

# ULTRAPROBE 9,000

## Bearing Analysis



# 9,000 BEARING ANALYSIS



Ultraprobe 9,000 Bearing Analysis

NOTE: UE DMS software available for download at [www.uesystems.com](http://www.uesystems.com)

## FUNDAMENTALS



Bearing analysis using Ultrasound technology is a non intrusive method for bearing assessment in real time with no impact to equipment operation.



Known as **condition monitoring**, ultrasonic mechanical analysis uses changes in sound, to provide direct access into the real time condition of facility assets. Directly supporting Reliability Centered Maintenance.



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## POWERING ON



To power on the Ultraprobe 9,000, pull and hold the trigger. Keep the trigger pulled for instrument to remain **ON**. The instrument will power on in the main display.



The Ultraprobe 9,000 will power on in default mode of 40 kHz with sensitivity at maximum.

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## INITIAL SETUP



Initially, downloading the DMS software from [UESystems.com](http://UESystems.com) will allow inspectors to build a database for each bearing within the facility.

Each route can be downloaded to the Ultraprobe 9,000 for organized data collection.

Ultraprobe DMS

Edit Communications Notifications Help

Hayes Street

Bearing

Mech. Room (13/3)

Points Currently In

MOTOR 1

- MOB (001)
- 10/24/2016 8:31:14 AM
- 11/23/2016 8:31:18 AM
- 12/26/2016 8:31:21 AM
- 1/20/2017 8:31:25 AM
- 2/19/2017 8:31:29 AM
- 3/19/2017 8:31:32 AM
- 4/19/2017 8:31:35 AM
- 5/25/2017 8:31:39 AM
- 6/24/2017 8:31:42 AM
- 7/23/2017 8:31:45 AM
- 8/23/2017 8:31:49 AM
- 8/23/2017 8:31:53 AM

MIB (002)

PIB (003)

POB (004)

Electrical

Generic

Leak

Steam

Valve

Record Information Images History Chart Alarms Reports Versions UE 4Cast

Date/Time: 10/24/2016 8:31:14 AM

Module Type: SCM

Inspector ID: [ ]

dB: 31

Frequency: 30

Mode: Real Time

Sensitivity: 70

Alarm: 39

Offset: 0

Location / Machine: MOTOR 1

Point: [ ]

MOB: [ ]

Comments: [ ]

WAV File: c:\programdata\ue systems\file\_data\cache\fd7d9519d7-48b88160561eae7af55hariff6

Record Path: Hayes Street/Bearing/Mech. Room/MOTOR 1/MOB.1

Test Result: INP

Temperature: 0

Info: [ ]

Type: NE

RPM: 0

Bearing Info: [ ]

Actual Strokes: 0

Injected Mass: [ ]

Planned Strokes: 0

Grease Type: [ ]

Mass Per Stroke: 1

Mineral Base: [ ]

Grease Viscosity: 100

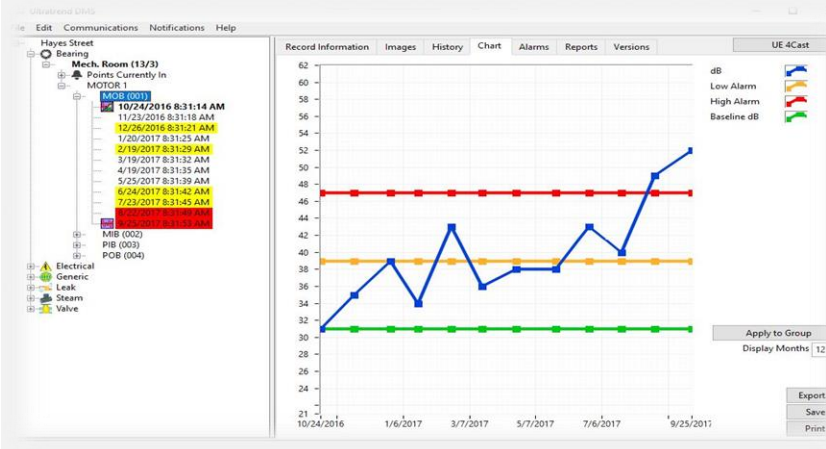
Cost Per Mass: 0.1

Injected Cost: 0

Grease Gun Cal. Date: 00:00:00.000 PM MM/DD/YYYY



Each route is stored within the plant created within the DMS software and is available for download at anytime. Each route can house up to 400 individual test points.



