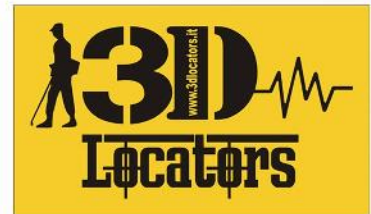




# LPS - 1200



© ALL RIGHTS RESERVED



# INDEX

<b>I.</b>	<b>Introduction .....</b>	<b>1</b>
<b>II.</b>	<b>Technologies .....</b>	<b>3</b>
<b>III.</b>	<b>System Specifications .....</b>	<b>6</b>
<b>IV.</b>	<b>Sensor Specifications .....</b>	<b>7</b>
<b>V.</b>	<b>LPS - 1200 .....</b>	<b>8</b>
<b>VI.</b>	<b>Working Methodology .....</b>	<b>11</b>
<b>VII.</b>	<b>Depth Axis .....</b>	<b>25</b>
<b>VIII.</b>	<b>Report .....</b>	<b>29</b>
<b>IX.</b>	<b>Auto Locating .....</b>	<b>31</b>
<b>X.</b>	<b>Internet &amp; Email Settings .....</b>	<b>33</b>
<b>XI.</b>	<b>Charging .....</b>	<b>37</b>
<b>XII.</b>	<b>Safety Case .....</b>	<b>38</b>
<b>XIII.</b>	<b>Certifications .....</b>	<b>39</b>



# INTRODUCTION

3D Locators water detector products are now officially manufactured in India on a process of outsourcing band as per regulatory manufacturing act The Factories Act, 1948 (Act No. 63 of 1948), as amended by the Factories (Amendment) Act, 1987 (Act 20 of 1987), serves to assist in formulating national policies in India with respect to occupational safety and health in factories and docks in India.

We have our software support and research and development centers at Italy and Malaysia, we have global supports with many manufacturing companies where we select the best quality material and the best software platform for our IOT products. 3D Locators is a recognized firm for its Grade- A manufacturing in geophysical and engineering equipments to fulfill the requirements of Geoscientist, groundwater prospection experts, Geologists and civil engineers in measuring of underground structure and for detection of groundwater from the surface by optimizing technologies like Radar survey, geomagnetic survey, geo-frequency survey, electrical resistivity survey, Long range survey, induced polarization survey, electro seismic survey, seismic hammering survey, very low frequency survey, ground penetrating Radar survey and induced polarization survey.

To avoid the loss and to support the agriculture globally 3D Locators started its R&D since 2006 manufacturing equipments for prospection of groundwater and various case studies were conducted globally across South Africa, Nigeria, India, and some of the middle east countries to study the geological structures and came up with its equipments to pinpoint groundwater yielding zones.



# LPS-1200

LPS-1200 professionally engineered advanced Long range locator is designed on a Magneto Impedance (MI) technology to define site magnetic impedance difference in prospection of a fault zone, the system is systematically crafted to continuously measure the differences in the site from receiving



**3D LOCATORS**  
Professional groundwater Locators & Detectors  
[www.3dlocators.com](http://www.3dlocators.com)

**LPS-1200**  
LONG RANGE POSITIONING SYSTEM





## **LPS - 1200 TECHNOLOGIES**

**LONG RANGE POSITIONNING SYSTEM - LPS - 1200 professionally engineered advanced Long range locator is designed on a Magneto Impedance (MI) technology to define site magnetic impedance difference in prospection of a fault zone, the system is systematically crafted to continuously measure the differences in the site from receiving command to prepare the digital data which is further track recorded to pinpoint a particular location for selection of a well site.**

**LPS - 1200 is the first scientific system which provides real time magneto impedance difference data collected from the field via Host with our special software's for data collection, input operations and report generation.**

**LPS - 1200 software is setup with frequency tuning system for short range and long range detection where low frequency performs long range investigations and high frequencies detect the short range investigations.**

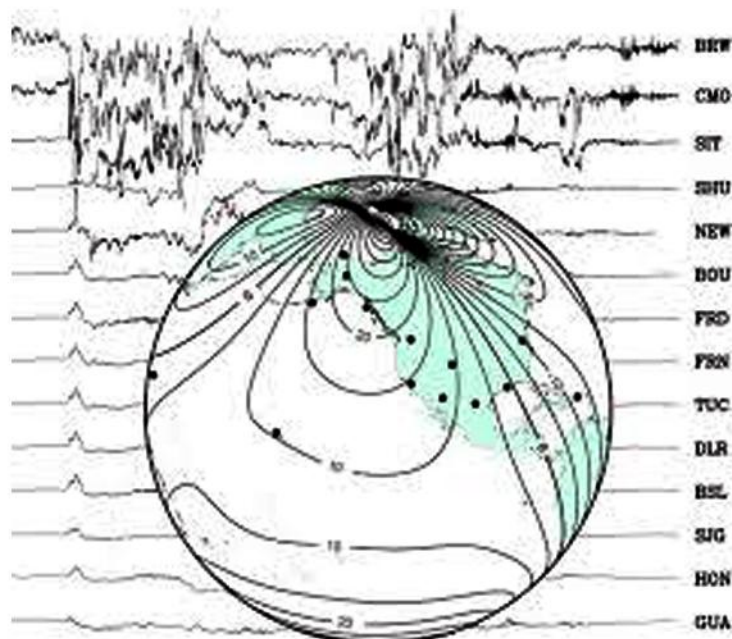
**LPS - 1200 is set up with the gain amplification system to increase or decrease the amplification depending upon the magnetic variations of a specific site and depending upon the countries geomagnetic field differences.**



**LPS - 1200 depth calculation setup works on inbuilt difference calculation system programmed referring various geological case studies conducted on different geological strata's.**

**Reporting- as per the field measurements manual input the depth variations are calculated and maximum 3 sources are estimated in the report, the reporting also combines the GPS coordinate of the specific location reported. Options are given to directly e-mail the report to the client and also has reports folder to save the data's.**

**3D Locators LPS - 1200 is updated based upon various case studies conducted in different parts of the world on varied geological conditions, the gain amplification setting is a part of case study influences which gives the best data to determine the field differences. The uniqueness in LPS - 1200 is the scientific field data which directly influences the prospection to ease the location target and also gives the real time differences to decide if the fault zone is confirmed.**





## LPS - 1200

Receiver Antenna

Transmitter Antenna

Frequency Tuner

Charging Port

Power On / Off

Indication

Holder





## SYSTEM SPECIFICATION

Technology	Magneto Impedance (MI)
Front Range	Minimum 100 M- Maximum 2000 M
Depth Range	Minimum 100 M- Maximum 500 M
Battery	Li - ion Rechargeable
Transmitting Antennas	Long Range Wireless Coverage, <b>Antenna</b> is a heavy-duty, weather proof <b>antenna</b> for extending the range of your 802.11a/b/g/n/ac
Receiving Antennas	SMA-Female Band: UHF Frequency: 400/470 MHz Input Impedance: 50 ohm
System holder	Gyroscopic system holder with nonconductive material for noise reduction
charger	5 V 1 A DC charger
Display unit	IPS display
Indication	Buzzer
Charge indication	LED
Wireless communication	Bluetooth
Frequency range selector	POT
Reporting	Digital
Report sharing	E-mail
Gain selection	1X – 10X
Location and depth Axis	0-3000
SI unit	Nano Tesla
Input	Manual
Coordinating system	GPS





