

RONDS Intelligent Wireless Condition Monitoring System



1. System General Introduction

RONS INTELLIGENT WIRELESS CMS is positioned on industrial enterprises, which is developed by RONS Company for scattered measuring points and unavailable wiring work. It integrates vibration, temperature signals.

System hardware includes RH560 wireless collection station, RH505 wireless vibration & temperature integrated sensor. The online PC software MOS3000 is used to monitor machine real time condition, help users to learn machine's fault in advance and avoid unplanned downtime.

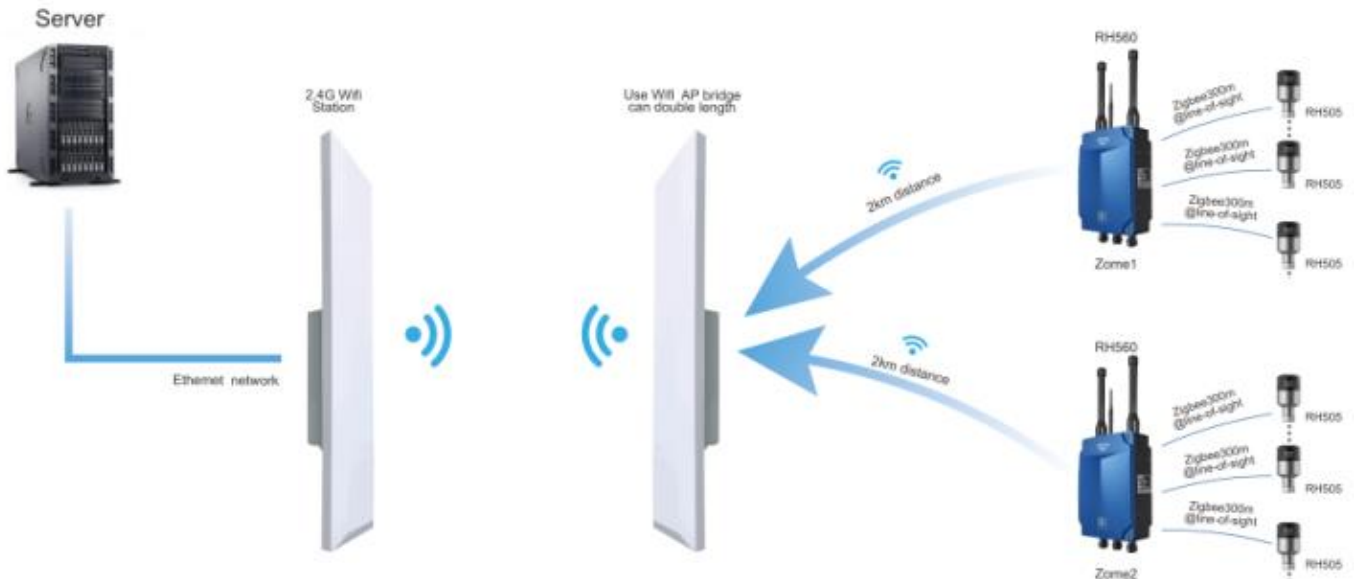
2. Wireless Condition Monitoring System Topology



2.1 Wireless solution 1



2.2 Wireless solution 2



2.3 Wireless solution 3



3. System features

Smart data acquisition and processing

With IWMS and pre-set DAQ strategy, complete data acquisition, processing and transmission of machines' vibration (acceleration, velocity and displacement) and temperature signal, achieve smart monitoring, ensure machine safety and continuous running

Synchronous acquisition and analysis of temperature and vibration data

RONDS IWMS synchronously collects temperature and vibration signal, it increases machine safety through dual monitoring of vibration and temperature data.

Intelligent alarm for abnormal machines

Adopting various kinds of alarm parameters: overall value, index (available in Synchronous version), temperature, etc., ensure the accuracy and timeliness of alarm information

Convenient installation

RONDS IWMS has no signal cable during installation, 2 years battery life of wireless accelerometer, secure installation of accelerometer with magnet base and M6 bolt. Satisfy the requirement of explosion proof degree on site

Four in one sensor--vibration and temperature integrated sensor

Integrated design, synchronous collection of acceleration, velocity and displacement and temperature

One key upgrade of hardware and software

One key remote upgrade, system upgrade is quick, accurate, efficient and convenient.