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## UPLOADING / DOWNLOADING

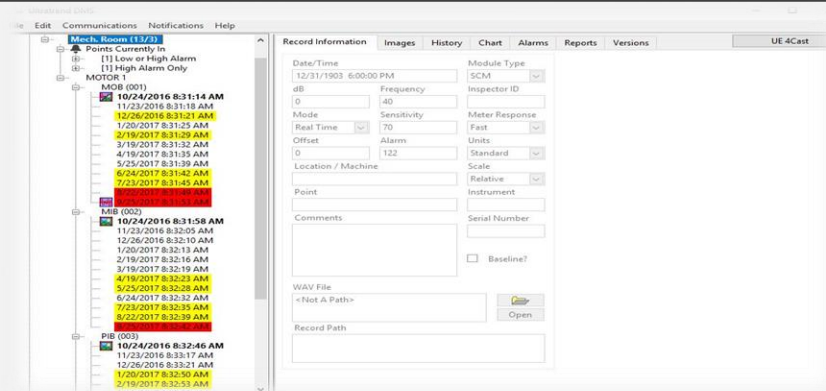


Once the route(s) are built within the DMS software, simply connect the U/D cable to the instrument and to a computer via the USB port. Then download the route.

Highlight the desired route and (right) click, then select “**send group to probe**”. The route will then be sent to the Ultraprobe 9,000.



Once route data is collected, mirror the downloading process, instead selecting “**retrieve group from probe**”. This will upload the collected data from the Ultraprobe 9,000 into the DMS software.



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## INITIAL SETUP



To set up the Ultraprobe 9,000 for Bearing Analysis, download the desired route from the DMS software. Then, set the frequency to **30 kHz** using the sensitivity dial. “Click” dial until “KHZ” is flashing, then spin to the desired frequency.

Once 30 kHz is reached, click the sensitivity dial again to set that frequency.



Then insert the Stethoscope Module (STM) or Remote Magnetic Transducer (RMT) into the module port. Modules are removed by pulling module straight out of port without twisting.



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## REMOTE MAGNETIC TRANSDUCER



The Remote Magnetic Transducer (RMT) is designed to move in unison with rotating equipment. The RMT can also support hard to reach or challenging test points.



With the magnet giving inspectors the ability to firmly attach and listen to equipment, consistent data collection is also supported.

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## DATA COLLECTION PROCEDURE



The factory settings on the Ultraprobe 9,000 allows inspectors to name each test point within each route when baselining bearings. To turn this function **OFF** and allow for “quick store” functionality, enter the setup menu #7, “**Text Editor Select**”.



To enter the setup menu options, power on the Ultraprobe 9,000 by pressing and holding the **trigger**, the **STORE** button and the **sensitivity dial** simultaneously for approx. **3 seconds**. Then spin the sensitivity dial to menu #7. Click the dial to enter the menu, spin to desired selection, then click to save.

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## DATA COLLECTION PROCEDURE



With the route downloaded to the Ultraprobe the text editor function turned **OFF** and the frequency set the **30 kHz**, inspectors can collect data. First, select an individual test point and make contact using the **STM**. (Recommend the grease port if using the STM - Equipment housing if using the RMT.)



Adjust and optimize the sensitivity and tune frequency (if necessary) to obtain a good quality signal and decibel value. Then **STORE** and save the data.



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## DATA COLLECTION PROCEDURE



When optimizing the sensitivity, arrow indicators alert inspectors as to which direction to spin the sensitivity dial. A **RIGHT** arrow indicates the sensitivity is too low and the dial must be turned to the right to obtain a decibel. A **LEFT** arrow indicates the sensitivity is too high.



