SYSTEMS INC

UE SYSTEMS INC.
THE ULTRAPROBE 15,000B
MANUAL

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OVERVIEW

INTRODUCTION

The Ultraprobe 15,000B is a versatile instrument with many features that will make for easy, fast, and accurate inspections. As with any new instrument, it is important to review this manual before using it for inspections.

ULTRAPROBE® 15,000B KIT

RAS/RAM - Magnetic Transducer & Cable

Headphones

Pistol-Grip Housing

Long Range Module

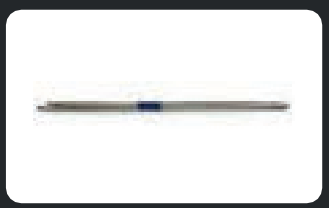
WTG-1 Warble

Stethoscope Module

Battery & Pod

Rubber Focusing Probe

Stethoscope Extension Kit



Battery Recharger

COMPONENTS

PLUG-IN MODULES

TRISONIC™ SCANNING MODULE

This module is utilized to receive air-borne 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) 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 can affect 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.

RMT REMOTE MAGNETIC TRANSDUCER

The RMT 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.

PISTOL-GRIP HOUSING

KEY FEATURES

The pistol grip housing contains 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

This is located on the back of the instrument, under the Display Panel. Press it firmly to turn the instrument ON.

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

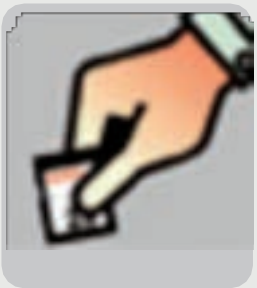
To turn the instrument off:

- Press the On/Off button.
- Touch the Off Box on the display screen.

SD CARD AND SD CARD SLOT

The SD card is used to store the inspection data and sound files. It will hold the test information for transfer to a computer that has Ultratrend DMS V 6.8.6 or higher installed.

To remove the SD card. When removing the SD Card while the instrument is on, open the Home Screen and touch the “Remove SD” icon. A prompt will appear when it is safe to turn the instrument off.



NOTE: *Be sure the SD card is inserted in the Ultraprobe 15,000B before turning it on. ALWAYS touch the “REMOVE SD CARD” icon before removing the SD card.*

PISTOL-GRIP HOUSING

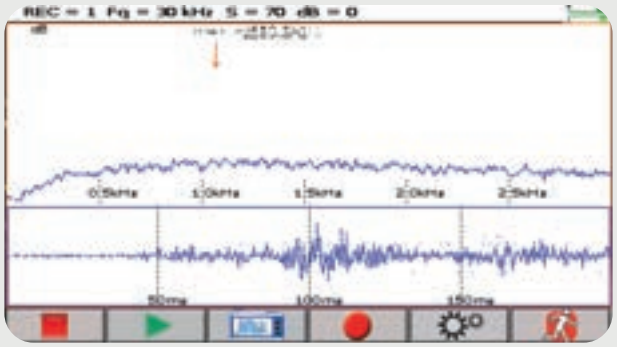
TRIGGER SWITCH

The trigger has multiple functions.

- While performing a test pull the trigger in. Holding the trigger in allows the instrument to actively scan the subject test equipment.
- To hold a reading for storage or review, release the trigger. The instrument will no longer actively adjust to changes in data being received.
- The trigger is also used to turn on the laser pointer or the IR Thermometer when these features have been selected in the “Set Up Menu.”

SPECTRAL ANALYSIS SCREEN

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



TOUCH SCREEN DISPLAY

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

PISTOL-GRIP HOUSING

CAMERA

The camera can be used to capture images of test points or items of interest that can be added into DMS reports.

INFRARED THERMOMETER

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

LASER POINTER

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

To activate the laser:

- Enter the setup mode.
- Select the “Oper” tab and look for Trigger Features. Touch the Trigger Features box.
- 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

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 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. The Warble Tone generator may also be used for specialized tests such as when it is difficult to produce pressure or draw a vacuum, will flood an area with ultrasound which will flow through a (usually) large leak area.

By scanning with the TrisonicTM Scanning Module, empty containers such as bulkheads or hatches can be instantly checked for leakage.

RUBBER FOCUSING 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 31 additional inches (78.7 cm) with the Stethoscope Module.

BATTERY (2)

This Ultraprobe 15,000B uses a lithium-ion battery. A full charge will take about 4 hours; however, it is possible to 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.*

ACCESSORIES

STANDARD ACCESSORIES

BCH-10 BATTERY CHARGER

This is the battery charger for the UP15,000B. 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 15,000B while removed from the metered pistol housing.

OPTIONAL ACCESSORIES

CFM-15

The “Close Focus” scanning module is 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-2BT

Bluetooth headphones are for Standard Applications with or without the use of a hard hat.

ACCESSORIES

OPTIONAL ACCESSORIES

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 multi-directional warble tone generator. It has a high-power output with a circular transmission pattern of 360 degrees.

