ULTRAPROBE® 15000

Instruction Manual

Safety advisory

Please read before using your instrument.

Warning

Improper use of your ultrasonic detector may result in death or serious injury. Observe all safety precautions. Do not attempt to make any repairs or adjustments while the equipment is operating. Be sure to turn off and LOCK OUT all electrical and mechanical sources before performing any corrective maintenance. Always refer to local guidelines for appropriate lockout and maintenance procedures.

SAFETY PRECAUTION:

Although your ultrasonic instrument is intended to be used while equipment is operating, the close proximity of hot piping, electrical equipment and rotating parts are all potentially hazardous to the user. Be sure to use extreme caution when using your instrument around energized equipment. Avoid direct contact with hot pipes or parts, any moving parts or electrical connections. Do not attempt to check findings by touching the equipment with your hands or fingers. Be sure to use appropriate lockout procedures when attempting repairs.

Be careful with loose hanging parts such as the wrist strap or headphone cord when inspecting near moving mechanical devices since they may get caught. Don't touch moving parts with the contact probe. This may not only damage the part, but cause personal injury as well.

When inspecting electrical equipment, use caution. High voltage equipment can cause death or severe injury. Do not touch live electrical equipment with your instrument. Use the rubber focusing probe with the scanning module. Consult with your safety director before entering the area and follow all safety procedures. In high voltage areas, keep the instrument close to your body by keeping your elbows bent. Use recommended protective clothing. Do not get close to equipment. Your detector will locate problems at a distance.

When working around high temperature piping, use caution. Use protective clothing and do not attempt to touch any piping or equipment while it is hot. Consult with your safety director before entering the area.

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Congratulations on your selection of the Ultraprobe 15,000. You are about to experience Ultrasound Condition Monitoring at its most advanced level. As you become more familiar with this amazing inspection system, we hope that you will begin to appreciate all that it can do to help with your predictive maintenance and energy conservation programs.

Introduction

Your Ultraprobe 15,000 is a versatile instrument with many features that will make your inspections easy, fast and accurate. **As with any new instrument, it is important to review this manual before you begin inspections.**

ULTRASOUND TECHNOLOGY TRAINING:

Your **Ultraprobe 15,000** has many applications ranging from leak detection and electrical inspection to mechanical analysis.
It may be used to analyze sounds and data, view trends, or just identify a problem. How it is used is up to you. As you gain experience and learn how much you can do, you might want to extend your knowledge by enrolling in one of the many training courses offered by UE Training Systems, Inc.
For more information about training opportunities:

Go to: http://www.uesystems.eu/training/training-overview/

ULTRAPROBE 15,000 KIT

STANDARD MODULES:

I. PLUG-IN MODULES

Trisonic™ Scanning

Trisonic Scan Module:

This module is utilized to receive airborne ultrasound such as the ultrasounds emitted by pressure/vacuum leaks and electrical discharges. There are four prongs at the rear of the module. For placement, align the prongs with the four corresponding jacks in the front end of the pistol housing and plug in. The Trisonic™ Scanning Module has a phased array of three piezoelectric transducers to pick up the airborne ultrasound. This phased array focuses the ultrasound on one "hot spot" for directionality and effectively intensifies the signal so that minute ultrasonic emissions can be detected.

Stethoscope (Contact)

Stethoscoop Module

This is the module with the metal rod. This rod is utilized as a "waveguide" in that it is sensitive to ultrasound that is generated internally such as within a pipe, bearing housing or steam trap. Once stimulated by ultrasound, it transfers the signal to a piezoelectric transducer located directly in the module housing. The module is shielded to provide protection from stray RF waves that have a tendency to effect electronic receiving and measurement. It is equipped with low noise amplification to allow for a clear, intelligible signal to be received and interpreted. For placement align the four prongs on the back with the corresponding receptacles in the front of the pistol and plug in.

LRM-(Long Range Module)

A cone shaped scanning module that increases the detection distance above standard scanning modules. The LRM-15 is ideal for high voltage inspection and for locating leaks at great distances.

Long Range Module

RAM/RAS-MT Remote Magnetic Transducer

The RAS/RAM-MT is a magnetically mountable contact probe with cable. The probe is applied to a test surface and the RAM (Remote Access Module) is plugged into the front end of the Ultraprobe.

RAM/RAS-MT Magnetic Mount

ACCESSORIES

STANDARD ACCESSORIES

Headset

This heavy duty headset is designed for use with or without a hardhat and can block out intense sounds often found in industrial environments so that the user may easily hear the sounds received by the ULTRAPROBE. In fact, these headphones provide over 23 dB of low frequency noise attenuation.

WTG-1 Warble Tone Generator

The WTG-1 Tone Generator is an ultrasound transmitter used to validate the sensitivity of an Ultraprobe before and at times after an inspection. For details on the Sensitivity Validation test, see Appendix A: Sensitivity Validation Test.(page 31) The Warble Tone generator may also be used for specialized tests such as when it is difficult to produce pressure or draw a vacuum floods an area with ultrasound which will flow through a (usually) large leak area. By scanning with the Trisonic Scanning Module, empty containers such as, bulkheads or hatches can be instantly checked for leakage.

Rubber Focussing Probe:

The Rubber Focusing Probe is a cone shaped rubber shield. It is used to block out stray ultrasound and to assist in narrowing the field of reception of the “Trisonic" Scanning Module.

Stethoscope Extension Kit:

This consists of three metal rods that will enable a user to reach up to 78 cm (31 additional inches) with the Stethoscope Module.

Battery (2):

This Ultraprobe 15,000 uses a lithium ion battery. A full charge will take about 4 hours, however you may charge the unit at any time for short intervals or for a longer period. If it is kept on charge over 4 hours, there will be no harm to the battery.

NOTE: When the effective battery charge is used up the instrument shuts down and a message to recharge the battery will be displayed in the display panel.

BCH-10 Battery Charger:

This is the battery charger for the UP15,000. It works with both 120 VAC, 60 Hertz and 240 VAC, 50 Hertz and comes with multiple plug adaptors for different countries. The charging time is about 4 hours. There are two plugs: Black for the main pistol housing and Yellow for the WTG-1 Tone Generator.

UE- Battery Charger Pod:

This is a Battery Recharge Pod docking station for charging Ultraprobe Batteries (Lithium Ion only). This pod will charge the standard batteries that come with the Ultraprobe 15,000 while removed from the metered pistol housing.

OPTIONAL ACCESSORIES

CFM-15:

A scanning module used for close proximity low level leak detection in pressure and vacuum systems.