# SENSOR SPECIFICATION

## Performance

Field Range	Full scale (FS) – total applied field (Typical)	-8		+8	gauss
Mag Dynamic Range	3-bit gain control	±1		±8	gauss
Resolution	VDD=3.0V, GN=2		5		milli-gauss
Linearity	±2.0 gauss input range			0.1	±% FS
Hysteresis	±2.0 gauss input range		±25		ppm
Cross-Axis Sensitivity	Test Conditions: Cross field = 0.5 gauss, Happlied = ±3 gauss		±0.2%		%FS/gauss
Output Rate (ODR)	Continuous Measurement Mode Single Measurement Mode	0.75		75 160	Hz Hz
Measurement Period	From receiving command to data ready		6		msec
Turn-on Time	Ready for I2C commands		200		µs
Gain Tolerance	All gain/dynamic range settings		±5		%
I <sup>2</sup> C Address	7-bit address 8-bit read address 8-bit write address		0x1E 0x3D 0x3C		hex hex hex
I <sup>2</sup> C Rate	Controlled by I <sup>2</sup> C Master			400	kHz
I <sup>2</sup> C Hysteresis	Hysteresis of Schmitt trigger inputs on SCL and SDA - Fall (VDDIO=1.8V) Rise (VDDIO=1.8V)		0.2*VDDIO 0.8*VDDIO		Volts Volts
Self Test	X & Y Axes Z Axis		±1.16 ±1.08		gauss
	X & Y Axes (GN=100) Z Axis (GN=100)		510		LSb



## LONG RANGE POSITIONING SYSTEM

- With built in processor
- Sensor modules
- Inbuilt rechargeable batteries and signal
- Receiving system



## TRANSRECEIVER ANTENNAS

- Long Range Wireless Coverage
- weather proof antenna for extending
- the range of your 802.11a/b/g/n/ac
- The Amplified signals are received
- via the receiver antenna



## VOICE ASSISTANCE

- Command and Instructions on Operation of Long Range Positioning System





## SYSTEM HOLDER

- System holder is designed with Nonconductive materials to avoid magnetic interference
- Inbuilt bearing drives the system



## CHARGER

Input Voltage (V) - 100 - 280 VAC •

Input Current (mA) 100 •

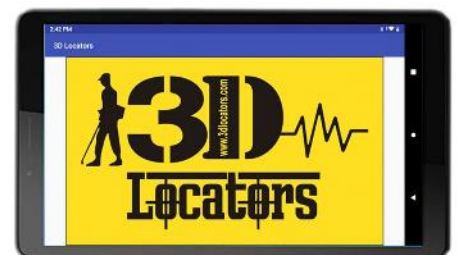
Output Power 5V 1A •

Load Regulation (%) +/-5 •



## TAB

- Tab Powered on Android Platform works as a Host to run the Software for LPS - 1200.





3D Locators  
www.3dlocators.com

# LPS - 1200

**APPLICATION - GROUNDWATER LOCATOR**

**DEPTH AXIS - 1200 M**

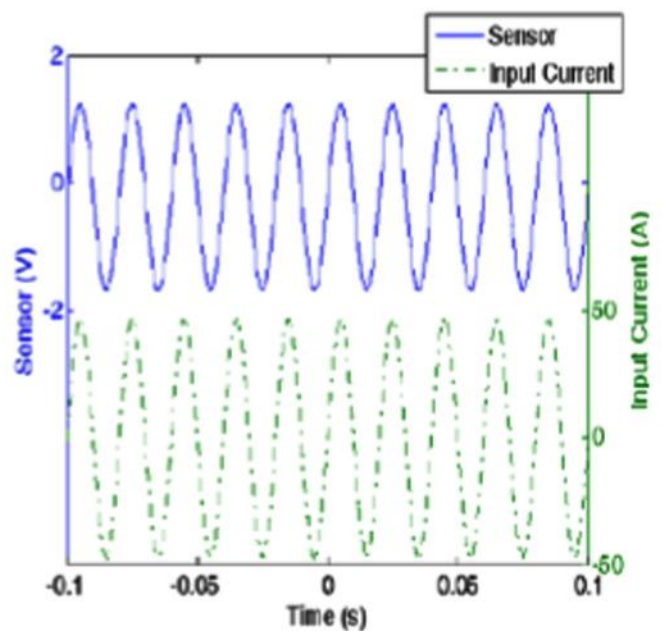
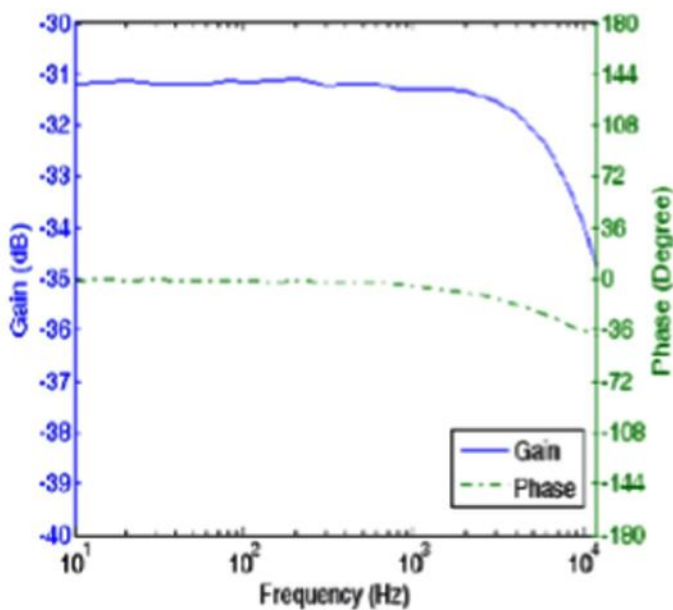
**FRONT AXIS - 2000 M**