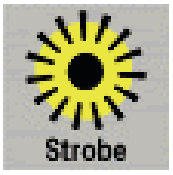
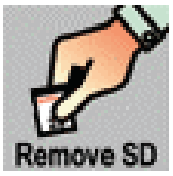
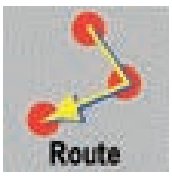
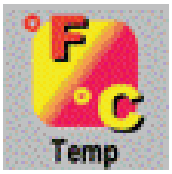
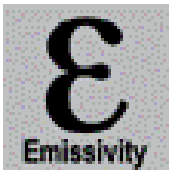
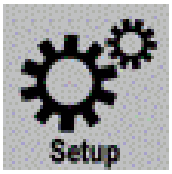
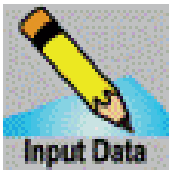
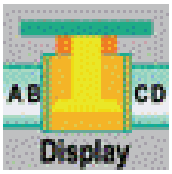
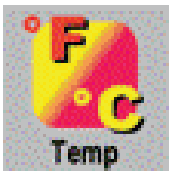
BCH-WTG

Optional 220 VAC @ 50 Hz chargers 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 UP15,000B.

DISPLAY ICONS

	The main default screen		Opens Camera for photos		Strobe
	Main Screen displays dB		Use to View image and take the photo		Remove SD Card
	Display for dB and temperature		Route screen		Bluetooth
	Turns off/on Temperature sensing		Adjust Emissivity		Navigation for Group Selection
	Spectral Analysis screen & function		View a specific historical record		DMS Connection Settings
	Set up instrument functions		Input additional test data to record		WiFi
	Valve/Steam test display		Store test data		Language Selection
	Temperature display (no dB)		Exit screen		SD Diagnostics

SETTING UP THE ULTRAPROBE 15,000B

TO TURN ON THE ULTRAPROBE 15,000B

Press and then release the ON/OFF button as shown.

NOTE: *Be sure the SD card is inserted in the Ultraprobe 15,000B before turning it on. ALWAYS touch the "REMOVE SD CARD" icon before removing the SD card.*

HOME SCREEN

The Home Screen will display the Icons for the operation of the Ultraprobe 15,000B. To select an operating screen, enter the Home Screen.

The icons in the home screen are:

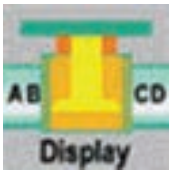
dB (Main Screen)
This will display the test decibel and the test frequency.

Setup: This Icon will enter the setup screen where the user can configure the instrument to meet plant specific test requirements.

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

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

Remove SD Card: ALWAYS (touch) this icon BEFORE removing the SD Card.



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

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

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

SET UP MODES & FEATURES

The Home Screen will display the Icons for the operation of the Ultraprobe 15,000B. To select an operating screen, enter the Home Screen.

To enter the set-up mode:

- Turn the instrument on.
- Locate the Setup icon on the Home Screen.
- Touch the Icon to enter the Setup mode.

NOTE: *To select or change a setting; touch the selection box or circle on the screen. In some instances, it will be necessary to use the UP/DOWN arrows on the right side of the screen to display choices.*

Setup Icons are as follows:

NOTE: *When changing preferences or settings, touch the "**OK**" icon to save the changes. Touch "**Exit**" to exit without saving changes.*

PREFERENCES

Under "Preferences," are the following sub fields:

a. **Inspector ID:** There are three empty fields that can be used to identify the inspector.

b. **Bluetooth:** There are two options; "Enable" or "Disable." This option allows for connection of the audio feed to be connected to a Bluetooth headphone or earbuds. If this is enabled, a Bluetooth icon will appear in the Setup screen.

c. **WiFi:** There are two options: "Enable" and "Disable." Enabling this feature will have the unit send and retrieve data to DMS database via WiFi network.

d. **Group Mode:** "Single" imitates the way the user collects data with the older version of the UP15,000 where the user loads one group onto unit to collect data. "Multi" gives the user the option to load multiple groups onto the new UP15,000B at one time and be able to switch between groups without using multiple SD cards.

SET UP MODES & FEATURES

e. **Module type:** This field allows the inspector to choose the module to be used in the inspection. (Ex: SCM, LRM etc.)

> **NOTE:** *Changing module type in this section does NOT change the frequency settings.*

f. **Disp (Display) Response:** There are three options, the inspector can control the speed at which the bar graph moves in relation to the meter responds to reflect a dB level. There are three choices: Slow, Medium, Fast. The instrument defaults to Slow.

g. **Triggr (Trigger) Features:** There are two options: “Laser on” and “Laser Off.” The Laser can be used for long distance inspection.

h. **Alarm Enable: There are two options:** “Enable” and “Disable.” Enabling this feature will have the instrument alert the user if the monitored asset has moved into an alarm state. This will present itself my coloring the dB reading red.

i. **Rec on Alarm: There are two options:** “Enable” and “Disable.” Enabling this feature will cause the Display Screen to automatically advance to the FFT Screen when the monitored asset has moved into an alarm state. Alarm Rec (Record) Time: There are four options: The selection will include a time value of from 5 seconds up to 30 seconds. The user may also select MANUAL. When MANUAL is selected, press the REC (recording) box in the Spectral Screen. To stop recording, Press STOP.

