction of unplanned  
downtime

**30%**  
reduction of maintenance-  
related expenses

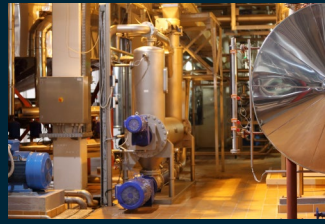
Up to  
**10%**  
increase in production  
efficiency

ADLINK's MCM-100 machine condition monitoring edge platform highlights around-the-clock continuous data collection and vibration measurement with maximized precision and sampling rates for rotating machinery and equipment. Combining data collection, vibration analysis algorithms, computation and network connection in one system, the MCM-100 enables rotating machinery, tooling, and plant and automation equipment operators to easily overcome challenges inherent in conventional equipment maintenance.

# Who Need the MCM Solution ?



Robotics



Machinery



Automotive



Energy



## Facility Management

- Increased equipment availability / uptime
- Reduced maintenance-related costs



## System Integrators

- Compact and easy to integrate
- High performance at affordable price point



## Machine Builders

- Enhanced performance increases sales
- Value-adding data analysis and management capabilities



Cost-effective



All-in-one



Simplify Programming



High-precision



Data Connectivity

## MCM-100

Simple Connection, Configuration, and Operation in all-in-one MCM Edge Platform

## Fast, Simple Whole-System Setup with No Downtime

- Integrated function in compact construction provides full operability in harsh operating environments
- Built-in IEPE 2mA excitation current source on each channel requires no additional signal conditioning
- Included accelerometer attaches magnetically, allowing easy relocation to any test point, avoiding costs and effort of non-adjustable tapping meters



Data Acquisition



Data Computing and Analysis



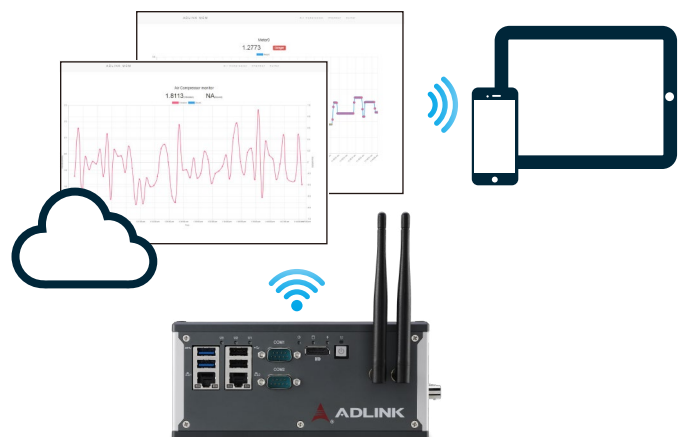
Data Upload

## Complete One-Operation Data Acquisition, Analysis, and Upload

- 4CH 24-bit 128kS/s simultaneous sampling meets requirements of machine vibration measurement
- Intel Atom® x7-E3950 processor delivers edge-based data acquisition, domain algorithm, data analytics capability, converting machine status, usage trends, alarms, and more for distribution
- LAN port and optional wireless Wi-Fi module support allows easy data connectivity