**REPORTING - AUTO**

**TECHNOLOGY - MAGNETO IMPEDANCE**

**SI - 0 - 30000 G**

**BATTERY - RECHARGABLE**



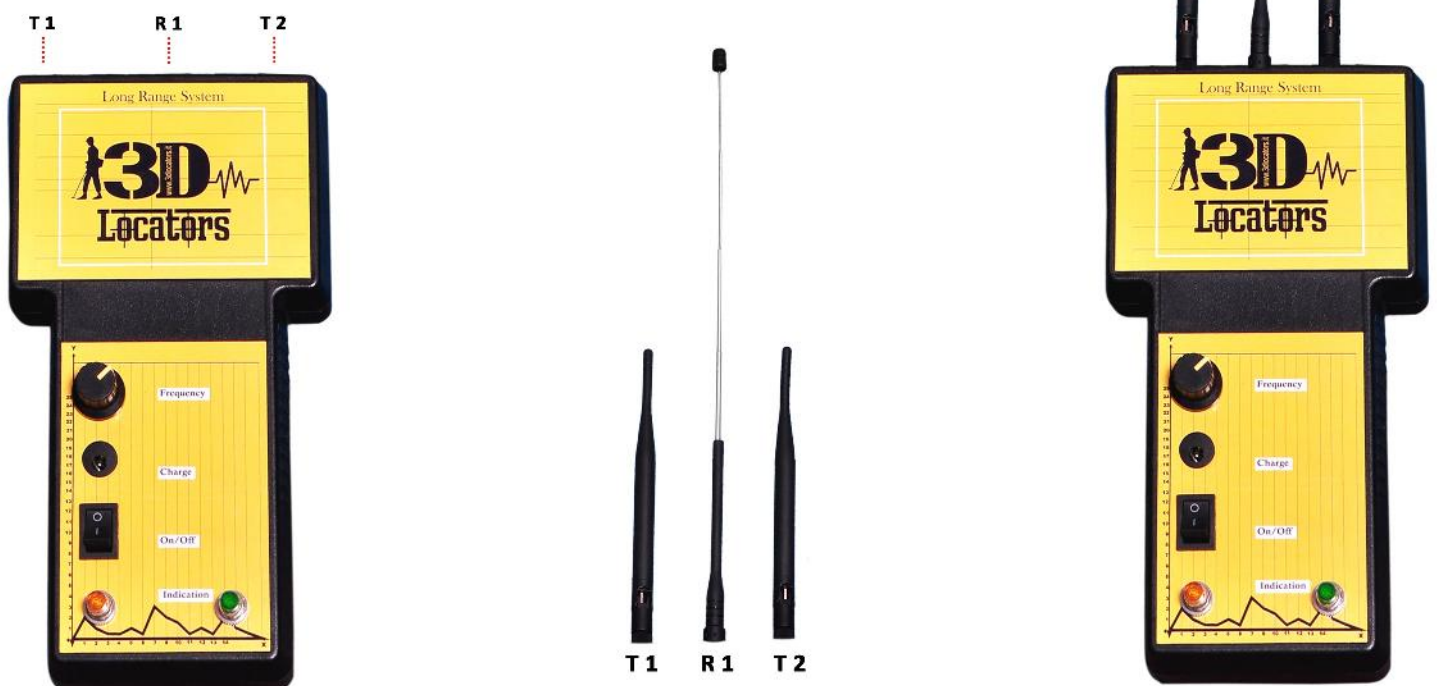


## WORKING METHODOLOGY

### Stage-1

As defined telescopic antenna is the receiver antenna and the DBI antennas are the transmitting antennas, connect the transmitter antennas and receiver antennas to the long range system as shown in the figure.

Ensure the antennas are fit properly to avoid signal loss.





## Stage-2

**Connect the system holder to the base of the long-range system, by rotating the thread attaching the base connector, and ensure the system holder is properly fit for the gyroscopic positioning.**





### Stage-3

Turn on the LPS - 1200 system and the Tab to build a connection for data transfer,

Once the long range system is turned to ON position the beep tone indicates the system is ON and waiting for Tab receiver.

Connect Earphone to your Tablet for Voice Assistance.





## Stage-4

In the Tab home page select the long range survey, where the system prompts to the next step of range selection and Tab communication.

Enter the Password **1234**

2:44 PM  
3D Locators

Enter Password to Login

Enter Login Password

1	2 ABC	3 DEF
4 GHI	5 JKL	6 MNO
7 PQRS	8 TUV	9 WXYZ
⌫	0	▶

2:45 PM  
3D Locators

Internet Connected Battery: 54%

LONG RANGE SURVEY REPORTS SETTINGS

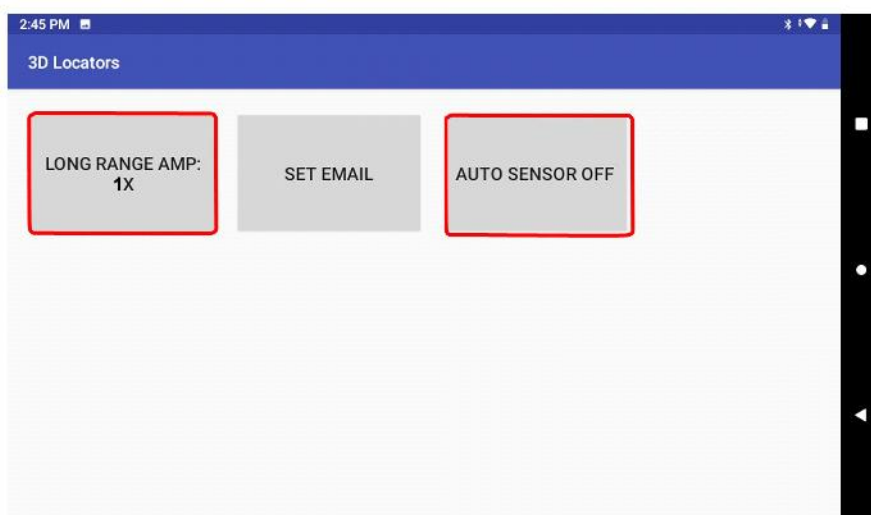




## SYSTEM AMPLIFICATION

**Amplifiers produce gain while filters alter the amplitude and/or phase characteristics of an electrical signal with respect to its frequency. As these amplifiers and filters use resistors, inductors, or capacitor networks (RLC) within their design, there is an important relationship between the use of these reactive components and the circuits frequency response characteristics.**