UWC-15:

The UWC-15, Ultrasonic Waveform Concentrator, substantially increases the detection distance. The UWC-15 is great for corona, tracking and arc detection at safe distances. Includes carrying case

DHC-2:

Headset for Standard Applications that do not require the use of a hard hat

TFSM: Telescoping Flexible Scanning Module: A flexible scanning probe that is bent to accommodate odd scanning angles. The telescoping action helps scan hard to reach areas.

TFCM: Telescoping Stethoscope (Contact) Module: A contact probe for structure borne inspection that can be extended for hard to reach areas.

UFMTG-1991:

The UFMTG 1991 is a multidirectional warble tone generator. It has a high power output with a circular transmission pattern of 360°.

WTG-2SP Warble Pipe Threaded Tone Generator:

A Warble Tone Generator that is used in test conditions where it is not possible to physically place the standard WTG-1 Warble Tone Generator, such as in pipes or in certain heat exchangers or tanks. Features: 1" NPT male threaded nipple with adapters for ¾" and ½" female nipple with a 10 turn amplitude adjustment dial. Metric adapters are also available.

BCH-WTG:

Optional 220 VAC @ 50 Hz charger for all Warble Tone Generators. The line input is 220 VAC @ 50Hz and the charging time is about 8 hours.

HTS-15:

Holster set for the UP15,000.

DISPLAY ICONS:

The main default screen.

Spectral Analysis screen &

Opens Camera for photos

View a specific historical record

Main Screen displays dB

Set up instrument

Use to View image and take

Input additional test data to record

Display for dB and temperature

Valve/Steam test display

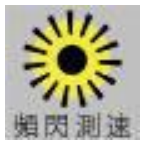
View your uploaded route

Store your test data

Turns off/on Temperature

Temperature display (no dB)

Adjust Emissivity



Strobe

Exit screen

Remove SD Card

OVERVIEW

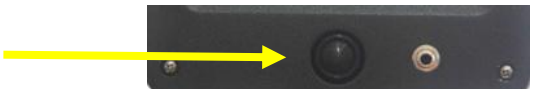
KEY FEATURE

Pistol Grip Housing

The pistol grip housing contains your operational features such as: On/Off button, Trigger Switch, Touch Screen, camera with flash, Infrared Thermometer, Laser pointer, Battery, and Test Module Receptacle.

ON/OFF Button

Located on the back under the Display Panel, this must be pressed firmly to turn the instrument ON.



NOTE: Be sure the SD card is inserted in the Ultraprobe 15,000 before turning on.

1. **TURN OFF**:
2. Press the On/Off button
3. Touch the Off Box on the display screen

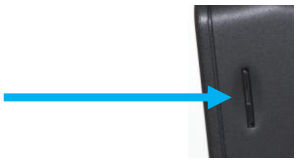
Suspend

In place of turning the instrument on and off in between short intervals of use, or to extend the use time on a battery (normally 4 hours of continuous use after a complete charge), put the instrument on SUSPEND. To do this:

1. Press the On/Off button
2. Touch the SUSPEND box on the display screen.
3. **RETURN TO OPERATION MODE** (cancel the SUSPEND mode) :
4. Touch the display screen and display will reopen.

SD Card and Slot

The SD card is used to store all your inspection data and sounds. It will hold the test information for transfer to a computer that has Ultratrend DMS V 5.0 or higher installed.



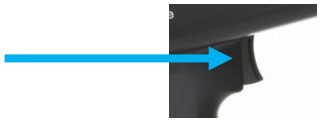
Remove SD Card

When removing the SD Card while the instrument is on , open the Home Screen and Select this icon. You will be prompted when to turn the instrument off.

NOTE: Be sure the SD card is inserted in the Ultraprobe 15,000 before turning on
ALWAYS turn the Ultraprobe 15,000 OFF before removing the SD card!

Trigger Switch

This has multiple functions. After the instrument has been turned on using the On/Off Button (above), Pull the trigger in while performing your tests. To hold a reading for storage or review, release the trigger. The trigger Switch is also used to turn on the laser pointer or the IR Thermometer when these features have been selected in the "Set Up Menu".

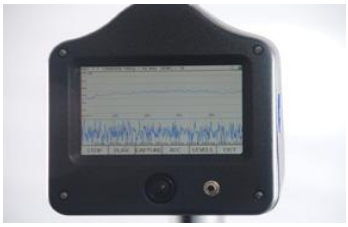


Touch Screen Display

All your inspection functions can be controlled by just touching an icon, arrow or data box.

Spectral Analyses Screen

Select FFT (Spectra) display, Time Series display or dual display: Record and Play back sounds.



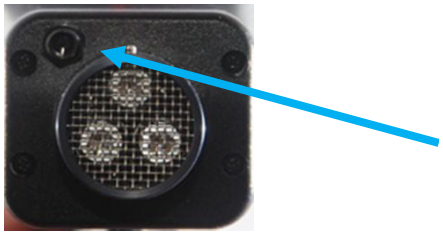
Camera

You may use the camera function to capture images of test points or items of interest that will be used in your reports.

Screen displays image and test data

Infrared Thermometer

This non-contact thermometer will measure the temperature of your test points. It can be used in the Temp screen and in the dB/Temp screen.



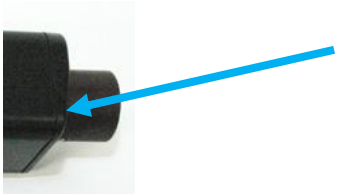
Laser Pointer

The Laser pointer is a class II (for Europe) or a Class IIIa (elsewhere) type laser DO NOT POINT IT AT EYES. To activate it, enter the setup mode, select the "Oper" tab and look for Trigger Features. Touch the Trigger Features box. Then using the arrows, move up or down until Trig & Laser ON/OFF is shown. Touch the box to select and exit.

Battery:

Slide the Battery into the Handle until it "Clicks" in securely

Test Module Receptacle



Plug in all test modules here.

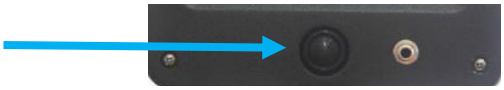
Battery Clip

Battery

Setting up the Ultraprobe 15000

TURN ON THE ULTRAPROBE 15,000

a. The instrument will not open without the SD card placed fully into the slot.
b. To turn the instrument on, press and then release the ON/OFF button as shown.



HOME SCREEN

The Home Screen will display the Icons for operating your Ultraprobe 15,000.
In order to select an operating screen, you must enter the Home Screen.
The display screens in the Home Screen are:

dB (Main Screen) This will display the test decibel and the test frequency

Setup: This Icon will take you to the setup screen where you will configure the instrument to meet your test requirements

dB/Temperature: This test screen displays decibel, frequency and temperature.