When the sensitivity is optimized a **decibel (dB)** populates on the screen, ready to be stored and permanently saved.

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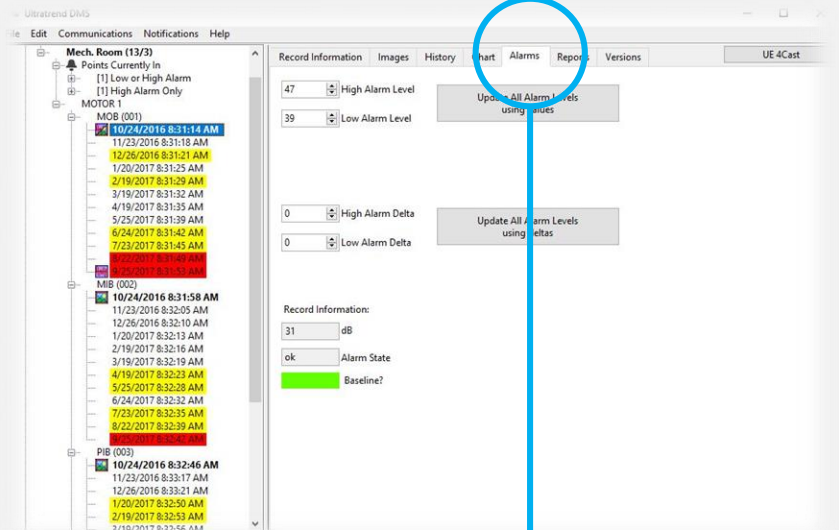
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## HISTORICAL TRENDS



When establishing historical trends, begin by baselining bearings within each route. This is achieved by isolating **the first decibel reading as the baseline**. A value to compare future readings.



Once baselines are uploaded into the DMS software, **ALARM LEVELS** can then be established. These levels will guide actions like lubrication and planned replacement while giving inspectors insight into the condition of each bearing.

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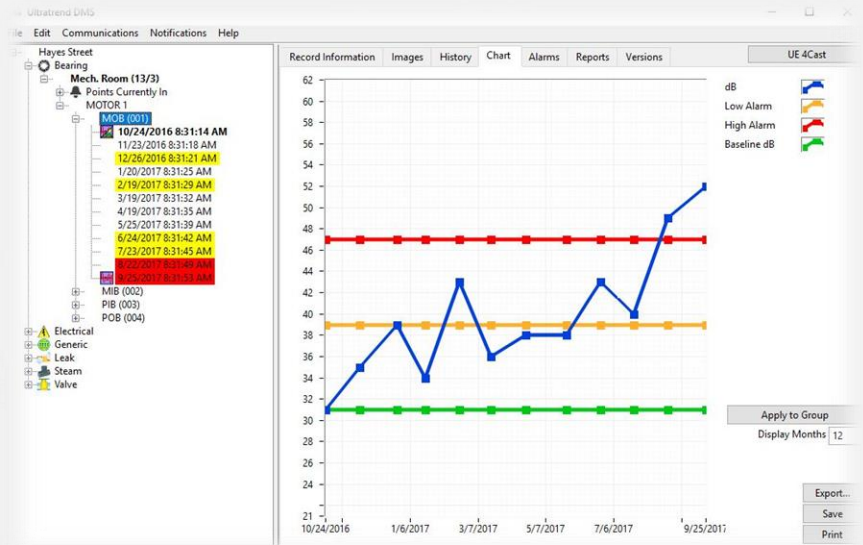
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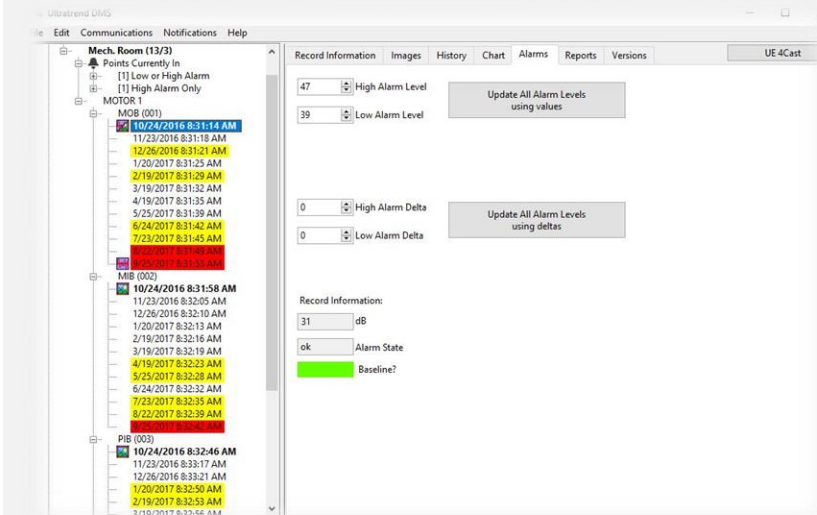