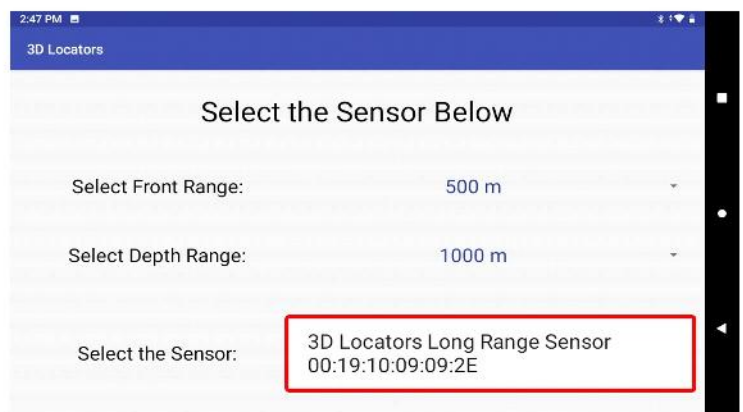
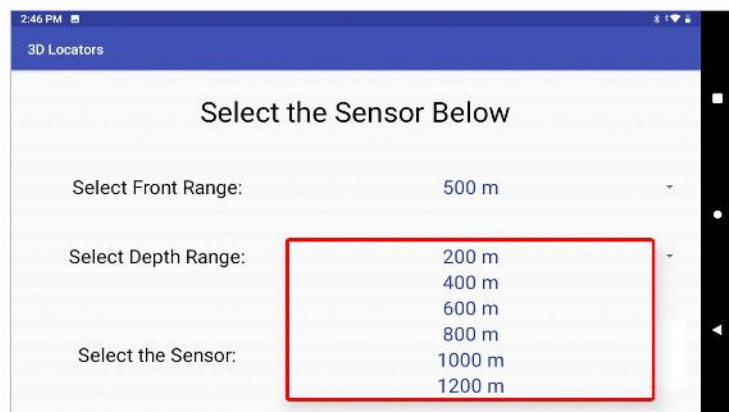
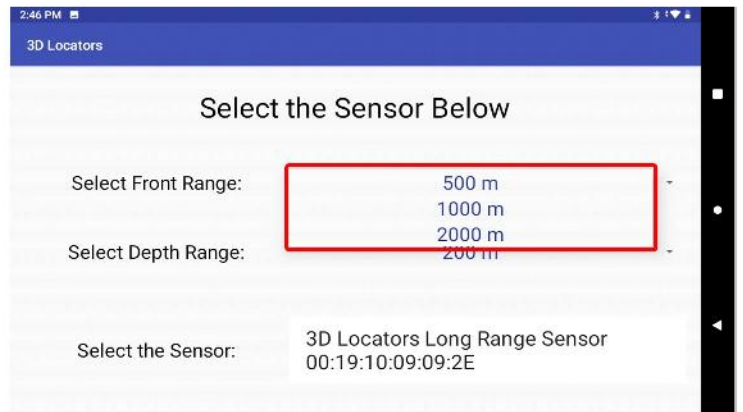
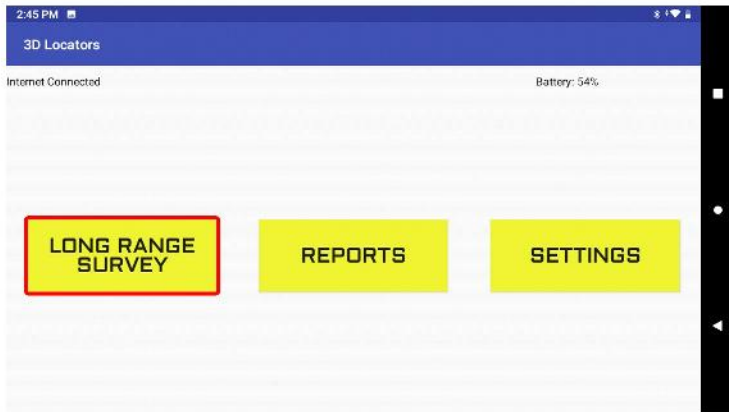
**In order to understand the concept of amplification, we would consider a system known as Amplifier. The most fundamental duty of an Amplifier is to amplify the signal strength i.e increase its amplitude. Depending on the characteristics, on which the amplifier is designed, it may or may not change the phase of the signal ( i.e. the signal may or may not get delayed at the output). Amplifier does not change the frequency of the input signal but the amplification may be affected by frequency of the input signal applied to the system.**





## Stage-5

Select the appropriate Front Range and depth range depending upon the areas topography and geological conditions, once after selection click on the communication address shown in the Tab to build a connection in between the Tab and long-range system.

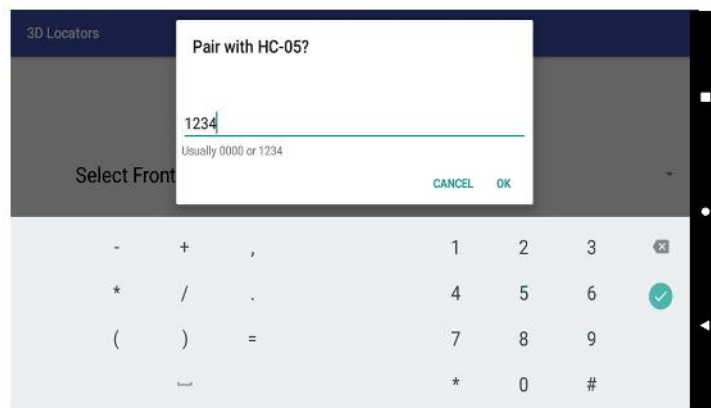




## Stage-6

Once the system is connected and both host and long-range system is paired we start receiving the live data on the screen indicated as a graphical dial and also shows the frequency at the left bottom of the tablet screen.

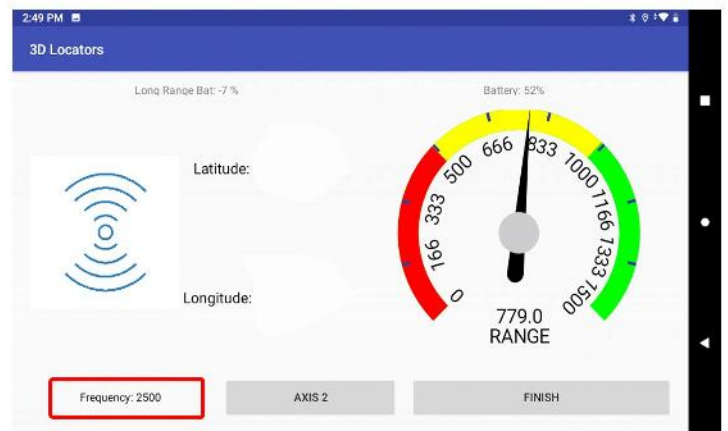
When newly started, system may sometimes ask for authentication and the password is **1234**





## Stage-7

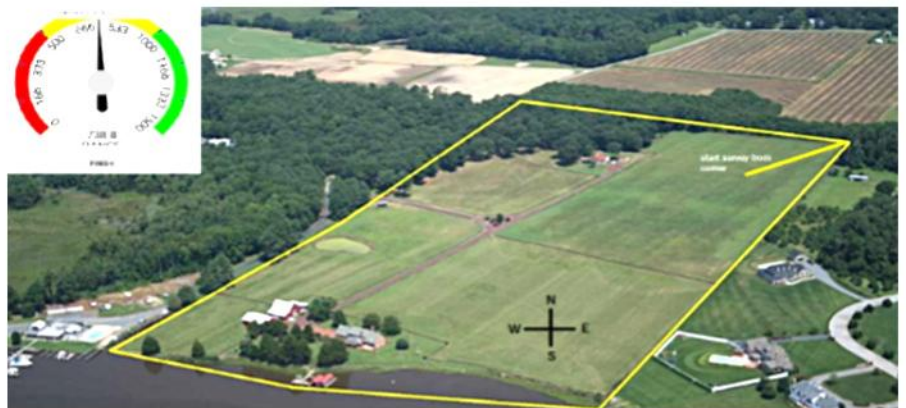
**Adjust the frequency to the low frequency signals and follow the readings shown on the display according to the movement of the long-range system.**





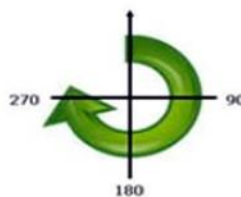
## Stage-8

Start from any one corner of the property depending on the topography of the land and physically hold the long-range system and rotate in clock wise or anti clock wise until we get the highest data on the display dial as shown in the fig. The highest data indicates we are on the highest magnetic axis to start the survey.