ABCD (Valve Test Screen) This screen will only be displayed if the ***Valve or steam application*** has been selected in **Setup/Applications**. It will display the dB data for each of the four (A,B,C,D) test points and the frequency.

Route: View your test route. The route is displayed in sequential order. Each record can be viewed by selecting (touching) the test number.

Remove SD Card: You must use (touch) this icon BEFORE removing your SD

Setup Modes & Modes

Before using the instrument, become familiar with the various features and modes of operation. You may customize the instrument to meet your specific inspection demands. This is accomplished in the

Setup Mode.

1. Turn the instrument on
2. Locate the Setup icon on the Home Screen
3. Touch the Icon to enter the Setup mode.

Setup Screen Icons:

NOTE: to scroll from one setup feature to the next, touch the UP/DOWN arrows on the right of the screen. To select or change a setting, touch the selection box (or circle) on the screen. Box will be highlighted. Then use the UP/DOWN arrows on the right to move within the selected box. When through, touch the selected box to deselect.

Preferences: Here you will be able to select:

Inspector identification: use up to 3 letters.

Inspection Module: you will use (Ex: SCM, LRM etc.)

Display Response: This affects the movement of the intensity indicator. It may be set for Slow, Medium or Fast.

Trigger Features: The trigger is used to actively display a dB reading while pulled and freeze a dB reading when released. In the Setup mode, the operator can select “Laser On” or “Laser Off”. If “Laser On” is selected, every time the trigger is pulled, the Laser will be on. When the Trigger is released, the Laser will turn off. If “Laser off” is selected, the Laser will always be off, even when the Trigger is pulled on for testing.

Alarm Enable/disable: Use this to record sound samples manually or to record a sound sample when an alarm level has been reached or exceeded.

Alarm Rec (Record) Time: Using the UP/DOWN selector arrows, the time for recording your sound samples can be selected. The selection will include a time value of from 5 seconds up to 30 seconds. You may also select MANUAL. When MANUAL is selected, press the REC (recording) box in the Spectral Screen. To stop recording, Press STOP.

Headphone Volume: There may be situations in which the sound level in the headphones is uncomfortably high and the sensitivity level must remain in a high level. To make this comfortable for the user, the volume of the headphones can be adjusted for 100% of volume to as low as 0% of volume.

Turn off time: The Turn-off time can be set to 5, 10 or 15 seconds. Or it can be disabled. In disable, when the instrument is turned on, it will stay on until either it is turned off, set in suspend or the battery charge is depleted.

Frequency Adjust: An inspector might want to be sure the frequency is not changed during a route. To lock the frequency, select No, to enable frequency tuning, select Yes.

Instrument Setup: The factory default is Manual. All adjustments are made by the inspector as he/she goes through the route. The Automatic setting is used after the initial baseline data has been uploaded to the Ultraprobe 15,000. In the Automatic setting the instrument will move sequentially from one test point to the next, and set itself for the original baseline setup, which will include the Frequency and Sensitivity for that point. For example, if the operator is testing bearings, the instrument will move from test point 1 to test point 2 and if the baseline data was set at a sensitivity level of 43 with a frequency of 30 kHz, the instrument will automatically set for these parameters.

Units: Set measuring units for either Metric or "Standard".

Frequency Default: The default frequency from the factory is 40 kHz. If the Ultraprobe is to be used consistently at another frequency, set the default to that frequency. Every time the instrument is turned on, it will default to that selected frequency. For example, if most of the inspections are to be mechanical, the user might set the default frequency to 30 kHz.

Sensitivity Default: the user can select a sensitivity value so that every time the instrument is turned on for testing, that value will be the starting "high" level. For example, the default factory Sensitivity value is 70. In some routes this will be too high and to save time the inspector will set to a lower value for a starting point on that route.

Info: This Setup feature displays three items:

1. Show Versions: This displays the operating version for both the operating software and the spectral analysis software.
2. Set Date/time: Use this to adjust the time and date,
3. Calibration Due: This is set at the factory and reset every time the Ultraprobe is sent back after calibration.

Reset: This Setup feature is used for two settings:

1. Restore Lists: All test information is set as a list in Ultratrend DMS, the standard operating software that accompanies the Ultraprobe. If list identification letters have been changed in Ultratrend DMS, they will be entered into the Ultraprobe. Restore lists will reset the Ultraprobe back to the original lists as set at the factory.
2. Default Settings: When Yes is selected the instrument settings will change to the original settings as it came from the factory

Upgrade: There are two selections in this section:

1. **Upgrade Program**: Whenever there is an upgrade to the Ultraprobe 15,000 it may be downloaded off the UE web site onto the SD card. Insert the SD card with the upgrade and use Upgrade Program.
2. **Upgrade Language**: To change language from the default English to another language: It must be changed in Ultratrend DMS. Open Ultratrend. Select Edit, then Edit Preferences, select a language. Restart your computer. Then upload a route onto the SD card. With the SD card in the Ultraprobe, select Upgrade Language.

Applications: Each application has unique data. When an application is selected the instrument will automatically set up specific fields that are unique to that application. The specific applications are:

a. **Generic**
b. **Valves**
c. **Bearing**
d. **Electrical**
e. **Steam**
f. **Leak**

There is one other selection on the Apps page: **Fields**

Fields: These are test information fields that will accompany test results. Each application has a set list of test fields. Select or deselect the specific fields and then touch OK to set.

Viewing and Selecting Icons

1. Icons may be viewed on any of the following display screens: Main, dB and Temperature, Valve and Temperature.
2. Only two icons at a time may be shown continuously
3. To view icons: touch the bottom of the screen.
4. To view more icons, use the "left/right" arrows to move the icons on and off the screen
5. To select an icon for continuous display and easy access on the screen:

   a. Touch the bottom of the screen to display the icons
   b. Use the left/right arrows until the icon you will use is displayed
   c. Touch the icon and slide it up to the middle of the left side of the display screen

Using Screens:

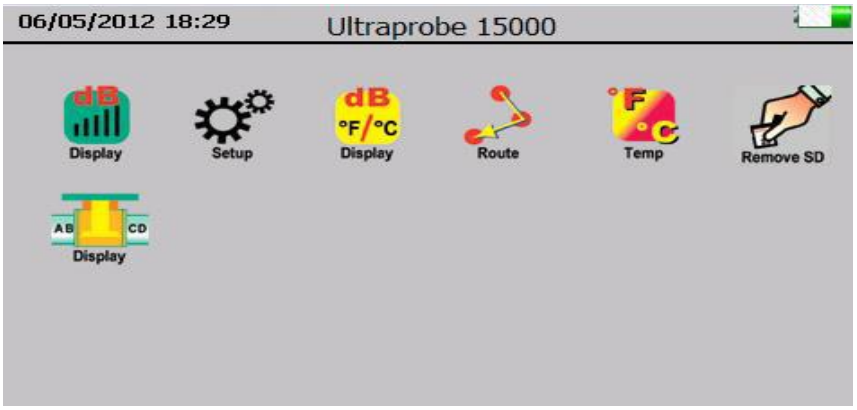
To use any of the screens:

a. Turn on the Ultraprobe by pressing the ON button
b. When the Home screen opens, select an Icon
c. To use an operational screen such as "Main", "dB/Temp", "Temp", or Valve, pull the trigger in and begin your inspection. If no or very little ultrasound is present of if the sensitivity value is too high for the test area, the dB will not show on the screen. 3 Dashed (---) lines will show. Adjust the "S" (Sensitivity value) by touching the Sensitivity box and then use the Up/DOWN arrows to move the S value up or down as needed.
d. To freeze a reading for saving or observation, release the trigger.

Home:

When the Ultraprobe is turned on, the Home screen will be displayed. There are 4 icons shown: Main screen, Setup, dB and Temperature Screen, and Route. Should the Valve or Steam application be selected, the Valve icon (ABCD) will also be shown. Select one of the icons to enter and use the full features of the Ultraprobe 15,000.

NOTE: To change from one operating screen (such as Main, dB/Temp or Valve) to another, you must return to the Home screen.

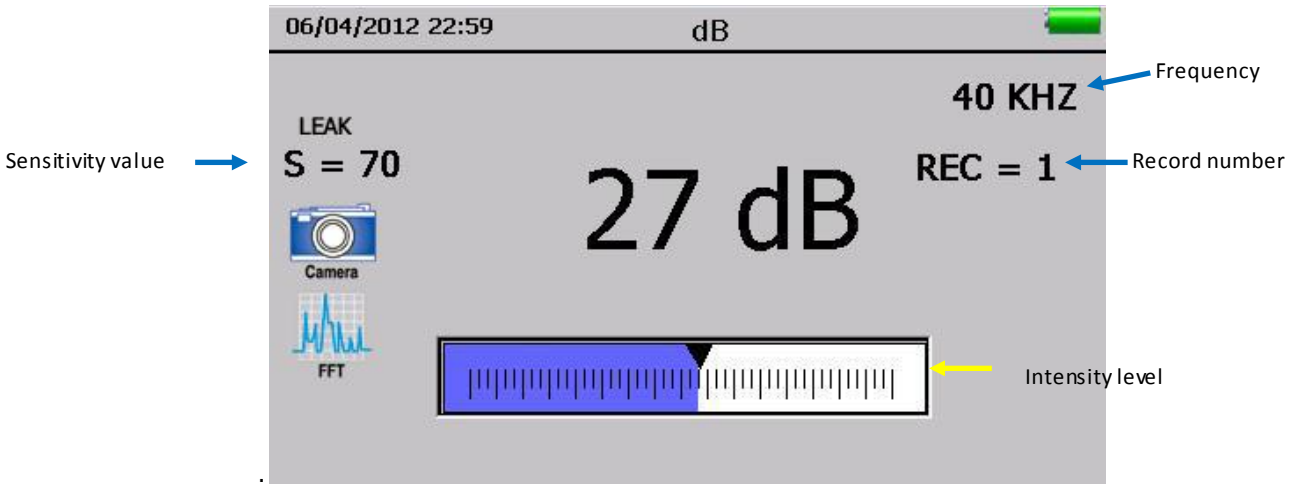


1. Main (dB): This screen will display the Record number, Decibel , Frequency, Sensitivity Level and an Intensity Level box. The Intensity Level box also acts as the Sensitivity Control. This will be explained below There are two control arrows on the right to be used to adjust or change the sensitivity, frequency, record number and emissivity.

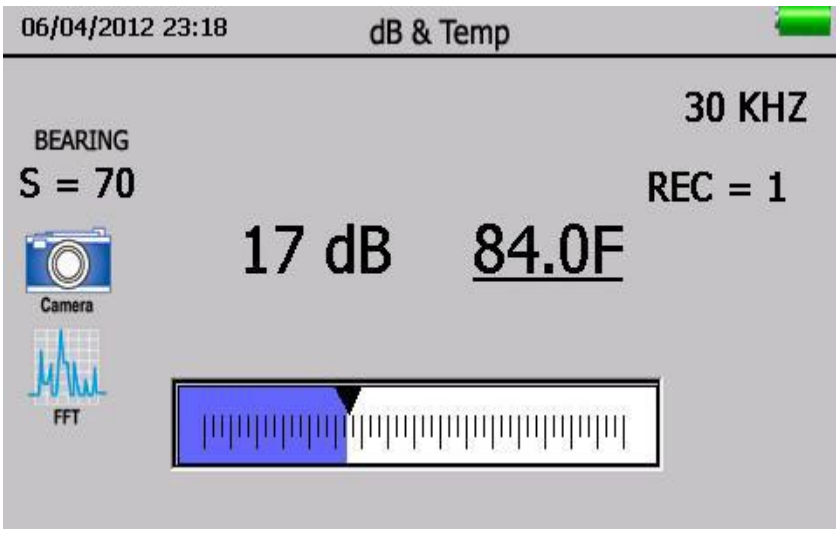
    a. To change the Frequency: touch the kHz (frequency), when a highlight appears around the selected area then use the UP/DOWN arrows to adjust.
    b. To change the Sensitivity: touch the sensitivity value, when a highlight appears around the selected area then use the UP/DOWN arrows to change. You will see the change in the sensitivity value in the upper left of the screen. An alternative to using the arrows is to use the intensity level box, which uses a bar graph to indicate intensity. Tap the box in either the high (right) or low (left) area of the box until the Sensitivity value (S=) changes as needed).
    c. To change to different Record Number: touch the Record Number, when a highlight appears around the selected area then use the then use the UP/DOWN arrows to the desired location.
    d. To save the data, touch the bottom of the screen and locate the save icon, touch save, when prompted, touch yes to save.

Viewing changes in Decibel Levels:

To view decibel levels the Ultraprobe must be in the *active scan mode*. Pull the trigger in to activate the active scan mode. To freeze the data for storage, while pointing or touching the test point in the active mode, release the trigger. The data will be frozen on the screen until it is either stored or the Trigger r is pulled in



dB/Temp



The decibel and temperature levels are shown in this screen.
This screen will display the Record number, Decibel, Temperature, Frequency, Sensitivity Level and an Intensity Indicator box. The Intensity Indicator box also acts as the sensitivity control. There are two control arrows on the right to be used to adjust sensitivity and frequency.
To freeze a temperature reading while continuing to test for decibel levels, tap the bottom of the display screen and use the LEFT/RIGHT arrows until the Temp on/off icon is shown. Touch the icon to turn off temperature sensing. When done, locate the Temp on/off icon and touch it again to turn the temperature reading function back on.