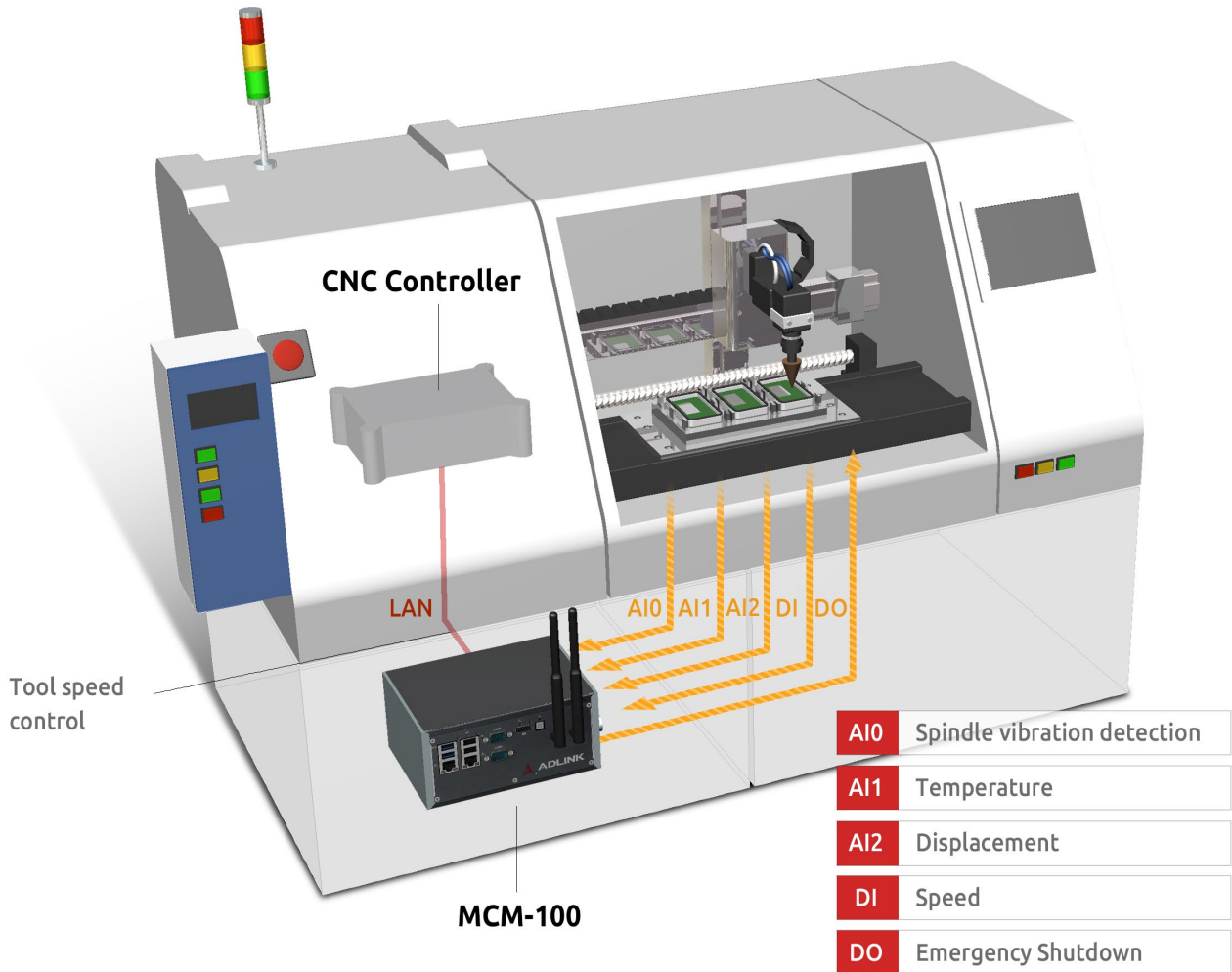
## Real-time Monitoring & Intelligent Management

- Easy to implement third party web dashboard enables remote acquisition of machine status for real-time maintenance activation to ensure uninterrupted operation
- Automatic recording of machine information to enable long-term machine health monitoring allows establishment of maintenance plans and reduces costs
- Machine builders can integrate big data analytics to conduct further research on relationships between signal changes and machine failure to enhance value-added services