4. Hardware introduction

4.1 Wireless vibration and temperature sensor RH505



Internally acceleration and temperature sensor, collect velocity, acceleration, displacement and temperature signals simultaneously. The vibration signal can be displayed as spectrum waveform in software.

Zigbee communication, for onsite use specially, strong anti-jamming capability, long distances transmission from data collector according to real industrial conditions.

Φ42mm*h65mm, small volume, easy to fix and maintain.

Low battery consumption design, collect data by every two hours, sustainable work for 2 years or longer.

Intelligent self-inspect function, warning for abnormal any time, saved time to check on site.

Exia IICT4, can be used in 0 area, IP67, waterproof, dustproof.

RH505 Wireless Vibration and Temperature Integrated Sensor	
Vibration Measurement Parameter	
Vibration Range	±50 g
Linearity	1%
Frequency Range (±3dB)	2~20kHz
Sampling frequency	1280Hz~51.2kHz
Analysis frequency	500Hz, 1kHz, 2kHz, 5kHz, 10kHz, 20kHz
Waveform Length	1K, 2K, 4K, 8K, 16K, 32K, 64K, 128K
Lines	400, 800, 1600, 3200, 6400, 12800, 25600, 51200
Long time waveform	Maximal length 2M
Temperature Measurement Parameter	
Temperature Range	-40~125 °C
Temperature Accuracy	±1 °C (-40°C~125°C)
Electrical and Structure Parameter	
Power Supply	Lithium - thionyl chloride battery, 3.6V, 3.3Ah
Communication Method	2.4GHz IEEE 802.15.4
Dimension	46 mm × 94 mm (Diameter * Height)
Weight	188 g

Environment Parameter	
Working Temperature	-40~70 °C
IP grade	IP67

4.2 Wireless vibration data collector RH560



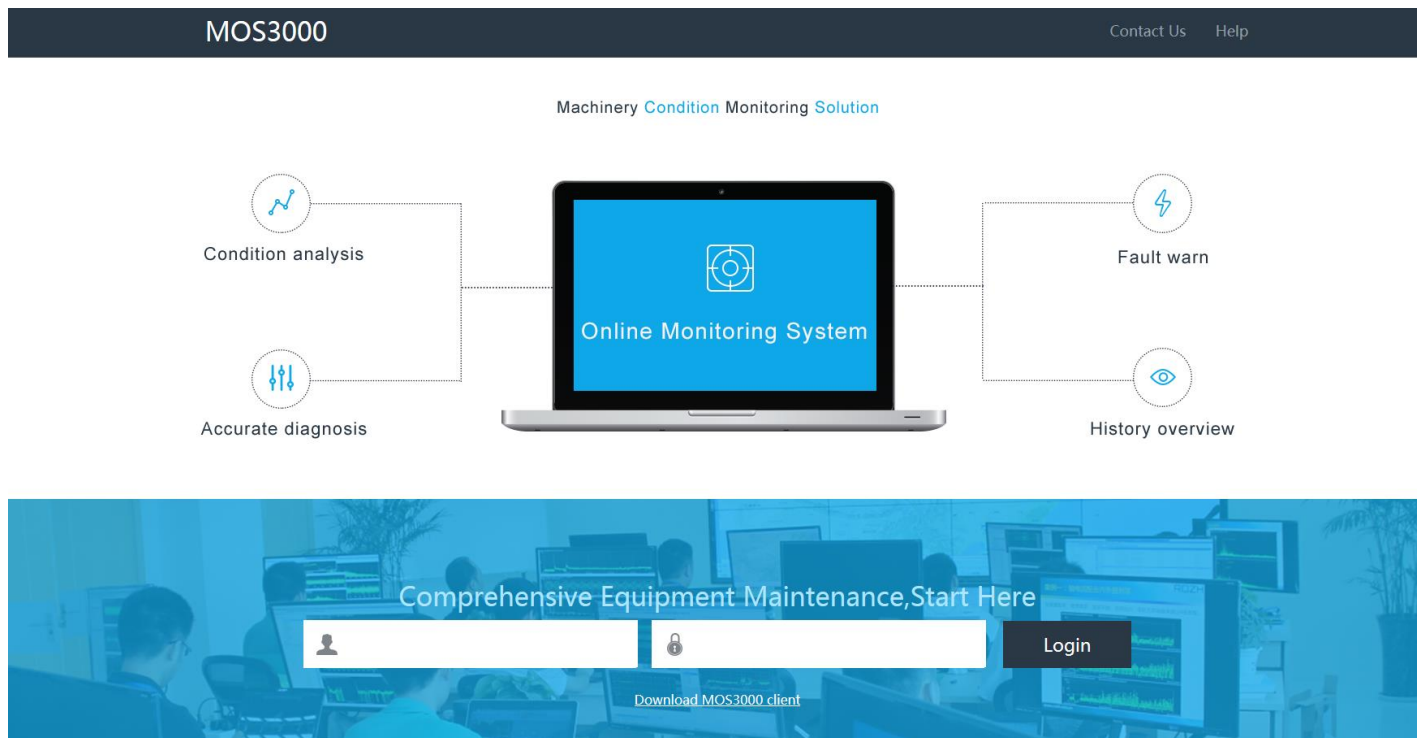
3G/4G,Wifi, optical or network data transmission.