Temp & Emissivity

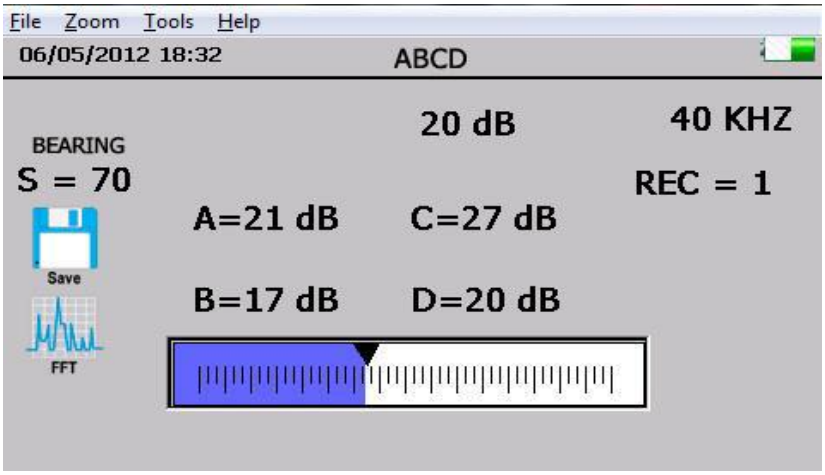
To test for Temperature only, select this screen. This is the only operating screen that can be accessed while in any of the other operating screens (Main, dB/Temp, Valve). It will only show the temperature. The Emissivity can be changed on this screen to adjust for a more accurate measurement. The default emissivity level is 95.

To test for a temperature the instrument must be in the active scan mode. Pull the trigger in to activate the *Active Scan Mode*. To freeze the data for storage, while pointing or touching the test point in the active mode, release the trigger. The data will be frozen on the screen until it is either stored or the Trigger is pulled in.

To adjust the Emissivity: touch the emissivity value and use the UP/Down arrows to reach the desired level

To save the data, touch the bottom of the screen and locate the save icon, touch save, when prompted, touch yes to save.

Valve/Steam (ABCD)



To use the ABCD screen the VALVE or STEAM application must be selected in the setup mode. The ABCD icon will be displayed in the Home Screen. Go to the Home screen after selecting Valve in the setup application mode to use.

This is the A,B,C,D screen. To enter the decibel values of test points A, B, C and D:

a. Touch a valve test point A, be sure the instrument is in active test mode. Freeze the reading on the screen by releasing the trigger. tap the blank A lines and the dB reading will populate that section.

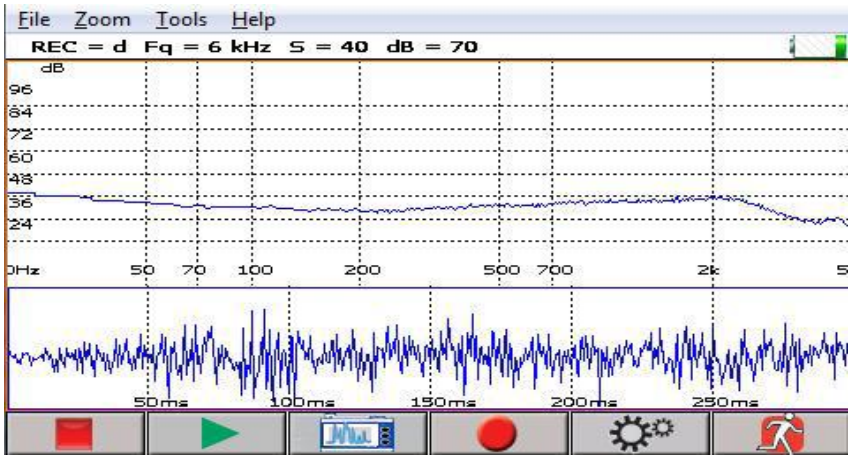
b. Touch valve test point B, be sure the instrument is in active test mode. Freeze the reading on the screen by releasing the trigger, tap the blank B lines and the dB reading will populate that section.

c. Touch valve test point C, be sure the instrument is in active test mode. Freeze the reading on the screen by releasing the trigger, tap the blank C lines and the dB reading will populate that section.

d. Touch valve test point D, be sure the instrument is in active test mode. Freeze the reading on the screen by releasing the trigger, tap the blank D lines and the dB reading will populate that section.

e. When done, touch the bottom of the screen and locate the save icon, touch save, when prompted, touch yes to save

Spectra:



This displays sound events in either an FFT screen, a Time Series Screen or Both screens at the same time. There are 6 buttons to use at the bottom of the displayed screen: START/STOP, PLAY, CAPTURE, REC, LEVELS, EXIT.

Setup: To set up the Spectra screen touch/tap  . The first screen has adjustments for setting the levels for the Spectra screen and for the Time Series Screen. There are 3 adjustments:

I. dB (decibel) scale. This can be used for both the Spectra and Time Series screens
II. Frequency Scale, used in the Spectra Screen
III. Time Scale, to adjust the ms or milliseconds
To exit back to the main Spectra screen, select Done or continue with setup select "Control"
IV. Control: On the bottom right of the Setup screen is the Control box. Touch/tap to enter. The settings are:

1. Screen views: Select FFT screen or Time Series Screen or view both on the same screen by selecting both.'
2. Black /White plot: The default screen colors are blue and yellow, this can be changed to black and white. In instances where the screen image will be stored and printed, black and white might be selected to reduce the amount of ink used by a printer.
3. CPM: instead of using the default Hertz, the scale can be set to read CPM (Cycles Per Minute)
4. Log Scale
5. Linear Scale
6. Average
7. Detect Peak
8. Exit on Save Wave: After a sound sample has been recorded and saved, the Instrument will exit and return to the previously selected Operating Screens.

b. When through adjusting the settings or to exit back to the Spectra Screen, select DONE

c.  STOP/START: When the Spectra screen opens it will start to display sounds sensed by the Ultraprobe, to stop this, touch/tap STOP, to start testing a sound sample, touch/tap START

d.  PLAY: To play a recorded sound back on the Ultraprobe and to view it while hearing it, touch/tap PLAY.

e.  CAPTURE: To capture the image of the screen, touch/tap CAPTURE. This image can be used in reports.

f.  REC (Record), press this to record a sound sample. If in the MANUAL record mode, press the REC button. To stop in the Manual mode, press STOP. If the instrument has been set for a recording time in the Setup Mode, then just touch/tap and release the REC box.

g.  EXIT: exit to a previously selected screen.