# CNC Machining Vibration Monitoring



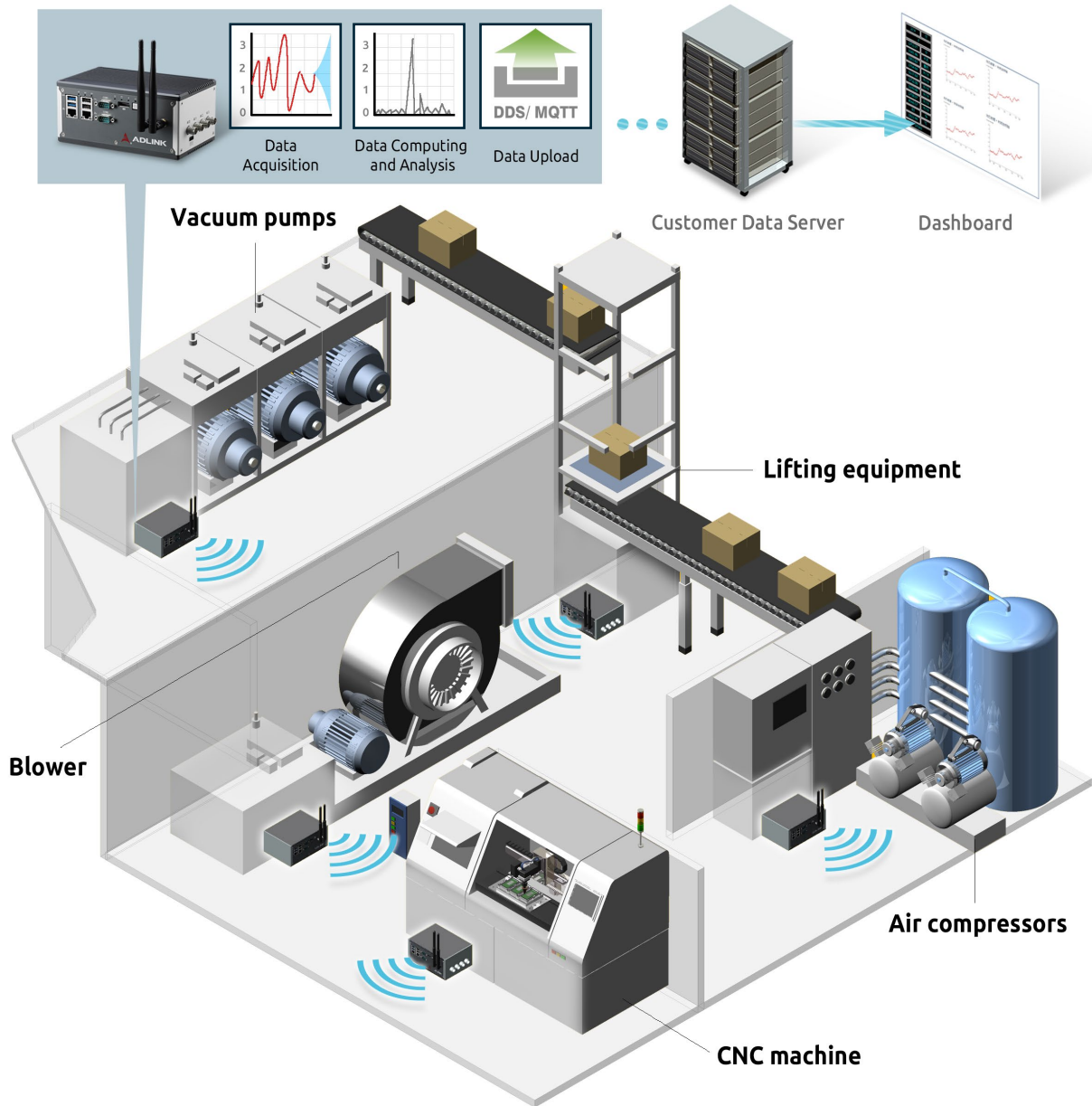
## Introduction

CNC machinery's continuous vibration monitoring makes equipment conditions readily available, increasing the intelligence of the operation. No longer required wait for production to complete problems, users can conduct preventive inspections to instantly detect equipment irregularity as it starts and promptly take responsive actions. Slight deviations can be resolved in no time by adjusting process parameters (e.g. modifying spindle speed) or changing cutting tools to ward off potential future disasters to increase machining precision or boost equipment availability.

## Customer Benefits

- All-in-one system integrates PC, DAQ and signal conditioning modules to simplify connection and system integration, speed fabrication and reduce costs
- High precision can fulfill the requirement the spindle & bearing vibration detection. When an abnormal collision is detected, the spindle can be stopped immediately to reduce the damage.
- Slight deviations can be resolved in no time by adjusting process parameters, such as spindle speed, or changing cutting tools to ward off potential malfunctions, reducing maintenance costs

# Air Conditioner Manufacturing Plant Predictive Maintenance



## Introduction

Lifting equipment, vacuum pumps, air compressors, and other rotating equipment are indispensable in many manufacturing and processing installations. Accordingly, unexpected machine failure causing production shutdown will result in huge losses. ADLINK's intelligent machine monitoring solution replaces conventional manual inspection methods, providing 24/7 online monitoring and failure prediction, accurate control of machine status, and responsive maintenance in real time.