j. **Headphone Vol (Volume):** There may be situations in which the sound level in the headphones is uncomfortably high and the sensitivity level must remain at an elevated level. To make this comfortable for the user, the volume of the headphones can be adjusted from 100% of volume to as low as 0% of volume.

k. **Turn Off Time:** The Turn-off time can be set to 5, 10 or 15 minutes. 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.

l. **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.

m. **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 15,000B. 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 two and the 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.

n. **Units:** Set measuring units for Standard or Metric.

o. **Frequency Def (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.

p. **Sensitivity Def (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

Under “Info,” are the following sub fields:

a. **Show Versions:** This shows the software version that is on-board the UP15000B.

b. **Set Date/time:** Set the time and date as appropriate for a specific area in which the instrument is used.

c. **Calibration Due:** This is set at the factory and reset every time the Ultraprobe is sent back after calibration.

d. **MAC Address:** Unique identifier for the UP15,000B on the network.

e. **SD Diagnostics:** Displays the status of the internal and external SD cards.

RESET

Under “Reset,” are the following sub fields:

a. **Restore Lists:** Options are “Yes” or “No.” All test information is set as a list in Ultratrend DMS, the standard operating software that accompanies the Ultraprobe. If the 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.

b. **Deflt (Default) Settings:** When Yes is selected, the instrument settings will default back to the original settings as it came from the factory.

UPGRADE

Under “Upgrade,” are the following sub fields:

a. **Upgrade Progm (Program):** The options are “Yes” or “No.” When there is an upgrade to the Ultraprobe 15,000B it may be downloaded off the web onto the SD card. Insert the SD card with the upgrade and use Upgrade Program.

b. **Upgrade Lang (Language):** The options are “Yes” or “No.” Contact UE Systems for assistance.

SET UP MODES & FEATURES

APPLICATIONS

NOTE: *Only available in "Single" Group Mode.*

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

LANGUAGES

Ability to change language

DMS CONNECT

Ability to connect to the DMS database by entering the IP address and port number for where the DMS database resides so that the user would be able to send/receive data from the 15,000B when WiFi is enabled. (To use this feature "Multi" Group Mode must be selected in Preferences)

WiFi

Connect to any available WiFi networks that unit sees to send data to DMS database. Be aware, to send/receive data between the Ultraprobe 15,000B and DMS database it will need to be on the same network. (To use this feature "Multi" Group Mode must be selected in Preferences)

EXIT

Touch this icon to return to the "Home" page.

VIEWING AND SELECTING ICONS

Icons may be viewed on any of the following display screens: Main, dB and Temperature, Valve and Temperature.

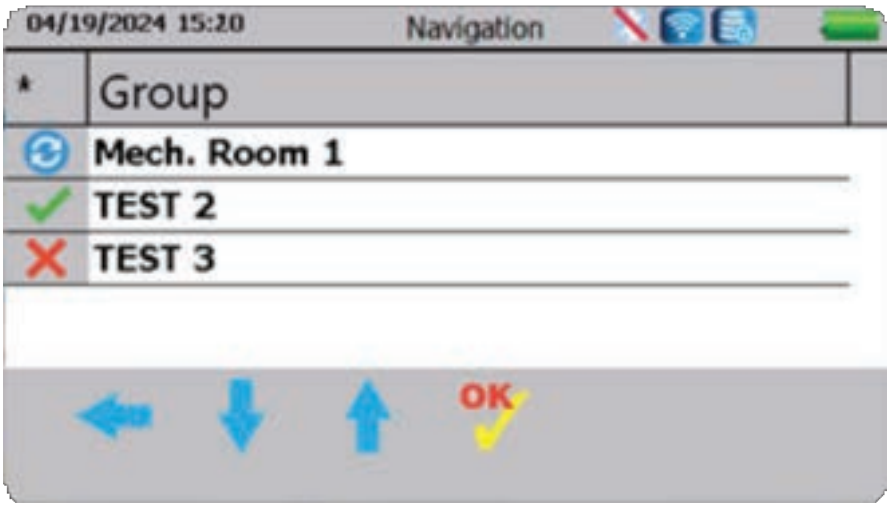
- Only two icons at a time may be shown continuously.
- To view icons: touch the bottom of the screen.
- To view more icons, use the “left/right” arrows to move icons on and off the screen.

To select an icon for continuous display and easy access on the screen:

- Touch the bottom of the screen to display the icons.
- Use the left/right arrows until the icon needed is displayed.
- Touch the icon and slide it up to the middle of the left side of the display screen.

MULTI-GROUP

The UP15,000B allows the user to load multiple Groups onto the device at one time. Instead of swapping SD cards to load a single Group to continue collecting data. (DMS 6.8.6 or greater is required for this feature). Please reference DMS 6.8.6 User Manual for instructions on how to synchronize multiple Groups onto a SD card.



To access the “Multi”-Group function:

a. Goto **Setup**, then **Preferences**

b. Enable “Multi” for Group Mode

c. Go back to Home, select Navigation.

d. Select the plant, application and then the group user wants loaded.

e. UP15,000B will then take the user back to Home screen for user to decide what display to use to start collecting data.