Selecting Icons For Display Screen

NOTE: Only two icons at a time can be permanently displayed on an operational screen.

1. Touch the bottom of an operational screen (Main, dB/Temp, Temp, Valve)
2. Icons will appear
3. Touch and drag the desired icon to the center of the left side of the screen

Storing a record

1. Release the trigger to freeze the desired reading
2. Locate the Store Record icon
3. Touch/tap the Store icon.

Recording Sound

1. Locate and touch the Spectra (FFT) icon
2. Touch/tap  (Record)
3. If the timed recording has been selected in the Settings/Set Record Time, the recording process will stop at the selected time
4. If the Settings/Set Recording Time is in the Manual mode, to stop recording, touch/tap  STOP.
5. You will be asked: Save WAV File, Yes or No. To save, touch/tap Yes.
6. To activate the Spectra screen when not in the Record Mode, touch/tap  (START) to run the spectra (if STOP is shown the spectra screen is operating. To stop the spectra screen from running, touch/tap the STOP button). Every time the START button is tapped to run the spectra screen, you will be observing an averaging of the spectra on the screen. When it is stopped and restarted, the averaging process begins again.

Capturing the Spectra Screen Image

The Image of the selected spectra screen can be saved for viewing or entering in a report. To capture the screen image:

1. Check the top left of the spectra screen to be sure you are at the desired Record number.
2. Touch the CAPTURE tab 
3. Select Yes to save.

Entering Test Data

1. Locate the Input Data icon
2. The Test data information will vary with each application. The title of the information will be shown in the upper left part of the screen
3. To move from one selection to another, use the Left/Right arrows
4. Touch/tap the screen of the desired data (ex: RPM or TEMP)
5. Use the UP/DOWN arrows to enter the desired data
6. These input data fields are set (and may be changed) in Ultratrend DMS,

Strobe

1. Locate the Strobe icon by tapping the bottom of the display screen
2. Touch and tap the Strobe icon
3. Tap the Flash icon to start Strobe action (be sure the bearing shaft has reflective tape affixed).
4. To adjust the speed, tap each box and use the up/down arrows to set the numerical value.
5. To take an image, touch the Camera icon and then tap the screen. Tap the Save icon on the camera screen to store the image. When the image is saved the data and RPM will be superimposed over the image.
6. To save the RPM data to DMS, be sure to touch the Save icon on the RPM screen.VIEW RECORD

View Record

1. A record can be viewed in an operational screen. If the record number displayed is not the record you want to read:
2. Touch/tap the Record box
3. Use the UP/DOWN arrows to locate the desired record number
4. Locate the View Record icon
5. Touch/tap the icon
6. When the data appears, you can scroll for all the stored data, touch the screen and drag your finger up or down.

Viewing Route

1. Locate the Route icon by tapping the bottom of the display screen
2. Touch/tap the Route icon
3. Sorting Route Criteria: Using the SORT button, every time it is pressed it will rotate the sort. Sort options are: Record #, Low Status, High Status, OK Status or Not Updated.
4. Reviewing a Photo: If a Y is shown in the P (Photo) column you may view the image by touching/tapping the Y. If multiple images are stored, view each by touching/tapping the display screen until you have viewed all images.

5. Reviewing Wave Files: If a wave file is stored you may play either the baseline or current wave file. To play the baseline, touch/tap the Y in the W column and play.
6. To open the record in the main dB display, touch/tap the Record #.

Camera: **To take a picture of a test point, touch the Camera icon. The Camera screen will show:**

1. Flash: On/Off: If you want the flash to be on, press ON, if you do not want the flash, press OFF.
2. Zoom: If you want to zoom in or out (up to 3X), tap the zoom box at the desired zoom location. The zoom level will be displayed to the left of the zoom box.
3. To capture the image:

   a. Touch the View Photo icon and the image will be shown on the screen.
   b. Touch the image screen to capture the image.
   c. The image will appear with the test data.
   d. To save, press Save. You will be asked to confirm if you want to save the picture. IF you wish to save the picture, touch Yes. If you do not want to save the image at this point, press No. If you do not want to save the picture after you view it then press the Exit icon.

Trigger Switch:

The Trigger Switch is used to display the active dB reading. To observe the active dB reading, ***pull*** the trigger and ***hold*** it. For example, when scanning a leak or electric emission, pull the trigger in and scan the test area until you want to freeze the reading for storage or review. At that moment, release the trigger. To store the dB you have frozen on the screen, select the **Save** icon.

The trigger can also be used to turn on the Laser Pointer. Note that the Laser Pointer will work only if it has been set to ON in the setup menu.

Quick Change Battery

To insert the battery, align the battery with the handle (arrow pointing towards the trigger) and push in until the clips snap in place. **To remove the battery**, push firmly on the battery clips with the fingers of one hand while holding your other hand under the handle to catch the released battery.

Wrist strap

To protect the instrument, against being dropped accidentally, use the wrist strap.

Headset Jack:

This is where you plug in the headset. Be sure to plug it in firmly until it clicks.

Recharge Jack :

This Jack receives the plug from the recharger. The recharger is designed to plug into a standard electrical receptacle.

Charging Pod

Keep a backup battery fully charged using the Charging Pod. This is a battery recharge docking station for charging Ultraprobe Batteries (Lithium Ion). This pod will charge the standard batteries that come with the Ultraprobe 15,000 while removed from the meterec

USERS INSTRUCTIONS

Trisonic Scanning Module

1. This module plugs into the front end of the instrument.
2. Align the pins located at the rear of the module with the four jacks in the front end of the Metered Pistol Housing (MPH) and plug in.
3. For general use position the frequency selection to 40 kHz.
4. Start to scan the test area.

Method of Airborne Detection:

The method of air borne detection is referred to as **"Gross to Fine"**. Start at maximum sensitivity (S=70), constantly reducing the sensitivity and following the bar graph amplitude display to the loudest point. If there is too much ultrasound in the area, reduce the sensitivity, place the RUBBER FOCUSING PROBE (described below) over the scanning module and proceed. Every time the sound level rises to a point where it is difficult to follow, reduce the sensitivity again and again until you are able to follow the test sound to its' loudest point.

Headset:

The DHC2-HH headphones are designed to be worn with hard hats. To use, simply plug the headset cord into the headset Jack on the pistol housing, and place the headphones over your ears.