Anti-explosion design (ExdIICT4), suitable for ZONE 1 and ZONE 2

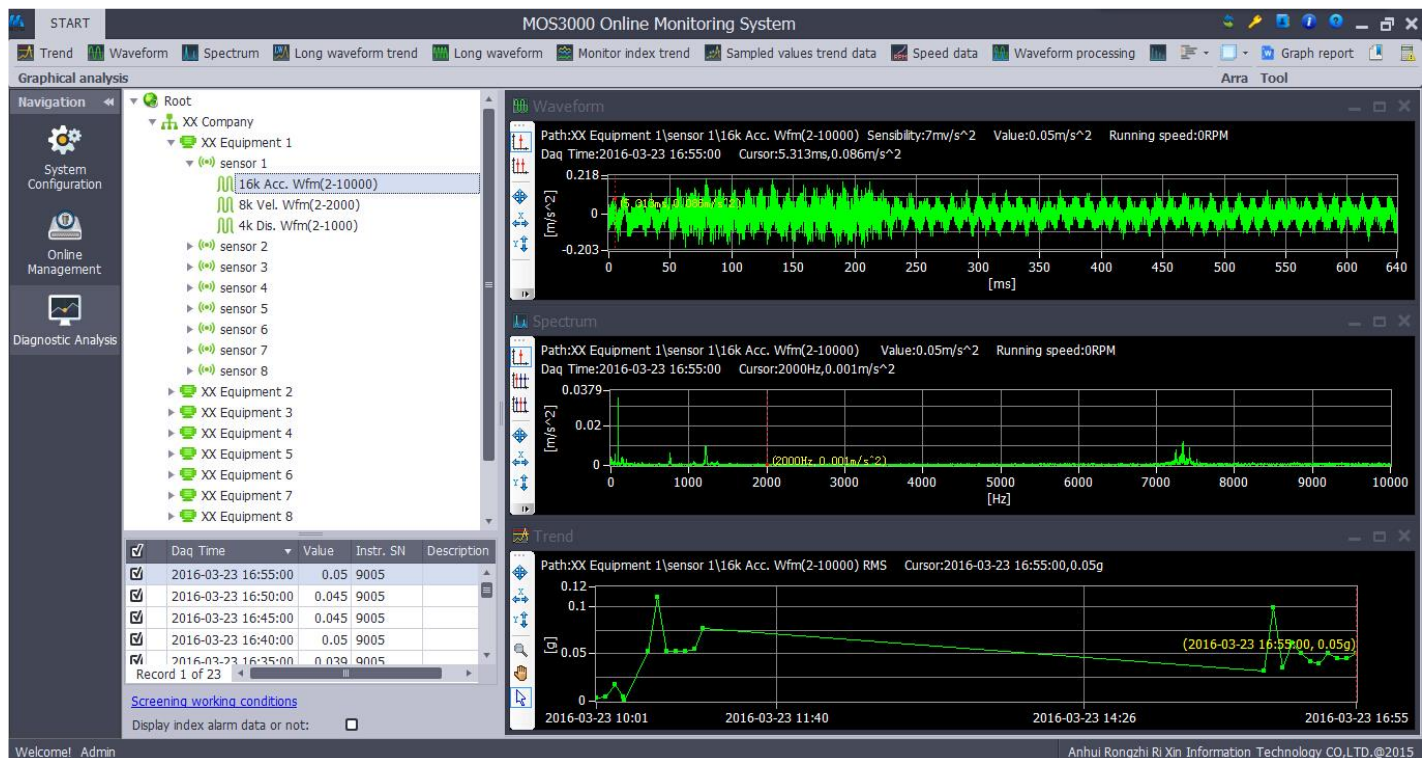
RH560 Wireless data collector	
Input and output	
Communication with Sensor	2.4GHz IEEE 802.15.4
Indicator LED	Total 3 pieces (working, communication, abnormal status)
Number of RH505 connecting	30~60 units according to real application condition
Electrical and Structure Parameter	
Power Supply	220V AC
Dimension	203 mm × 82 mm × 260 mm (Length * Width * Height)
Weight	3 kg
Mounting	Hanging or fixation through holder
Environmental Parameter	
Working Temperature	-40~70 °C
IP grade	IP66