VIEWING AND SELECTING ICONS

f. Once route is completed the user can then go back to Navigation to select another route to continue collecting data.

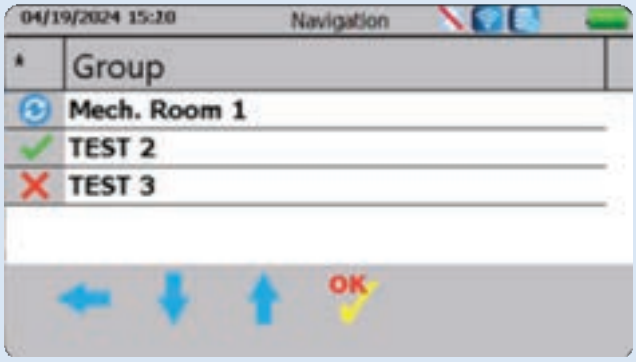
g. If done for the day, shut down unit, then remove the SD and insert it into their PC to Synchronize Groups on Probe to send all data collected from multiple routes back into their DMS from the communications tab.

NOTE: *If UP15,000B is connected to WiFi, data collected will be sent directly to DMS via WiFi if the unit knows the IP address of the computer that is holding the database. Connection to DMS is done through DMS Connect on UP15,000B.*

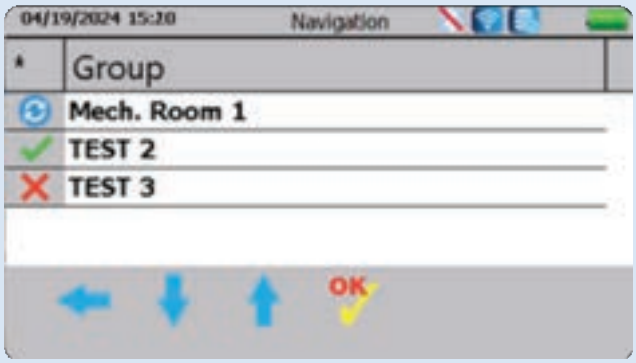
GROUP SYNCING

When the user has multiple Groups loaded onto unit, they can navigate to the specific Group by selecting the Navigation button. Users will have access to any Groups that are synced to their 15,000B. Groups that are synced will have a green checkmark beside the Groups.

NOTE: 15,000B will need to be in “Multi” Group Mode.

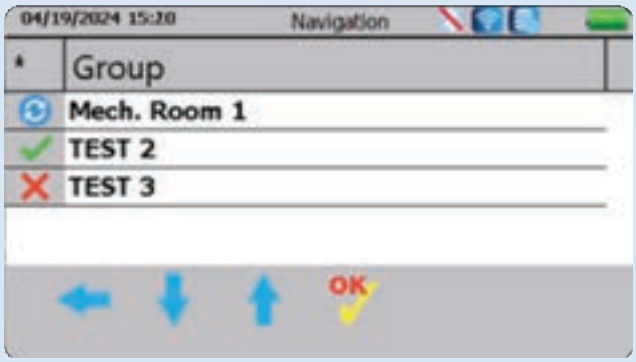


Any Groups that haven’t been synced onto the 15000B will have a red “X” beside it. It will not be able to be used until user syncs that group from their DMS database.

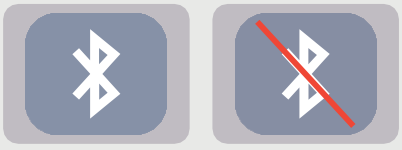


VIEWING AND SELECTING ICONS

If a group is out of sync, a blue circle with spinning arrows will be displayed next to the Group(s).
To re-sync the group, highlight the group and then touch OK. This will re-sync the data between the DMS database and the UP15,000B. A progress bar will scroll across the screen.



Group needs syncing	
Group is synced	
Group is not synced	

DMS Database disconnected/connected	
Data being uploaded to DMS database	
WiFi connected/disconnected	
Bluetooth connected/disconnected	

USING THE SCREENS

To use any of the screens:

- Turn on the Ultraprobe by pressing the ON button. When the Home screen opens, select an icon.
- To use an operational screen such as “Main,” “dB/Temp,” “Temp,” or Valve.
- Pull the trigger in and begin the inspection. If no or very little ultrasound is present, or 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.
- To freeze a reading for saving or observation, release the trigger.

MAIN

This screen will display the Record number, Decibel, Frequency, Sensitivity level, and an Intensity Level box. The Intensity Level box also acts as 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.