When alarm levels are in place, the frequency of data collection can be established. Then continuous analysis through the DMS software can occur via the **color coded alarm alerts** or **asset charts**.



Low alarm levels are indicated in **YELLOW** while high alarm levels are indicated in **RED**.

- **Low Alarm** = Lubrication
- **High Alarm** = Damaged Bearing



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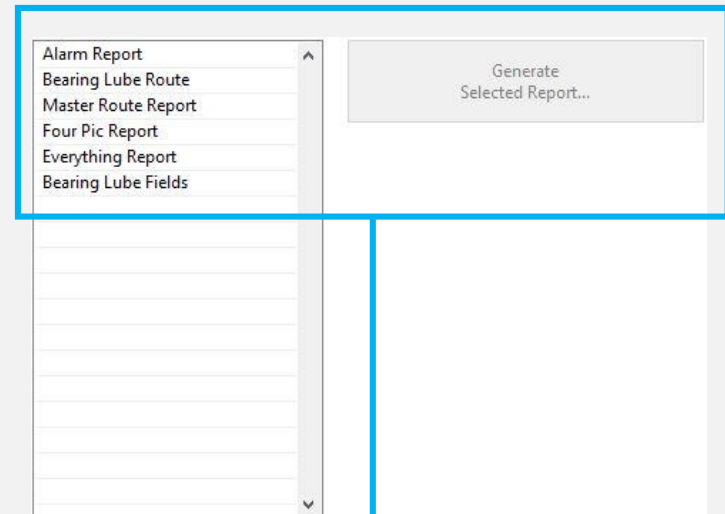
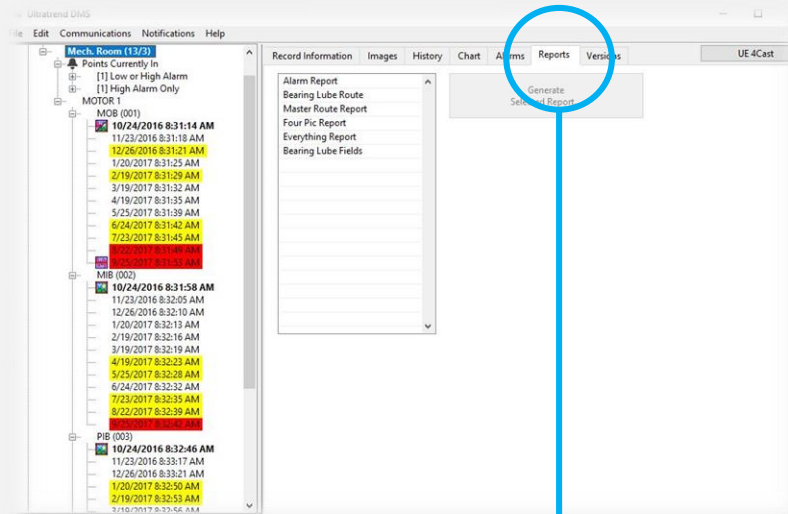
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## REPORT GENERATION



The DMS Software Allows for data storage and report generation. From the **reports** tab, select the desired report to generate, then select “**Generate Selected Report**”. All reports are generated in Excel formatting.

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