## Customer Benefits

- All-in-one design simplifies wiring efforts, minimal footprint allows quick and easy installation in proximity to equipment with reduced wiring costs
- LAN port and optional wireless Wi-Fi module support allows easy data connectivity
- Built-in edge computing significantly reduces the amount of cloud data on the Internet and service fees

# MCM-100 Specification

Model Name		MCM-100	
<b>System Specification</b>		<b>Mechanical</b>	
Processor	Intel® Atom™ x7-E3950 processor	Dimensions	183 (W) x 110 (D) x 83.85 (H) mm
Video	1x DisplayPort	Construction	Full Aluminum Alloy
Memory	DDR3L 1066 SODIMM 2 GB	Mounting	DIN-rail/wall mountable
Storage	Factory installed 128 GB mSATA SSD	<b>Environmental</b>	
Ethernet	2x GbE LAN (Intel® I210-IT)	Operating Temperature	0 to 55°C (32 to 131°F)
Serial Port	2x COM (2 x RS-232/422/485)	Storage Temperature	-20 to 70°C (-4 to 158°F)
USB	2x USB 2.0 + 2x USB 3.0	Humidity	approx. 95% @ 40°C (non-condensing)
Mini PCIe	2x Mini PCIe card slots	Vibration	Operating 5 Grms, 5-500 Hz, 3 axes w/ mSATA SSD
Wireless Kit (option)	Wi-Fi/4G LTE wireless Kit	ESD	Contact +/-4 KV, Air +/-8 KV
Power Supply	6-36 VDC, Optional 40W AC/DC adapter	Shock	Operating 100 G, half sine 11 ms duration w/ mSATA SSD
		EMC	CE & FCC Class B (EN61000-6-4/EN61000-6-2)
<b>Vibration Measurement I/O Specification</b>			
Channels	4CH	AC Cutoff	0.4Hz (-3dB), 2.4Hz (-0.1dB)
Resolution	24-Bit	Flatness	±0.01 dB (20 Hz to 1 kHz)
Max. Sampling Rate	128 kS/s	CMRR	60 dB (20 Hz to 1 kHz)
Input Range	±10V	Crosstalk	-100 dB
Input Mode	Diff/P-Diff	Dynamic Range	100 dB
Input Coupling	AC/DC	SFDR	104 dB
IEPE Excitation Current	0 or 2mA (IEPE compliance: 24V)	THD	-94 dB
Over-Voltage Protection	±60V	THD+N	-91 dB
DC accuracy - Offset Error	Typical: ±0.15mV, Max. ±0.3mV	Trigger Source	Analog or digital, software selectable
DC accuracy - Gain Error	Typical: ±0.15%, Max. ±0.3%	Trigger Mode	Post, delay, middle, pre-trigger, re-trigger
System Noise	50 µVrms	Auto-Calibration	YES
-3dB Bandwidth	0.49 * sampling rate	DIO	2 programmable function I/O

## Software Support

- Windows 10 IoT Enterprise/ Windows 10 IoT Core
- Ubuntu Linux

## Driver and SDK

- LabVIEW, MATLAB, C/C++, Visual Basic, Visual Studio. NET

## Optional Accessories

- **ICP Accelerometer IMI\_603C01**  
ICP Accelerometer IMI\_603C01, 100mV/g, 0.5 to 10kHz, 2-pinn conn. w/ 10-ft cable and magnetic mount
- **GM Lite License Key**  
Software License key for Phoenix GM Lite
- **WIFI/BT KIT**  
FANGTEC WIFI/BT KIT(EA) WLAN 802.11ac 2T2R+BT4.0 Half Mini Card
- **AC-DC ADAPTER 40W**  
MEANWELL,GST40A24-AD, Input:90~264Vac/40W, Output:24Vdc/1.67A



## Rotary Machine Condition Monitoring Starter Kit

\*The Rotary Machine Condition Monitoring Starter Kit is available for immediate confirmation of solution POC.

