

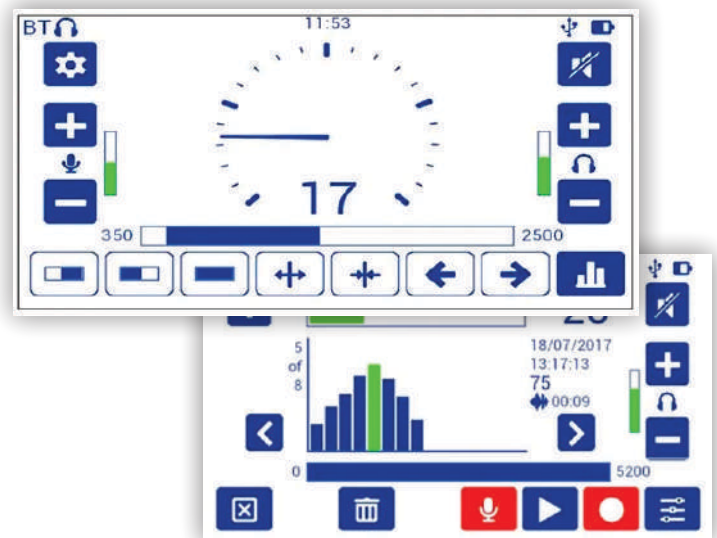
# DXmic Pro | Digital Ground Microphone Water Leak Detector

**DXmic Pro is the latest generation Digital Ground Microphone Water Leak Detection Equipment to precisely Localize the Position of a Leak in Buried Water Pipes.**

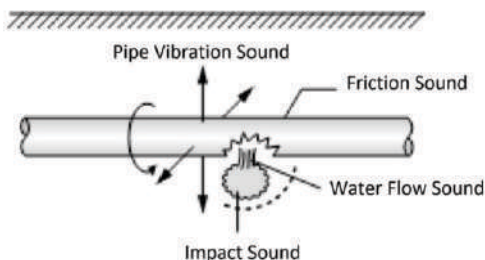
DXmic incorporates a wide variety of features including **Auto filtering** and frequency with display, to help pinpoint a leak position.

Based on a highly sensitive piezo electric **elephants foot ground microphone** with an advanced **touchscreen controller** for identifying leaks in buried water pipes of different materials & depths, The DXmic is used to listen for & pinpoint water leaks in all types of water pipe networks under pressure, such as **metallic and non-metallic water pipe networks**, in both the main lines and branches of metro & industrial environment, for **water pipes upto 600mm in diameter** & which are being used at **≥ 1 bar pressure**, allowing the operator to detect leaks in pipes buried upto 5 meter \* depth below ground (\* depending on pipe pressure, pipe material & condition)

**DXmic Pro further records leak noise**, including the **ability to replay recording**, allowing the operator to validate leak located or additionally share with the leak expert within the team for validating prior digging for repair, and additionally allowing create an archive of leak sounds for reference.



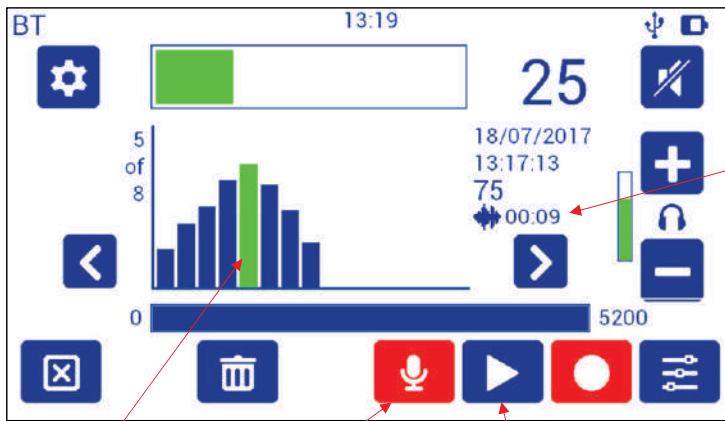
**Water Leak Indication :** When moving along the path of a given water pipe, the closer you get to the leak point, the signals received from the leakage will grow in intensity and/or range. The noise heard becomes louder and larger horizontal signal bar-graphs are displayed on the screen.