Clockwise

Counterclockwise

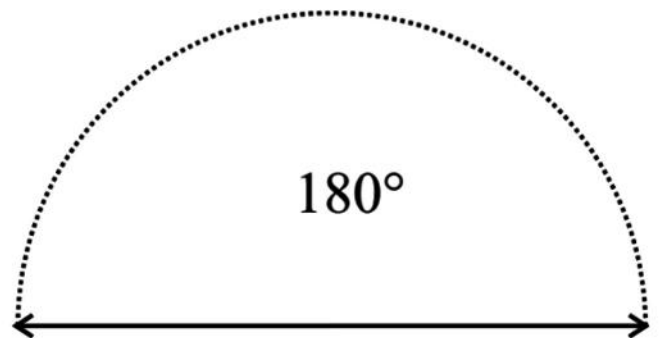
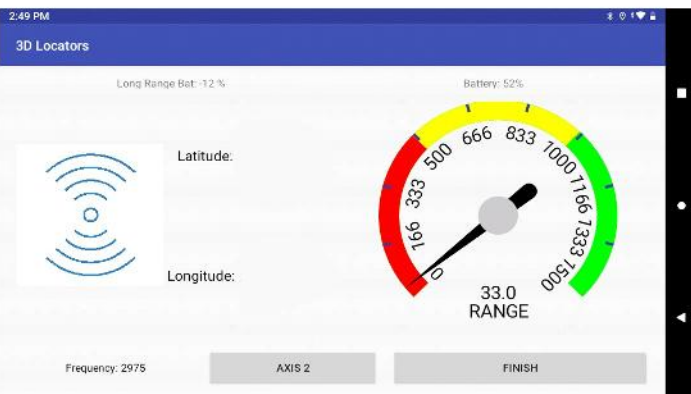
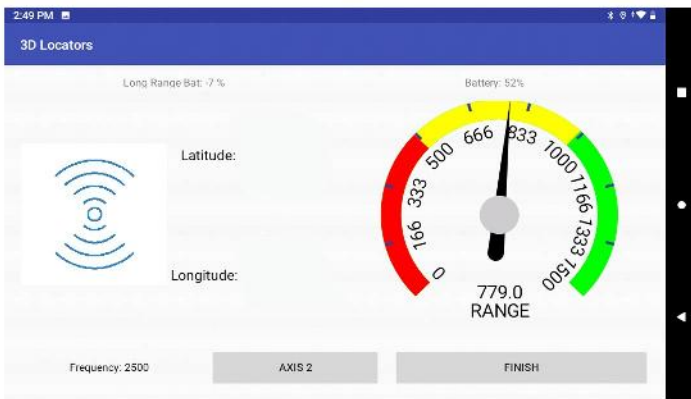




## Stage-9

From the highest axis start the survey and follow the direction as shown how ever prompted by the long-range system and continue the survey until the long-range system swivels  $180^\circ$  which indicates that we are crossing the target.

When the system swivels  $180^\circ$  we can see the fall in magnetic data which indicates the difference in variations

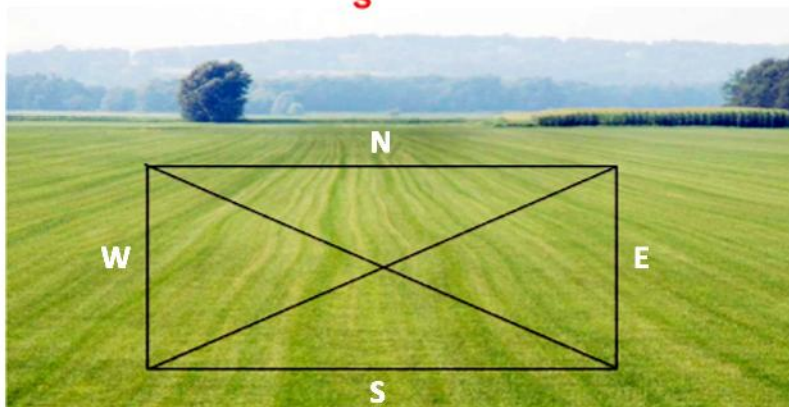
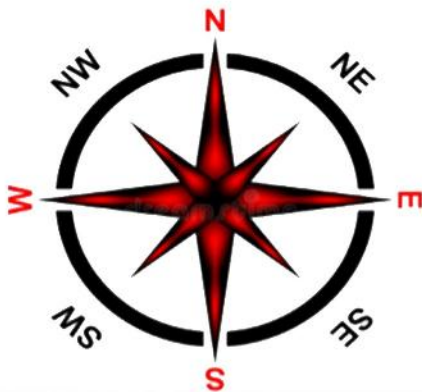




## Stage-10

Mark the target and conform the directional fluctuation at a distance of maximum 5 meters by checking the system pointing direction from four sides of the target.

After ensuring the number of directions pointed towards the target by the long range positioning system, increase the frequency to a medium or higher frequency to check the short range and in fold the telescopic antenna to check the pin point target.



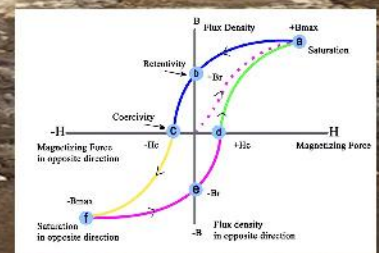
  
Increase / Decrease  
Frequency





## Stage-11

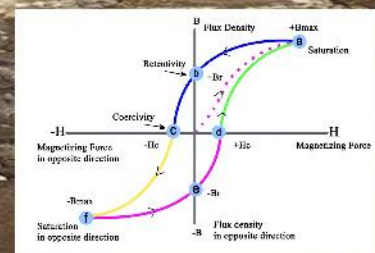
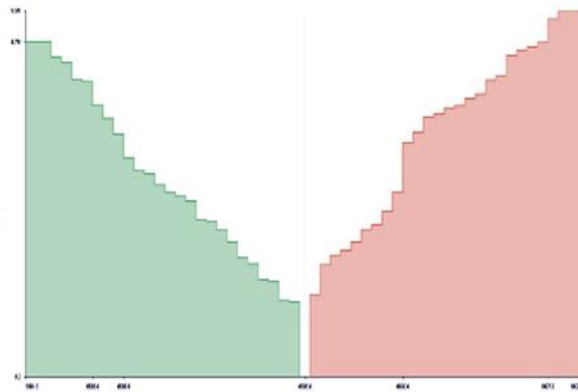
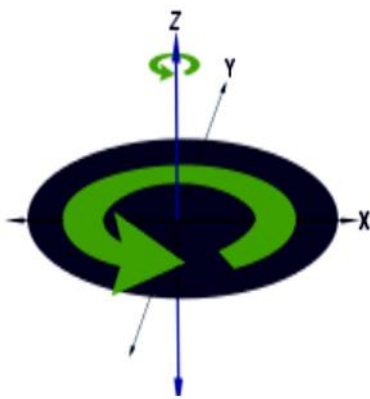
From the highest axis start moving towards the target to which ensures the rotation in clock wise or anti clock wise to conform we are on the target, and we can also see the fluctuations from highest to the least reading during the rotation on the target.