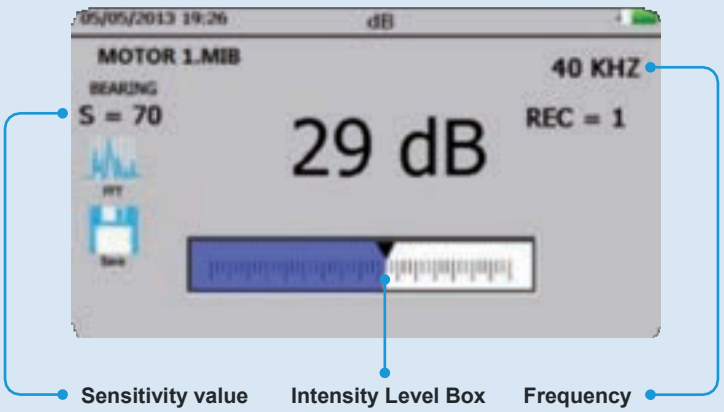
b. **To change the Sensitivity:** touch the sensitivity value when a highlight appears around the selected area then use the UP/DOWN arrows to change. Changes in the sensitivity value will show in the upper left of the screen. An alternative to using the arrows is to use the intensity level box, which uses a bar graph to indicate intensity. Touch 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 is pulled in.



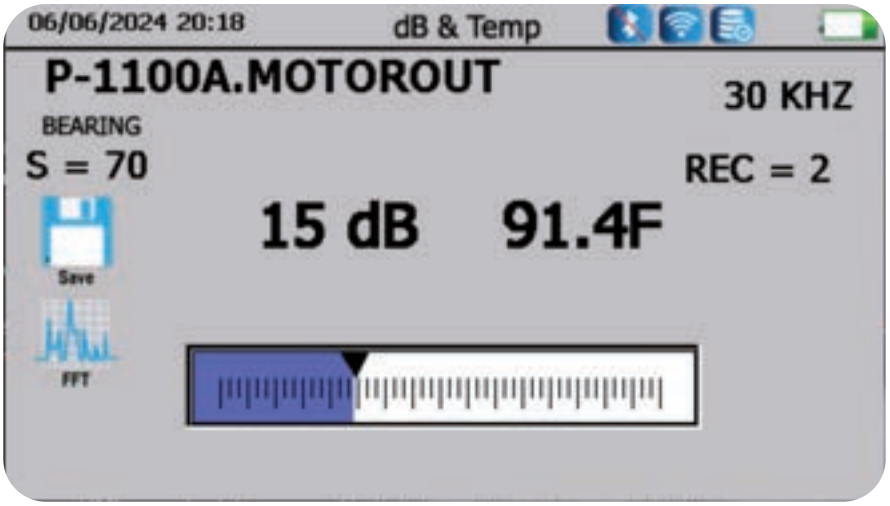
USING THE SCREENS

PLANT/GROUP INFORMATION

If user has a Group loaded and wants to make sure they are on the correct Group, they can press and hold the location/ point on any display to show the Plant and Group name.

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 asthe sensitivity control. There are two control arrows on the right to be used to adjustsensitivity and frequency.



To freeze a temperature reading while continuing to assess for decibel level:

a. Touch the bottom of the display screen and use the LEFT/RIGHT arrows until the Temp on/off icon is shown.

b. Touch the icon to turn off temperature sensing.

c. When done, locate the Temp on/off icon and touch it again to turn the temperature reading function back on.

USING THE SCREENS

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:

d. Pull the trigger to activate the Active Scan Mode.

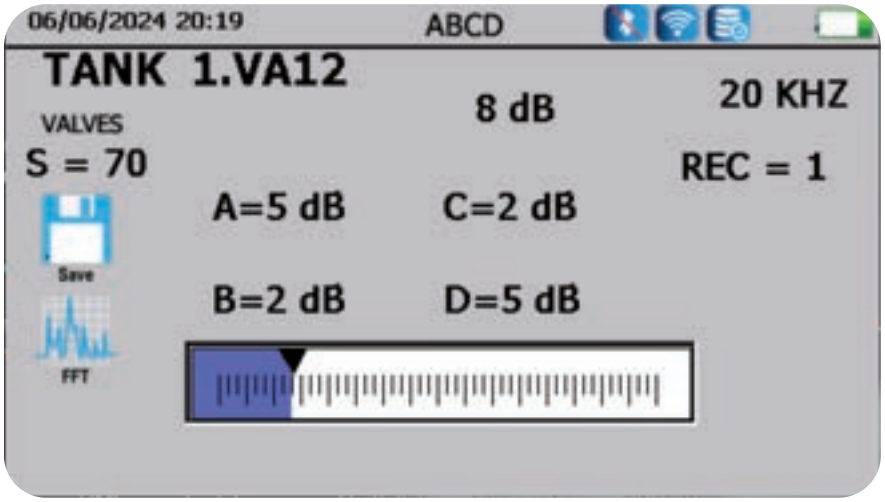
e. To freeze the data for storage, while pointing or touching the test point in the active mode, release the trigger. The data will be frozen on the screen until it is either stored or the Trigger is pulled in.

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

g. 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.



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. touch 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, touch the blank B lines and the dB reading will populate that section.