5. MOS3000 Software feature

5.1 Web page, can view machine condition anytime, anywhere.



Tree structure, Easy to check by Admin



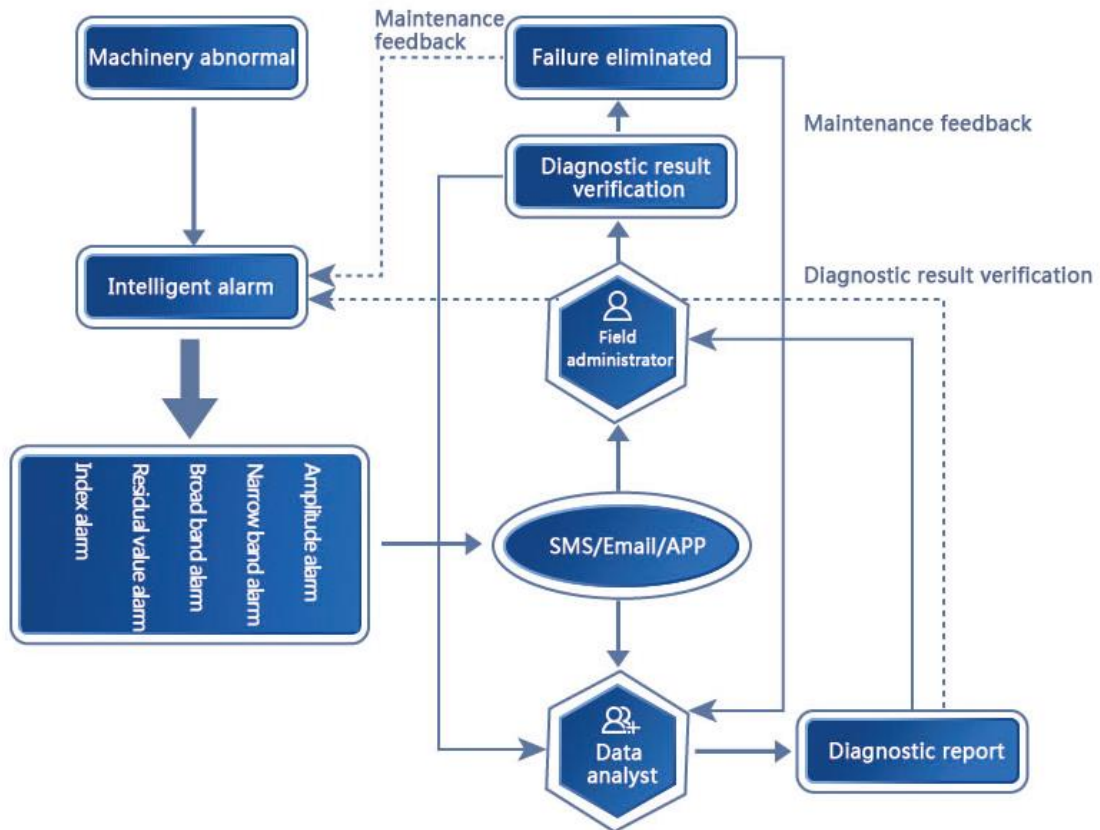
5.3 SMS/Email A, learn condition anywhere