Rubber Focussing Probe :

To use, simply slip it over the front of the scanning module or the contact(stethoscope) module. NOTE: To prevent damage to the module plugs, always remove the module BEFORE attaching and/or removing the Rubber Focusing Probe.

Long Range Module (LRM)

1. This module plugs into the front end of the instrument.
2. Align the pins located at the rear of the module with the four jacks in the front end of the Metered Pistol Housing (MPH) and plug in.
3. For general use position the frequency selection to 40 kHz.
4. Start to scan the test area.

Stethoscope Module

1. Align the pins located at the rear of the module with the four jacks in the front end of the Metered Pistol Housing (MPH) and plug in.
2. Touch test area.

As with the SCANNING MODULE, go from the "gross" to the "fine". Start at maximum sensitivity (S=70) on the Sensitivity Selection dial and proceed to reduce the sensitivity until a satisfactory sound level is achieved. At times it may be necessary to utilize the STETHOSCOPE MODULE with the sensitivity level at or near maximum. Occasionally when in this situation stray ultrasound may interfere with clear reception and be confusing. If this occurs, place the RUBBER FOCUSING PROBE over the Stethoscope probe to insulate against the stray ultrasound.

Stethoscope Extension kit

1. Remove the Stethoscope Module from the Metered Pistol Housing.
2. Unscrew the aluminum rod in the Stethoscope Module.
3. Look at the thread of the rod you just unscrewed and locate a rod in the kit that has the same size thread this is the "base piece".
4. Screw the Base Piece into the Stethoscope Module.

5. If all 78cm (31") are to be utilized, locate the middle piece. (This is the rod with a female fitting at one end) and screw this piece into the base piece.
6. Screw third "end piece" into middle piece.
7. If a shorter length is desired, omit step 5 and screw "end piece" into "base piece".

RAM/RAS-MT

Align the pins located at the rear of the module with the four jacks in the front end of the Metered Pistol Housing (MPH) and plug in. Place the magnetic transducer on the test location.

To Charge the UP15000:

1. Plug recharger cable into recharger jack on the UP15000 and then plug the recharger into a wall receptacle.
2. Make sure that the LED on the charger is blinking when recharging.
3. The LED remains solid when the battery is charged. The instrument may stay connected to the charger without damaging the battery. Charge time is approximately 4 hours.
4. **WARNING**: Use the supplied UE Systems recharger (BCH-10L) ***only***. Use of unauthorized rechargers will void the warranty and may degrade or damage the battery.

WARBLE TONE GENERATOR/SENSITIVITY VALIDATION UNIT (UE-WTG-1):

The Tone Generator has two functions.

Sensitivity Validation:

This is a procedure that should be incorporated BEFORE you perform any test with your Ultraprobe. It provides assurance that your instrument is working properly to provide repeatable, reliable results for any of your inspections routines. This is a procedure that is recommended for any Predictive Maintenance instrument you may use If performed regularly it will promote accuracy and test reliability throughout your PdM program.
For detailed instructions, refer to Appendix A: “Sensitivity Validation Procedure”

As a method for locating large leaks when it is difficult to produce pressure or vacuum.

To perform this test:

1. Turn Tone Generator on by selecting either "LOW" for a low amplitude signal or "HIGH" for high amplitude. When the Tone Generator is on, a red light (located below the recharge jack in the front) flickers.
2. Place the Warble Tone Generator within the test item/container and seal or close it. Then scan the suspect areas with the Trisonic Scanning Module in the Ultraprobe and listen for where the "warble" ultrasound penetrates.

To Charge the warble tone generator:

Plug recharger cable into recharger jack on the Warble Tone Generator and then plug the recharger into a wall receptacle.

1. Make sure that the LED on the charger is lit when recharging.
2. The LED turns OFF when the battery is charged.

Helpfull Hints:

Before you begin your inspection activities, it is suggested that you review the applications section to become familiar with the basic inspection methods.

Using the SD Card

NOTE: Be sure the SD card is inserted in the Ultraprobe 15,000 before you begin testing.

Playing Recorded sounds:

You may review baseline sounds that have been uploaded to your Ultraprobe and compare them to currently recorded sounds.

1. Open Routes and select the record with the baseline sound. If the baseline sound has been uploaded it will be noted with a "Y" in the Wave ("W") column.
2. Touch the "Y" and the Spectra screen will open and begin to play the sound.

   a. To compare with a recently recorded sound for the selected route number:

      1. Exit the Spectra Screen, open an operating screen (Main or Temp/dB),
      2. Make sure the screen displays the appropriate record number in your route
      3. Reopen Spectra
      4. Select PLAY 
      5. A window will open displaying two wave files: one with a prefix of BL is the Baseline wav file the other with a prefix of SA is the current wav file
      6. Touch the Next button to move to the wav file you want to play
      7. To play, touch the Select button

Auto-shutdown battery feature

The Ultraprobe 15,000 is equipped with an auto-shutdown feature when the battery energy is depleted. A message in the Display Panel will read "RECHARGE BATTERY", and the instrument will go into a "sleep" mode. The instrument will automatically store all records onto the SD card at shutdown. After the battery is replaced with a freshly charged battery, turn the Ultraprobe 15,000 back on and continue your testing

Resetting the onboard computer

There is no reset switch on the instrument. Should it be necessary to reset the instrument:, Enter SETUP Mode touch/tap the tab "OPERATIONS", touch/tap DEFAULT SETTINGS) and choose the YES. **WARNING: Selecting Default Settings erases all records stored in the instrument.**
If that does not work, disconnect the battery for one (1) minute and then reconnect the battery.

Alarm Disable/Enable

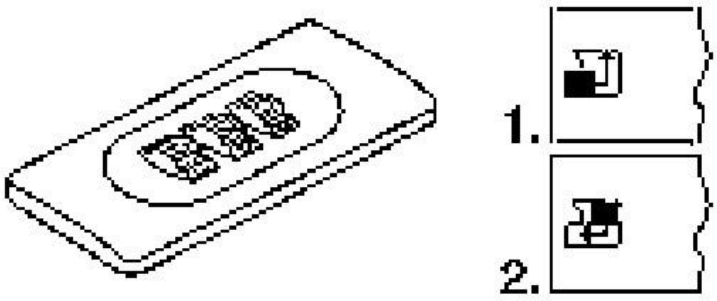
To enable or disable an alarm level: (the alarm levels are set in Ultratrend DMS and sent to the instrument.

1. Enter Setup , Functions
2. Select Alarm Enable or Disable.
3. When Alarm level is exceeded the display will change color and, if selected the sound will be recorded.