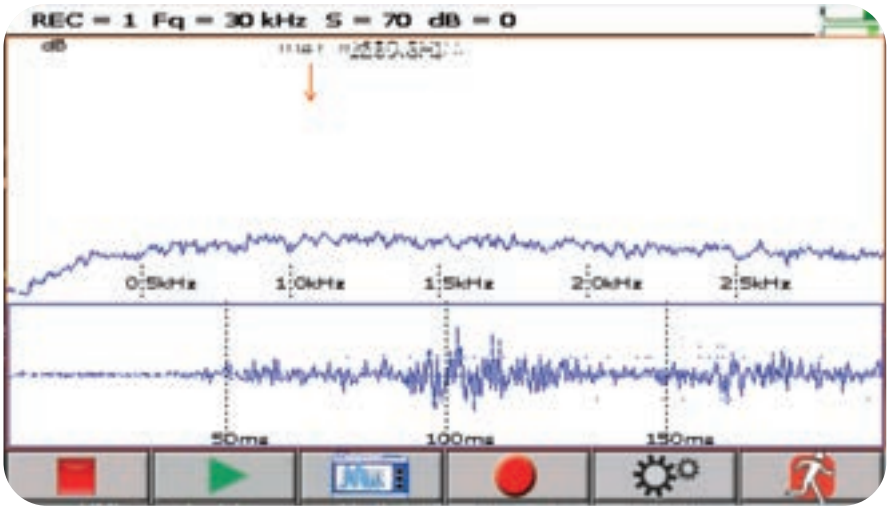
c. Touch valve test point C, be sure the instrument is in active test mode. Freeze the reading on the screen by releasing the trigger, touch the blank C lines and the dB reading will populate that section.

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, touch 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.

SPECTRALYZER

The onboard Spectralyzer 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, SETTINGS, AND EXIT.



Start/Stop: When the Spectra screen opens it will start to display sounds sensed by the Ultraprobe. To stop this, touch the Square Red icon to STOP, to start evaluating a sound sample, touch it again to start.

Play: To play a recorded sound back on the Ultraprobe and to view it while hearing it, touch the Green Arrow icon to play.

Capture: To capture an image of the screen, touch the third icon from the left. This image can be used in reports.

Record: To record sound sample touch this Round Red icon. If in the MANUAL record mode, press the REC icon. To stop in Manual mode, press STOP. If the instrument has been set for a preset recording time in the Setup Mode, then just touch and release the record icon.

Exit: Touch this icon to exit to a previously selected screen.

Levels: To set up the Spectralyzer, touch the “Settings” icon once Spectralyzer is open. The first screen has adjustments for setting the levels for the Spectra screen and for the Time Series Screen. There are 3 adjustments:

- dB (decibel) Scale: This can be used for both the Spectra and Time Series screens.
- Freq (Frequency) Scale: This is used in the Spectra Screen.
- Time Scale: This allows for adjustments to the ms or milliseconds.
- To exit back to the main Spectra screen, select Done.

Control: On the bottom-right of the LEVELS screen is the Control box. Labeled “Control” Touch to enter.

The settings are:

- Screen views: Select FFT screen or Time Series Screen or view both.
- lack /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.
- CPM: instead of using the default Hertz, the scale can be set to read CPM (Cycles Per Minute).
- Log Scale
- Average
- Linear Scale
- Detect Peak
- Exit on Save WAV: After a sound sample has been recorded and saved, the Instrument will exit and return to the previously selected Operating Screens.
- When finished adjusting the settings or to exit back to the Spectra Screen, select “Done”.

STORING A RECORD

a. Release the trigger to freeze the desired reading.

b. Locate the Store Record icon.

c. Touch the “Save” icon.

USING THE SCREENS

ENTERING TEST DATA

a. Locate the Input Data icon.

b. 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.

c. To move from one selection to another, use the Left/Right arrows.

d. Touch the screen of the desired data (ex: RPM or TEMP).

e. Use the UP/DOWN arrows to enter the desired data.

f. These input data fields are set (and may be changed) in Ultratrend DMS.

VIEW RECORD

A record can be viewed on an operational screen. The record number can be changed to display the record desired.

a. Touch the Record box.

b. Use the UP/DOWN arrows to locate the desired record number.

c. Locate the View Record icon.

d. Touch the icon.

e. When the data appears, all the stored data can be reviewed by scrolling up or down with a stylus or finger.

VIEWING A ROUTE

a. Locate the Route icon by touching the bottom of the display screen

b. Touch the Route icon.

c. Sorting Route Criteria: Using the SORT button, every time it is pressed, it will resort. Sort options are Record #, Low Status, High Status, OK Status or Not Updated.

