

Intelligent Wireless Vibration & Temperature Monitoring System



1. System General Introduction

The Wireless Vibration and Temperature Monitoring System (Smart VMS) is positioned on industrial enterprises, which is developed for scattered measuring points and unavailable wiring work. It integrates vibration, temperature signals.

System hardware includes Wireless Zigbee Gateway, Wireless Vibration & Temperature integrated sensor. The online PC software is used to monitor machine real time condition, help users to learn machine's fault in advance and avoid unplanned downtime.

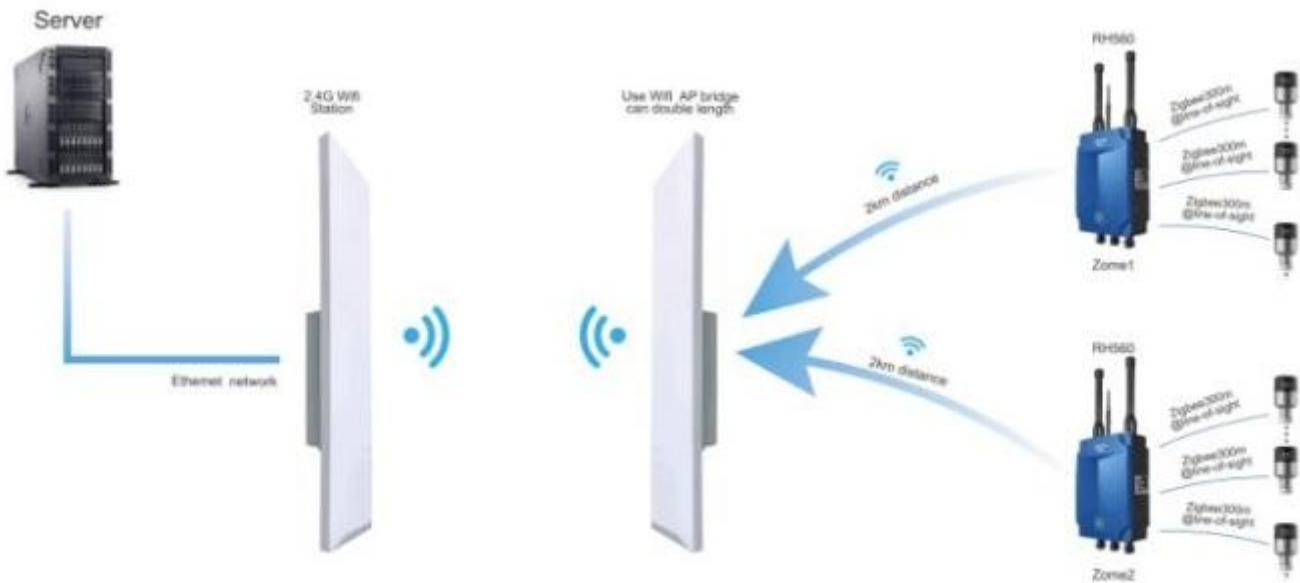
2. Wireless Condition Monitoring System Topology



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

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

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 explosionproof 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



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.

ExiaIICT4, 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 Zigbee Gateway



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

Anti-explosion design (ExdIICT4), suitable for harsh environment.

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. Software Features

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

MOS3000

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Machinery Condition Monitoring Solution

Comprehensive Equipment Maintenance, Start Here

[Download MOS3000 client](#)

Tree structure, Easy to check by Admin

Navigation

- System Configuration
- Online Management
- Diagnostic Analysis

Graphical analysis

- Root
 - XX Company
 - XX Equipment 1
 - sensor 1
 - 16k Acc. Wfm(2-10000)
 - 8k Vel. Wfm(2-2000)
 - 4k Dis. Wfm(2-1000)
 - sensor 2
 - sensor 3
 - sensor 4
 - sensor 5
 - sensor 6
 - sensor 7
 - sensor 8
 - XX Equipment 2
 - XX Equipment 3
 - XX Equipment 4
 - XX Equipment 5
 - XX Equipment 6
 - XX Equipment 7
 - XX Equipment 8

Daq Time	Value	Instr. SN	Description
2016-03-23 16:55:00	0.05	9005	
2016-03-23 16:50:00	0.045	9005	
2016-03-23 16:45:00	0.045	9005	
2016-03-23 16:40:00	0.05	9005	
2016-03-23 16:35:00	0.039	9005	

Record 1 of 23

[Screening working conditions](#)

Display index alarm data or not:

Waveform

Path:XX Equipment 1\sensor 1\16k Acc. Wfm(2-10000) Sensibility:7m/s² Value:0.05m/s² Running speed:0RPM
Daq Time:2016-03-23 16:55:00 Cursor:5.313ms,0.086m/s²

Spectrum

Path:XX Equipment 1\sensor 1\16k Acc. Wfm(2-10000) Value:0.05m/s² Running speed:0RPM
Daq Time:2016-03-23 16:55:00 Cursor:2000Hz,0.001m/s²

Trend

Path:XX Equipment 1\sensor 1\16k Acc. Wfm(2-10000) RMS Cursor:2016-03-23 16:55:00,0.05g

Welcomel Admin Anhui Rongzhi Ri Xin Information Technology CO.,LTD.©2015