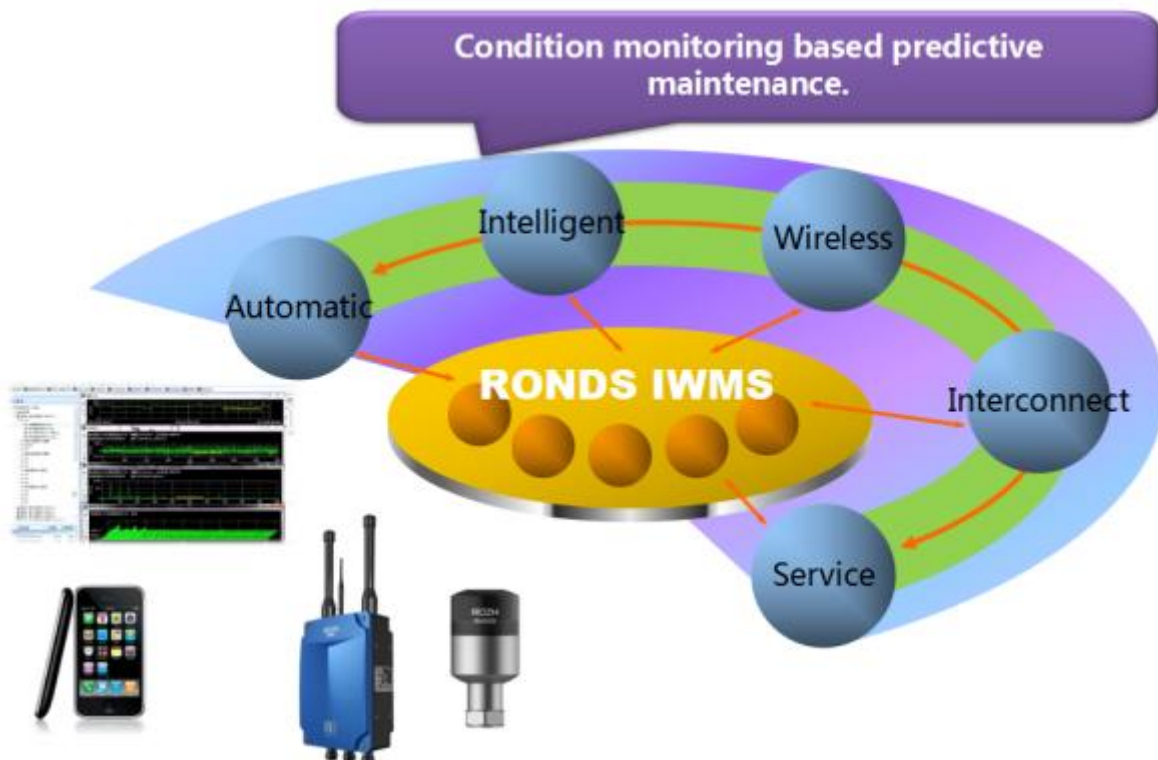
5.4 Intelligent Machinery Condition Monitoring Solution

MOS3000	System setting	Statistical information	
		Log management	
		Machine configuration	
		User authority	
	Self-diagnosis	Identify network abnormal	
		Identify collection station abnormal	
		Identify sensor abnormal	
		Generate fault components frequency	
	Report	Different reports	
		Diagnosis report	
		Inspection report	
	Index analysis	Margin	Frequency band energy
		Pulse	Average value
		Peak	Minimum value
		Crooked	Maximal value
		Kurtosis	Rad. amplitude
	Condition analysis	Long time waveform	Envelope
		Multi spectrum trend	Cepstrum
		Multi time waveform	Channel temperature trend
		Trend	Speed waveform
		Spectrum	Waterfall
		Time waveform	
	Condition monitoring	Browse alarm information	
		Browse machine detailed condition	
		Operation condition monitoring	

5.5 Intelligent alarm and response system



6. System advantages



7. A complete unit system contains:

1 pc data collector RH560

2 pcs data collector antenna

1 pc disk with MOS3000 and user manuals

n pcs wireless vibration and temperature sensor RH505

1 pc Certificate of approval

1 pc Warranty card