## Stage-12

The rotation of the system confirms that we have pointed a fault zone, mark the confirmed target and next step is to conduct a depth survey to calculate the depth from the surface to the subsurface fault.

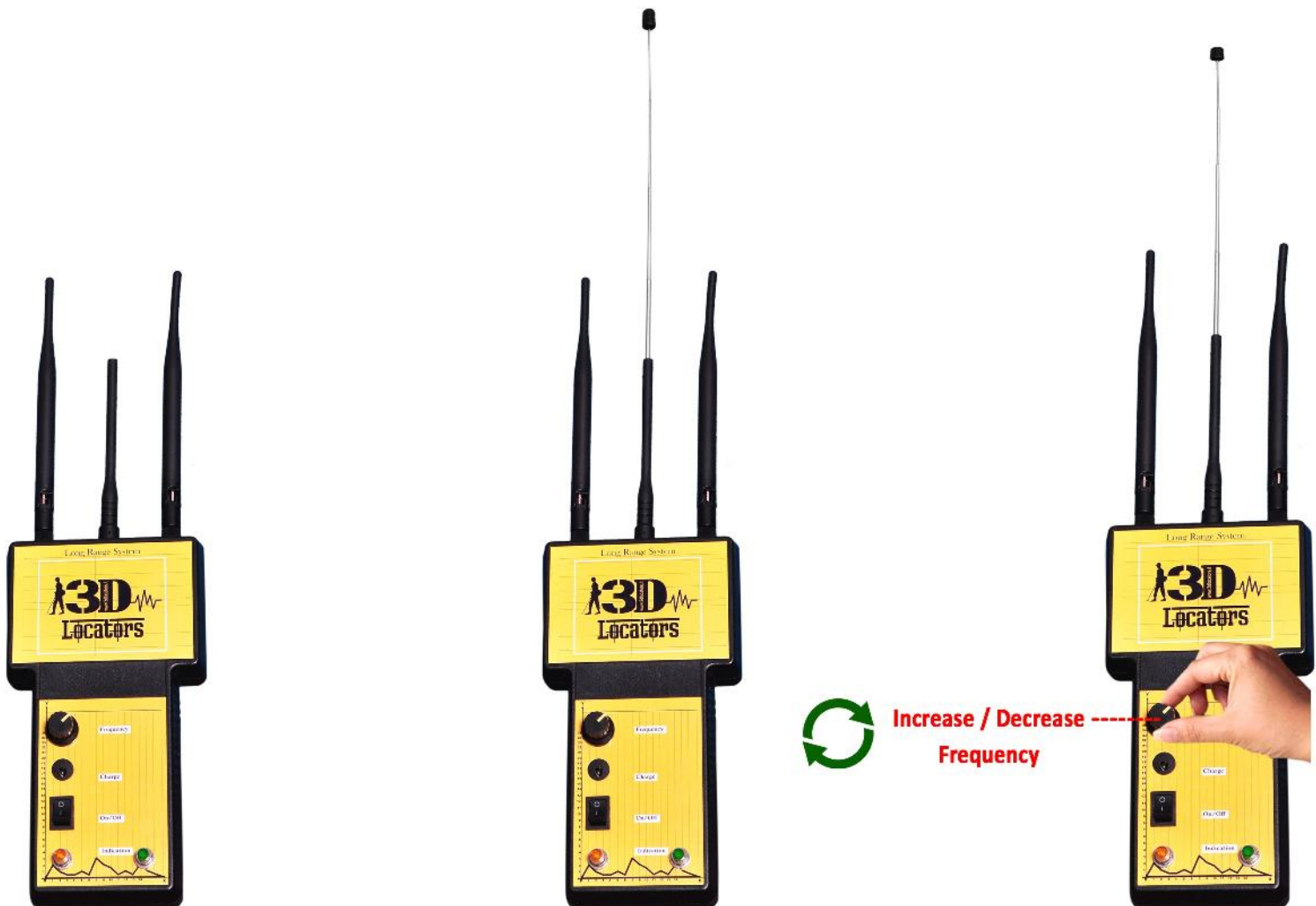




## Stage-13

**Extend the receiver antenna and decrease the frequency to low frequency to conduct the depth survey.**

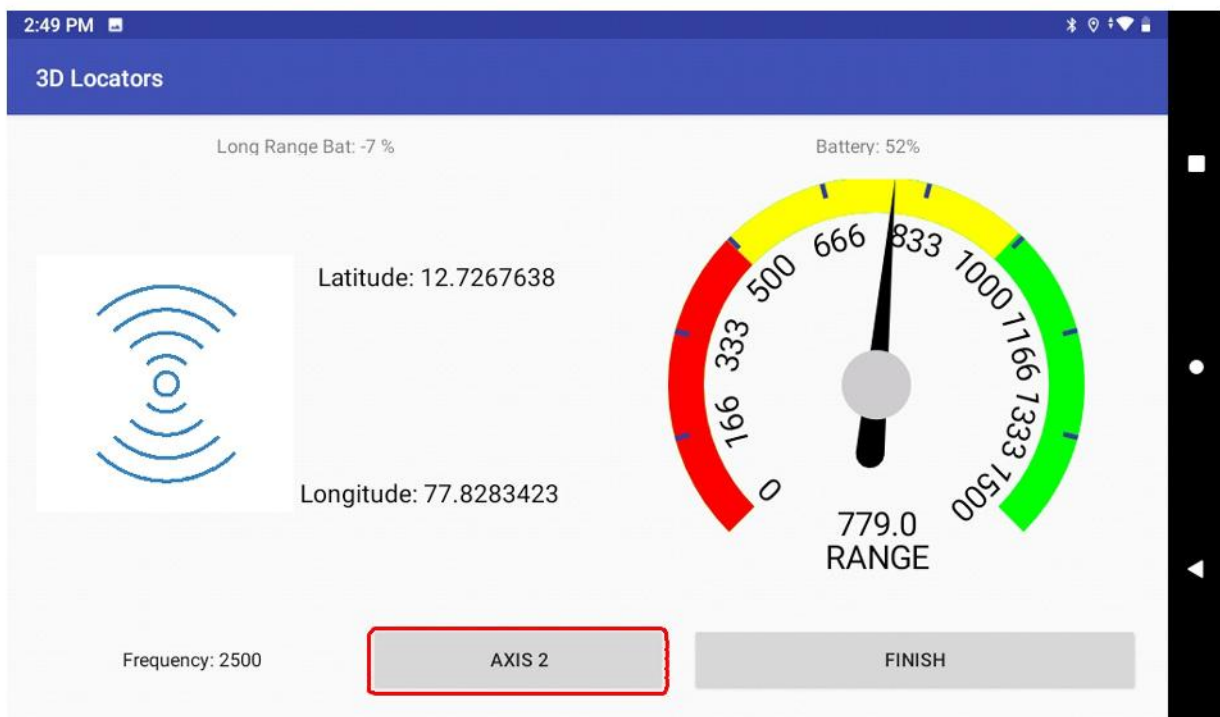
**We need to follow the data on the depth axis screen which is the y axis for the location axis.**