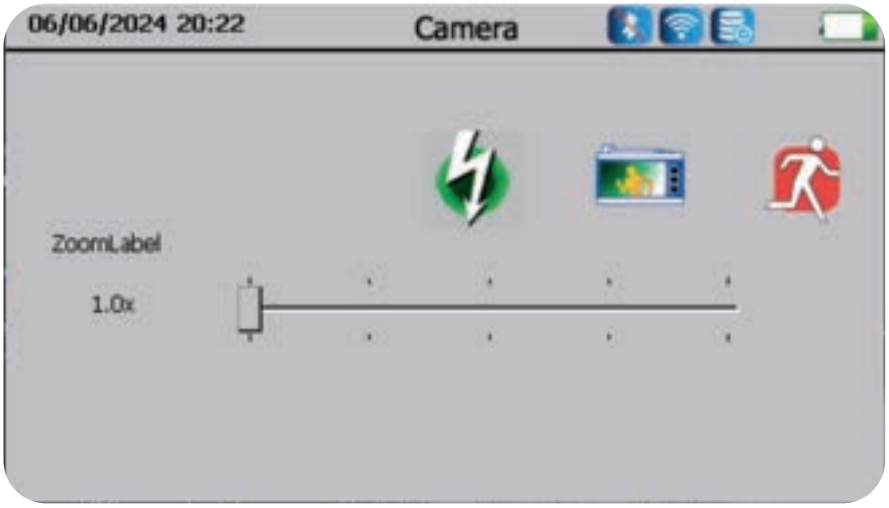
d. Reviewing a Photo: If a Y is shown in the “Photo” column (Camera icon) the user can view the image by touching the Y. If multiple images are stored, touching the display screen shuffles through all images stored to that location.

e. Reviewing Wave Files: If a wave file is stored, it is possible to play either the baseline or current wave file. To play the baseline, touch the Y in the WAV file column (Speaker icon) and play.

f. To open the record in the main dB display, touch the Record #.

CAMERA

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



a. Flash: On/Off: The flash is on by default. To turn the flash “Off,” touch the flash icon. A red line will appear through the icon indicating it is off.

b. Zoom: To zoom in or out (up to 3X), touch the zoom box at the desired zoom location. The zoom level will be displayed to the left of the zoom box.

c. To capture a photo, touch the View Photo icon and the image will be shown on the screen.

d. Touch the image screen to capture the photo.

e. The photo will appear with the test data superimposed on it. There will also be a second duplicate photo without the data superimposed. Either one can be used for reports.

f. To save, press the Save icon. A pop-up box will appear asking; “Save Picture?” To save the photo, touch “Yes.” Press “No,” if is not to be saved. Touch the Exit icon to return to previous screen without saving the image. The user can start again to capture the desired photo.

STROBE

To capture an RPM, touch the Strobe icon. The Strobe screen will look like this:

a. Turn the flash feature on by touching the flash icon with the red dash through it. The dash will disappear.

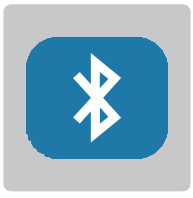
b. Adjust the RPM as needed. (The max is 4000 and the min is 1)

c. To take a picture of the asset with the RPM superimposed on the picture, touch the Camera icon. (This is optional)

d. To save the RPM, touch the Save icon. The RPM will be transferred to the DMS software later.

e. Touch the Exit icon to exit.

NOTE: *The RPM data will be stored in the "RPM" field under the "Record Information" tab once the data is transferred from the UP15000B into the DMS software.*



BLUETOOTH

To enable Bluetooth, go to settings. There are two options; "Enable" or "Disable." This option allows for connection of the audio feed to be connected to a Bluetooth headphone or earbuds. If this is enabled, a Bluetooth icon will appear in the Setup screen.

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 frozen on the screen, select the Save icon.

The trigger can also be used to turn on the Laser Pointer.

NOTE: *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 receives the headset jack. 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 15,000B while removed from the metered pistol housing.

USERS INSTRUCTIONS

TRISONICTM SCANNING MODULE

- This module plugs into the front end of the instrument.
- 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.
- For typical use position the frequency selection to 40 kHz.
- Start to scan the test area.

METHOD OF AIRBORNE DETECTION

The method of air borne detection is to go from the “gross to the 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 repeatedly until you can 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 FOCUSING PROBE

To use, simply slip it over the front of the scanning module or the contact 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)

- This module plugs into the front end of the instrument.
- 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.
- For typical use position the frequency selection to 40 kHz.
- Start to scan the test area.

STETHOSCOPE MODULE

- 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.
- 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.

RMT

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 UP15,000B

- Plug recharger cable into recharger jack on the UP15000B and then plug the recharger into a wall receptacle.
- Make sure that the LED on the charger is blinking when recharging.
- The LED remains solid when the battery is charged. The instrument may stay connected to the charger without damaging the battery. The charge time is approximately 4 hours.

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 performing any test with the Ultraprobe. It provides assurance that the instrument is working properly to provide repeatable, reliable results for any inspections. This is a procedure that is recommended for any Predictive Maintenance instrument used. If performed regularly it will promote accuracy and test reliability throughout the PdM program.

  For detailed instructions, refer to Appendix A: “Sensitivity Validation Procedure.”

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

- **As a method for locating large leaks when it is difficult to produce pressure or vacuum.** To perform this test:

a. 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.

b. Place the Warble Tone Generator within the test item/container and seal or close it. Then scan the suspect areas with the TrisonicTM 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.
- Make sure that the red LED on the charger is lit when recharging.
- The LED turns OFF when the battery is charged.

HELPFUL HINT

Review the applications section to become familiar with the basic inspection methods to ensure repeatable, reliable results.

AUTO-SHUTDOWN BATTERY FEATURE

The Ultraprobe 15,000B 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 then shutdown. 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 15,000B back on to continue testing.