Ultraprobe® 15,000 Touch Specifications

Construction	Hand-held pistol type made with coated aluminum and ABS plastic
Circuitry	Solid State Analog and SMD Digital Circuitry with temperature compensation and true RMS conversion
Frequency Range	20 kHz to 100 kHz (tunable in 1 kHz increments)
Response Time	<10ms
Display	QVGA Touch Screen - IR, Laser Pointer, Camera, Spectrum Analyzer
Sound Recording	WAV File Format
IR Temperature	-20 °C to 500 °C
Camera	2.0 Mega Pixel
Laser Pointer	Europe Only Output <1mW – Wavelength 640nm – Class II Laser Product All but Europe Output <5mW – Wavelength 640nm – Class IIIa Laser Product
Memory	400 storage locations
Battery	Lithium ION Rechargeable
Operating Temperature	0 °C to 50 °C (32 °F to 122 °F)
Outputs	Calibrated heterodyned output, decibel (dB) frequency,
Probes	Trisonic Scanning Module and Stethoscope Module, Long Range Module and RAS-MT
Headset	Deluxe noise attenuating headphones – for hard hat use
Indicators	dB, Frequency, Battery Status and 16 Segment Bar Graph
Sensitivity	Detects .127 mm (.005") diameter leak @ .34 bar (5 psi) at a distance of 15.24 m (50 ft.)*
Threshold	1 x 10–2 std. cc/sec to 1 x 10 –3 std. cc/sec
Dimensions	Complete kit in Zero Halliburton aluminum carrying case 55 x 47 x 20 cm (21.5" x 18.5" x 8")
Weight	Pistol Unit: 1.1 kg (2.35 lbs.)
Complete carrying case	8.6 kg (19 lbs.)
Warranty	1-year parts/labor standard, 5 years with completed
SD card	warranty registration card dB (main), IR, ABCD, Spectrum and Application Specific, Spectrum Analyzer (modes): Spectrum, Time Series & Dual Specific
Ultraprobe 15,000 Kit	Meets and exceeds ASTM E1002-2005 requirements

Instructions for setting combination for carrying case



The combination is **factory set at** ,0-0-0,,

Setting your personal combination:

- Open the case. Looking at the back of the lock inside the case you will see a change lever. Move this change lever to the middle of the lock so that it hooks behind the change notch (picture 1).
- Now set your personal combination by turning the dials to the desired combination (i.e. birthday, phone no. etc.)
- Move the change lever back to the normal position (picture 2).
- To lock, rotate one or more dials. To open the lock, set your personal combination.

Appendix A

Sensitivity Calibration
Ultrasonic Tone Generator Method
Ultraprobe 15000

It is advisable to check the sensitivity of your instrument before proceeding with your inspection. To assure reliability keep a record of all your sensitivity validation tests and be sure to keep your Warble Tone Generator charged.

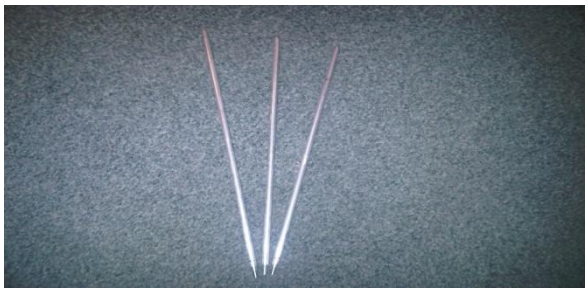
Procedure:

1. Create a chart or use the one below:

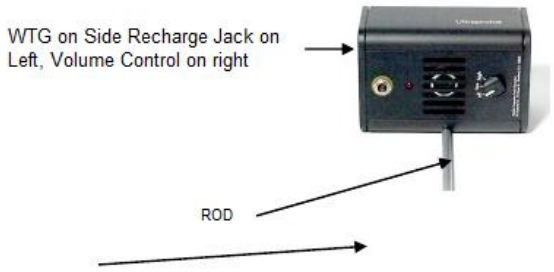
Sensitivity Validation					
Scanning Module	**Date**	**Serial #**	**TG setting**	**Frequency**	**DB**
Contact Module	**Date**	**Serial #**	**TG setting**	**Frequency**	**DB**

A. For the Scanning Module, insert it into the front end of the instrument.

2. Select 40 kHz as the test frequency and note “40” in the Frequency box for the Scanning Module in the Sensitivity Validation Chart
3. Plug in the Headphones and adjust the ear pieces so that they are opened up and place them on the test table
4. In your kit select the longest of the Stethoscope extension probe rods.



5. Place an “L” in the Rod used box of your Sensitivity Validation Chart
6. Place the Tone generator on the side with the front facing you.



7. Place the rod in the middle of the transducer are (as above)
8. Select a volume level on the Warble Tone Generator (Low or High).
9. Note the level (L or H) in the TG box of the Sensitivity Validation chart.
10. Turn the Ultraprobe 15,000 on its’ side so that it will rest flat on the test table with the handle facing you and the Scanning Module facing the Tone Generator.

11. Slide the Ultraprobe gently so that the front faceplate touches the Rod and that the rod is touching the face plate while touching the side of the Scanning Module. Align the Scanning Module so that the center of the module is facing the center of the Tone Generator Transducer (see below).

12. Adjust the sensitivity until the intensity bar graph is at mid-line and displays the decibel level.
13. Note and record the decibel reading in the dB box of your Sensitivity Validation chart.

B. For the Contact (Stethoscope) Module, insert the Module into the Front End of the Instrument:

1. Select 40 kHz as the test frequency and note “40” in the Frequency box forthe Contact Module in the Sensitivity Validation Chart
2. Plug in the Headphones and adjust the ear pieces so that they are opened up and place them on the test table
3. Place the Warble Tone Generator flat facing up with the recharge jack facing you at 90º.
4. Select a volume level on the Warble Tone Generator (High or Low).
5. Note the level (H or L) in the TG box of the Sensitivity Validation chart.
6. With the handle facing you, align the tip of the contact probe with the recharge jack and allow the probe to rest on the jack. DO NOT PRESS DOWN! (NOTE: NEVER USE THE ALUMINUM EXTENSION PROBE RODS THEY WILL SHORT OUT THEBATTERY OF THE WTG)
7. Adjust the sensitivity until intensity bar graph is at mid-line
8. Note and record the decibel in the dB box of your Sensitivity Validation chart.

For all tests:
Whenever you perform a Sensitivity Validation Test, review the data in the Sensitivity Validation chart
and repeat the test using the same rod/module, frequency, and Warble Tone Generator volume setting.
Look for a change in the decibel reading. A change of greater than 6 dB will indicate a problem.

Need further support?
Want information regarding products or training?
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