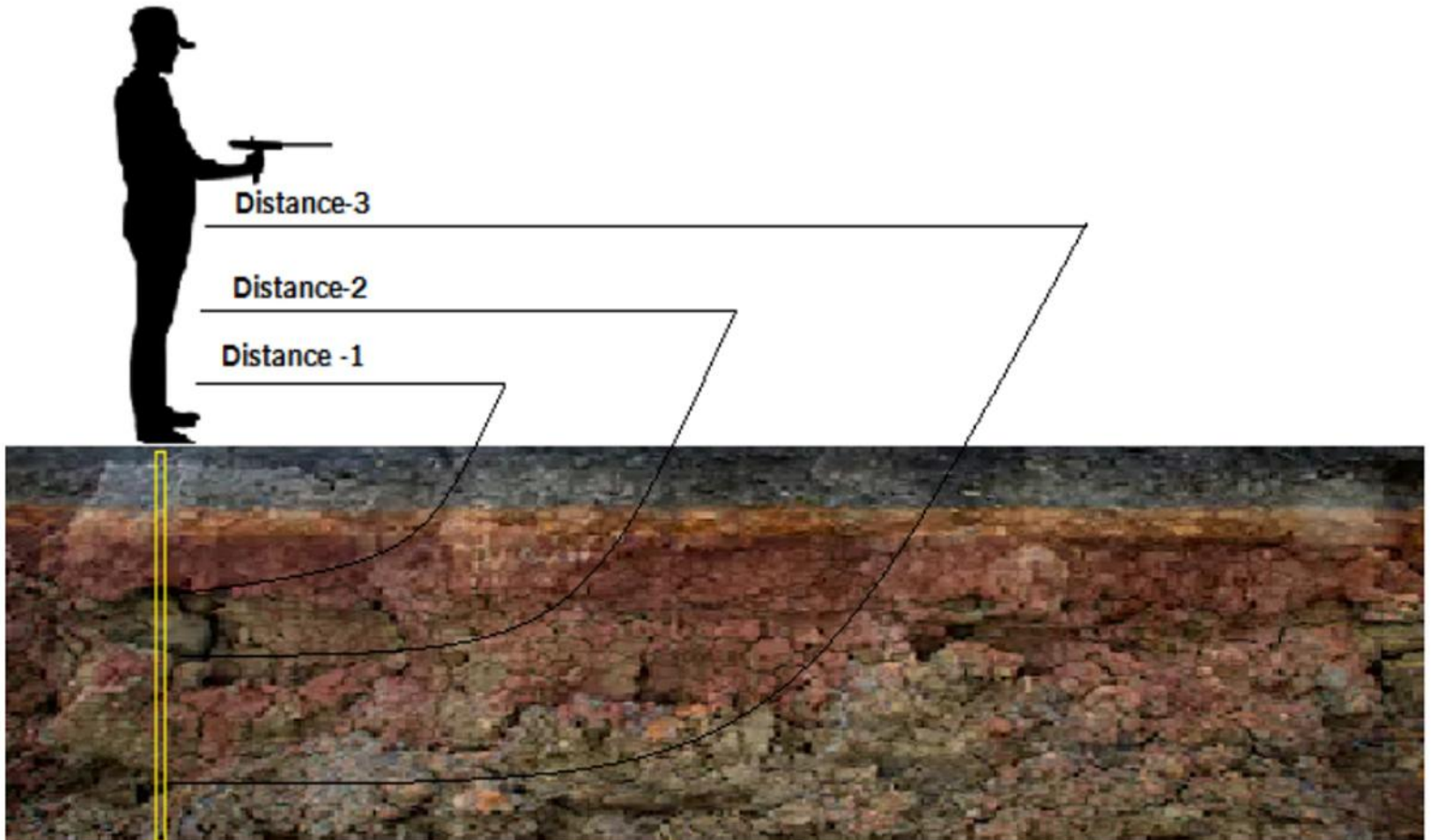
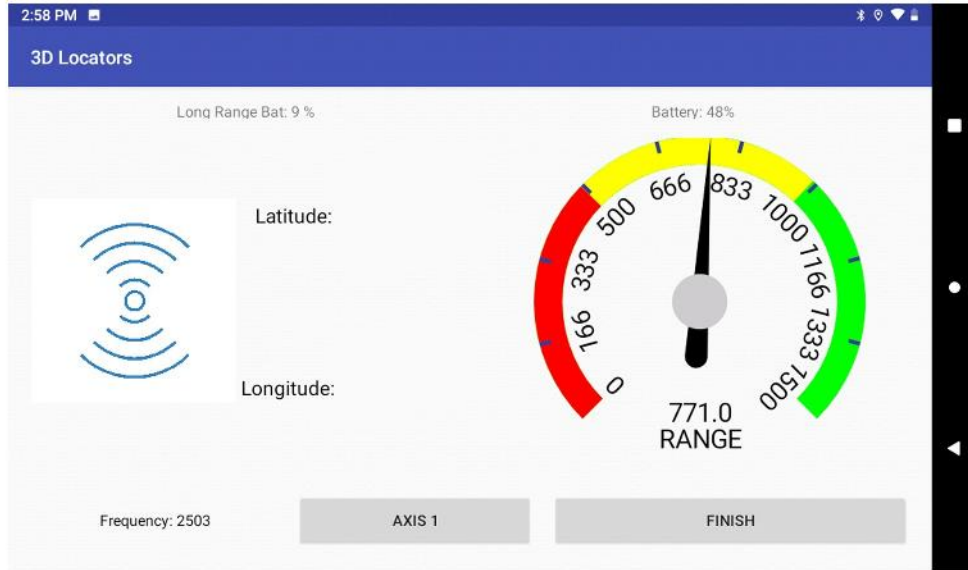
## Stage-14 - DEPTH AXIS CLICK AXIS 2

From the located target follow the highest axis to ensure we get 180° swivel in the long range system which shows there is a magnetic difference on the y axis of the location, mark the specific location where we get the difference and continue the survey on the same axis to check for the second and third difference area.