ULTRAPROBE 15,000B SPECIFICATIONS

CONSTRUCTION	Hand-held pistol type made with 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	< 10 ms
DISPLAY	QVGA Touch Screen - IR, Laser Pointer, Camera, Spectrum Analyzer
SOUND RECORDING	WAV File Format
IR TEMPERATURE	-20°C to 500°C (-4 °F to 932 °F)
CAMERA	5.0 megapixels, LED Flash
LASER POINTER	Output <1mW – Wavelength 640nm – Class II Laser Product
MEMORY	128 GB External SD
WIFI	Frequency 2.4 GHz, Security: TKIP, AES, WPA & WPA2
BLUETOOTH	v.4.2 Supported profile: A2DP Frequency Range 2.4GHz – 2.48GHz
BATTERY	Lithium ION Rechargeable
OPERATING TEMP.	32°F to 122°F (0°C to 50°C)
OUTPUTS	Calibrated heterodyned output, decibel (dB) frequency, SD card.
PROBES	Trisonic Scanning Module, Stethoscope Module, Long Range Module and RMT
HEADSET	Wired and Bluetooth deluxe noise attenuating headphones for hard hat use.
INDICATORS	dB, Frequency, Battery Status and 16 Segment Bar Graph

SENSITIVITY	Detects .005” (.127 mm) diameter leak @ 5 psi (.34 bar) at 50 ft. (15.24 m) *
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 21.5” x 18.5” x 8” (55 x 47 x 20cm)
WEIGHT	Pistol Unit: 2.35 lbs. (1.1 kg). Complete carrying case: 19 lbs. (8.6 kg)
WARRANTY	1 year parts/labor standard.
DISPLAY MODES	dB (main), IR, ABCD, Spectrum and Application Specific, Spectrum Analyzer (modes): Spectrum, Time Series & Dual Specific

***Depends on leak configuration**

Ultraprobe 15,000B Kit: Meets and exceeds ASTM E1002-2005 requirements for Leak Detection.

Covered by one or more of the following patents: 0151115; 0303776; 0315199; 1206586; 1297576; 1881263; 2562758; 2689339; 4416145; 4823600; 5955670.
6122966; 6339961; 6341518; 6415645; 6655214; 6707762; 6804992

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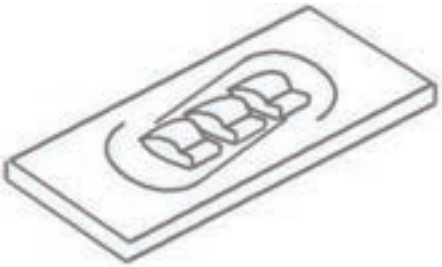
UE Systems is committed to continual product improvement; therefore, specifications are subject to change without notice. Warranty details are available by request.

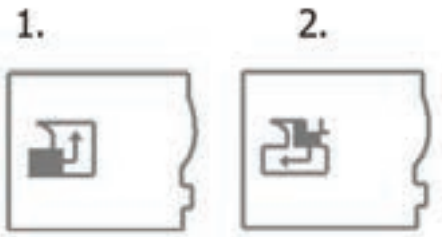
INSTRUCTIONS FOR SETTING COMBINATION ON CARRYING CASE

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 changing lever. Move this change lever to the middle of the lock in a way that allows it to hook behind the change notch (drawing 1).
- Set your personal combination, turning the dials to the desired combination (i.e., birthday, phone #, etc.).
- Move the change lever back to the normal position (drawing 2).
- To lock, rotate one or more dials. To open, set to your personal combination.





INTERNATIONAL PATENTS PENDING

YOUR PERSONAL COMBINATION:

APPENDEX A - SENSITIVITY CALIBRATION

ULTRASONIC TONE GENERATOR METHOD ULTRAPROBE 15000B

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

PROCEDURE

1. Create a chart or use the one below:

SENSITIVITY VALIDATION						
SCANNING MODULE	Date	Serial #	Rod Used	TG Setting	Frequency	DB
CONTACT MODULE	Date	Serial #	Not Applicable	TG Setting	Frequency	DB
			Not Applicable			

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 earpieces so that they are open and place them on the test table.
4. Select the longest of the Stethoscope extension probe rods.

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

PROCEDURE

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 15,000B on its' side so that it will rest flat on the test table with the handle facing the user 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. (on the right).
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 the 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 for the Contact Module in the Sensitivity Validation Chart.
2. Plug in the Headphones and adjust the earpieces so that they are opened and place them on the test table.

PROCEDURE

3. Place the Warble Tone Generator flat facing up with the recharge jack facing the user at 90 degrees.
4. Select a volume level on the Warble Tone Generator (High or Low).
5. Note the level (H or L) in the WTG box of the Sensitivity Validation chart.
7. With the handle facing the user, align the tip of the contact probe with the “Sensitivity Validation Test Point” and allow the probe to rest on the jack. DO NOT PRESS DOWN!
8. Adjust the sensitivity until intensity bar graph is at mid-line.
9. Note and record the decibel in the dB box of the Sensitivity Validation chart.

FOR ALL TESTS:

When performing 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.

UE SYSTEMS INC

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