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**Operating Modes :** The Dxmic provides the user Two Operating Modes : **Survey Mode & Minimum Level Profiling (MLP) mode.**

**MLP (Minimum Level Profiling)** is performed by **stepping along the line of the suspect pipe and recording the sound levels.** The ground microphone is placed on the ground and the sample button pressed momentarily. The DXmic then records the minimum noise over three seconds. **As each measurement is taken the histogram graph is built up** showing the difference between each reading visually and numerically, making noise level comparison a simple task. For each measurement taken a number appears to the right of the histogram. This noise level value is a relative indicator for each measurement. Once several readings have been taken the operator can select a sample by pressing the < or > buttons either side of the graph. The numerical noise level value is then shown for each measurement. **DXmic can store up to 100 measurements.**



Recording length

Selected Peak measurement

Start/stop audio recording

Play/pause selected sample

DXmic Pro allows the user to record sound samples when in MLP mode.

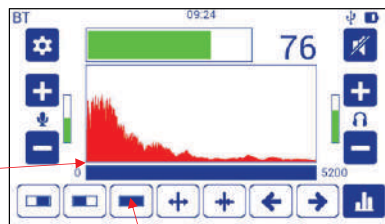
- Up to two minutes of sound can be recorded per sample. The audio recording will appear as a bar in the graph.
- When a measurement with an audio recording is selected from the graph the recording length will appear under the noise level indicator.
- To **playback** an **audio sample** navigate the bar graph and select a sample with audio recording and press the play button.
- **During playback** it is possible to **access the filter selection screen** and modify the filter configuration.

## Survey Mode Screens

### Unfiltered Noise

This is the initial default screen, which appears when the DXmic is switched on. This screen shows when no filters are applied.

The frequency spectrum indicator bar shows that all frequencies are available.

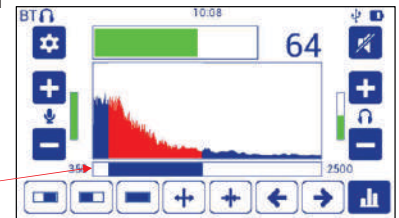


Unfiltered noise reset button.

### Pre-set Filter for High Frequencies Only.

Used on metal pipes

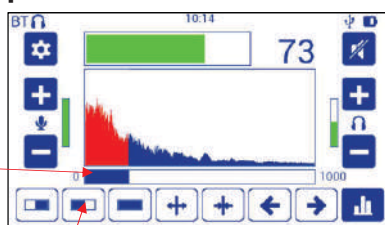
High pass filter



### Pre-set for Filter for Low Frequencies.

For Plastic (medium density polyethylene (MDPE)) pipes.

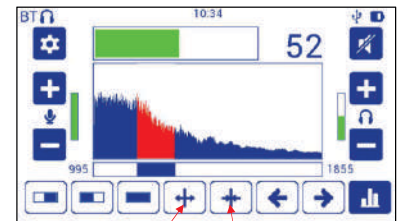
The frequency spectrum indicator bar shows both medium and low frequencies are allowed through.



Low pass filter

### Adjustable Filters – Bandwidth

Background or unwanted noise frequencies can be filtered out using a combination of the controls on the DXmic. Unwanted frequencies can be filtered out via the bandpass, bandwidth and filter position buttons.

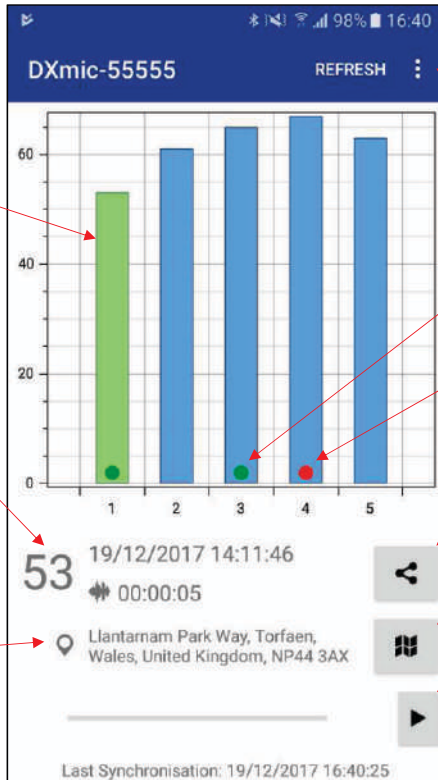


Expand bandpass

Reduce bandpass

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## Android & iOS Mobile App



Selected measurement

Context menu

Recording (Downloaded)

Recording (not downloaded)

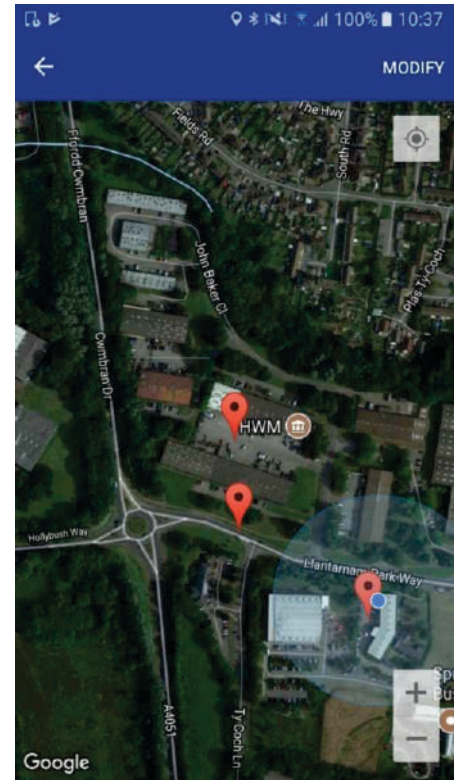
Measurement details

Share

Map/Set location

Play

Location details



### Measurement Geolocation

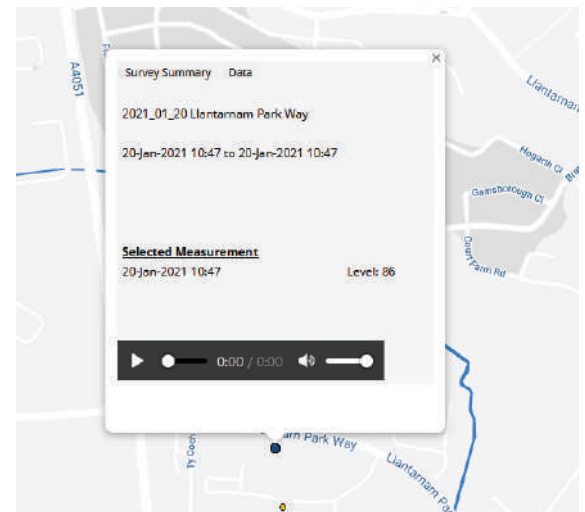
**When the DXmic Pro is used together with DXmic Pro App, geographic location data can be added to the information recorded when taking a measurement.**

DXmic Pro App allows the user to connect their mobile device to the DXmic Pro to retrieve and share data and audio recordings. The App also enables to collect location information from the mobile device to complement measurements and sound recordings.

- it is possible to scroll and pinch to zoom in and out the bar graph.
- If a measurement contains location data, the location address will be shown, tap on this field to display coordinates.
- Audio recordings are represented in the graph as bars. Selecting a recording from the graph will allow the user to play the audio sample. In addition it is possible to hear all downloaded recordings.

### DXmic Pro App allows the user to share measurement data and recordings via email or using the HWM cloud based web portal DataGate.

- Tapping the "Share" button will summon the Share screen, where it is possible to select which measurement to share by tapping on the bars in the graph.
- It is additionally possible to enter a name for the set of selected measurements; this name will be used to generate the email subject and/or the sub-account name on DataGate and is emailed using the default email system of your mobile.
- It is possible to further upload the measurement data & recordings to the DataGate server for archiving data based on DMA (District Metered Area) sub accounts, with facility to email the same to other team members.



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## Specifications

<b>Sensor Pick up unit, Type</b>	Piezoelectric type
<b>Utilised for</b>	Pressurized water pipes of $\geq 1$ Bar, Diameter $\leq 600$ mm (nominal)
<b>Frequency Range</b>	0 to 5000Hz
<b>Band Pass Filters</b>	Selectable band pass filters : Adjustable High Pass: 0Hz, Low Pass: 5200Hz
<b>Bandwidth</b>	Adjustable in range 0Hz.....to .....5200Hz
<b>Display Type &amp; Size</b>	5.0 inch TFT LCD Color TouchScreen
<b>Backlight Control</b>	Backlit multi-function LCD touchscreen showing: 1. Graphical and digital noise levels 2. Dynamic sensitivity (signal strength) 3. Settings and operation mode
<b>Depth Capability of System</b>	Upto 5 meters depth for buried water pipes (or higher), depending on pipe water pressure, pipe diameter and other conditions.
<b>Signal display on controller</b>	Measuring and displaying values: <ul style="list-style-type: none"> <li>• Signal Strength</li> <li>• Minimum Signal Strength</li> <li>• Average Signal Strength</li> <li>• Display values in numeric, Bar-graph and Gauge view (User Selectable)</li> <li>• Length of leak noise sound recording in seconds</li> <li>• Date/ time of operation</li> </ul>
<b>Operating Modes &amp; Filter Selection</b>	<ul style="list-style-type: none"> <li>• Survey Mode with Filter selection with noise level indicator and frequency analysis</li> <li>• Minimum level profiling: Records levels of leak noise at various locations for comparison as a histogram profile</li> <li>• Auto Survey Mode</li> </ul>
<b>Menu Control</b>	GUI with icons, for easy configuration, With User control of a. Gain b. Headphone volume, including headphone pairing through bluetooth c. Ear protection filters On/Off to protect user against sudden noise, with Lo/Mid/High filters
<b>Notch filter</b>	Sharp filter set around the mains frequency to reduce electrical noises from mains power equipment
<b>Leak Judgement mode</b>	Auto survey mode in conjunction with Mobile App automatically records GPS, sound levels, recordings, and make leak judgements (Leak/No-leak)
<b>Auto filter function</b>	Auto Filter through Software identifies the peak and adjusts the filters to eliminate extraneous noise
<b>Ear protection Safety</b>	Built in Auto Hearing protection filter, selectable, analyses the noise level of incoming signal & limits loud sound levels. Protection level include : Low (70dB), Medium (80dB) & High (90dB)
<b>Headphone support</b>	Studio quality headphones (Provided as default)/ Wireless Bluetooth headphones (Optional)
<b>Memory/ Leak noise level recording function (Interface)</b>	Bluetooth & USB
<b>Sensor IP Rating</b>	IP 65
<b>Amplification</b>	46dB
<b>Operating / Storage Temperature:</b>	-10 to +50 °C / -20 to +60 °C
<b>Battery</b>	2 x Lithium ion rechargeable batteries (Batteries replaceable in field at end of life)

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No of Batteries	2	
Battery Operating time	upto 25 hours	
Charger	Universal 110-240V AC mains charger with 12V DC output	
Main Unit (L x W x H)	193 x 109 x 60 mm	
Main Unit	600g (with batteries)	
Pick-up sensor with hand-switch set	2.9 KG	
Complete system	3.5 KG	
Standards compliance	<p>FCC etc SI 2017 No. 1206* The Radio Equipment Regulations 2017.            SI 2012 No. 3032* The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012. United Kingdom designated standards below:            EN 301 489-1 V2.2.3 ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements.            EN 301 489-17 V3.2.4 Part 17: Specific conditions for Broadband Data Transmission Systems.            EN 300 328 V2.2.2 Data transmission equipment operating in the 2,4 GHz band.            EN 61010-1:2010/A1:2019 Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: General requirements.            EN 62311:2008 Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz - 300 GHz).            RoHS: EN IEC 63000:2018 Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances.            The UKCA marking is applied accordingly Contains FCC ID: 2ADHKBM83SM1, RI7-S42M</p>	
Warranty	One Year Warranty from the date of delivery	
Standard Supply includes	<ol style="list-style-type: none"> <li>1. DXmic module with adjustable carry strap.</li> <li>2. Acoustically shielded ground microphone foot.</li> <li>3. Wireless headphones.</li> <li>4. Lithium ion battery pack and battery charger.</li> <li>5. Carry case.</li> <li>6. Cables.</li> <li>7. Manual.</li> </ol>	<p><b>Optional:</b> Hand probe is supplied with a tripod foot and two aluminium probe rods for sounding in soft ground. Each probe rod is 400mm in length</p>

## Optional Sensors:

### Hand Probe Tripod Microphone (For use on Gravelly Surfaces)



### Listening Rods (Used with DXmic Pro for electronic listening by direct contact to pipe or by inserting through soft soil)



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Catalogue Version : F1/DXmic-Pro/24-25/HWM

**Quality  
Management  
System**

**ISO 9001: 2015**

**# 1-QSC202101102**



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