# 3D Locators

www.3dlocators.com



## Stage-15

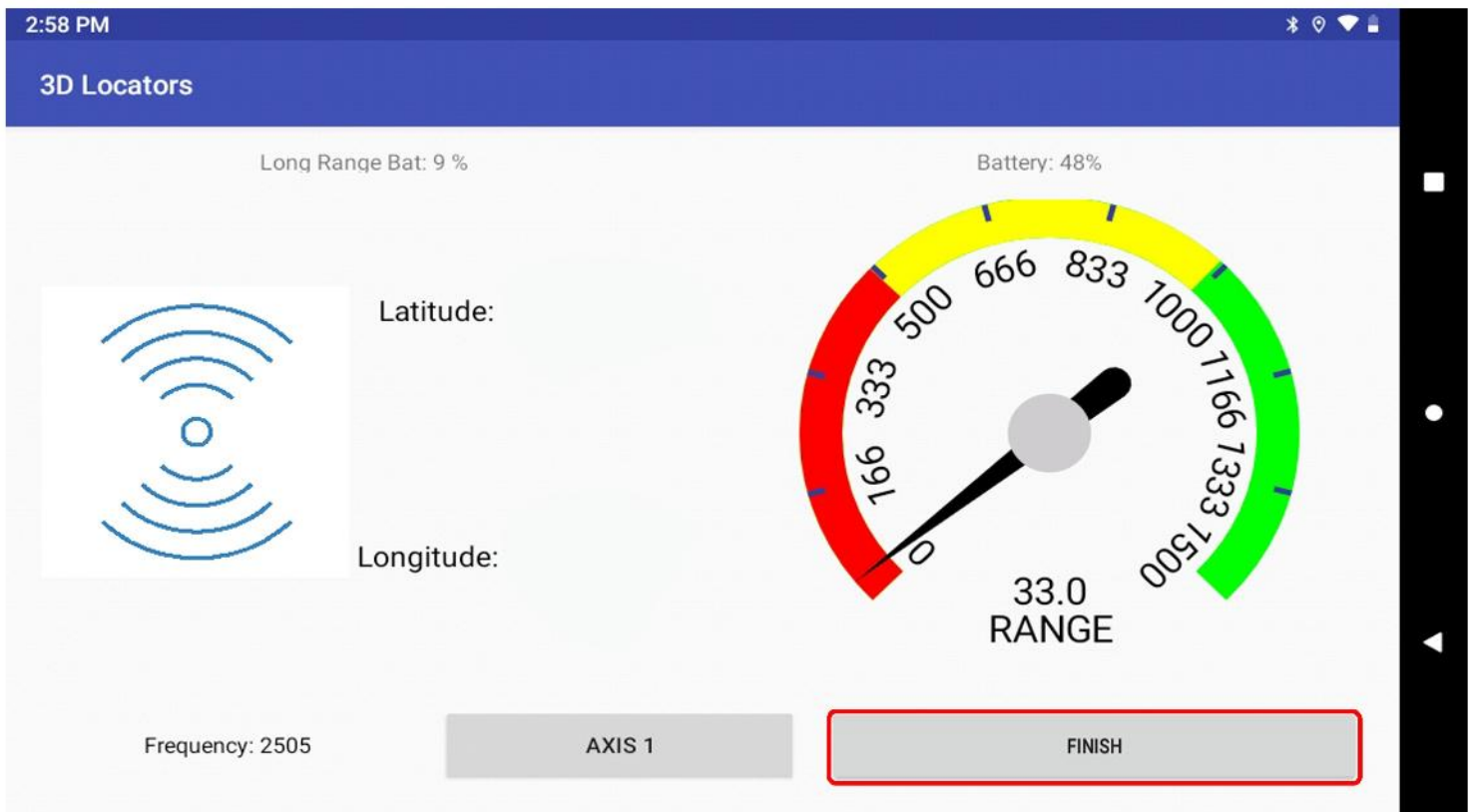
**Measure the distance from the target to the differed zone on the depth axis followed by distance to the first difference, second and third, measure the distance in meters.**





## Stage-16

**Make a Note of the Measurements taken and Finish the Survey for further verification by the next Cross Checking Method.**





# REPORT PARAMETERS

Enter the surveyor name & customer name, location

Enter the Distance 1, Distance 2 and Distance 3 collected via the long range positioning system.

Click generate report which further calculates the depth and Geo co - ordinates for the location of survey.

3:01 PM

3D Locators

Survey Location Name:

Customer Name:

Surveyor Name:

Latitude:  Longitude:

Distance 1:

Distance 2:

Distance 3:

**GENERATE REPORT**

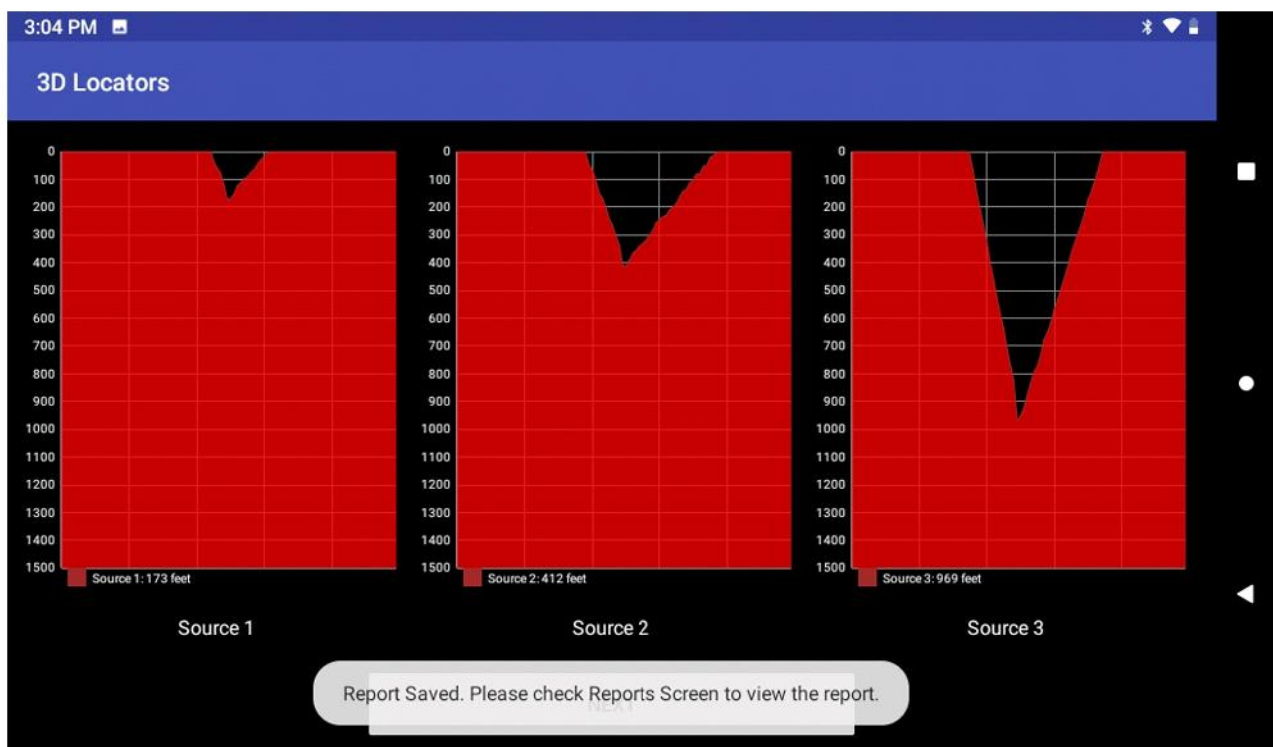


## REPORT ANALYSIS

Source1 : Refers to the Depth from surface to the First Fault Zone

Source 2 : Refers to the Depth from surface to the Second Fault Zone

Source 3 : Refers to the Depth from surface to the Third Fault Zone



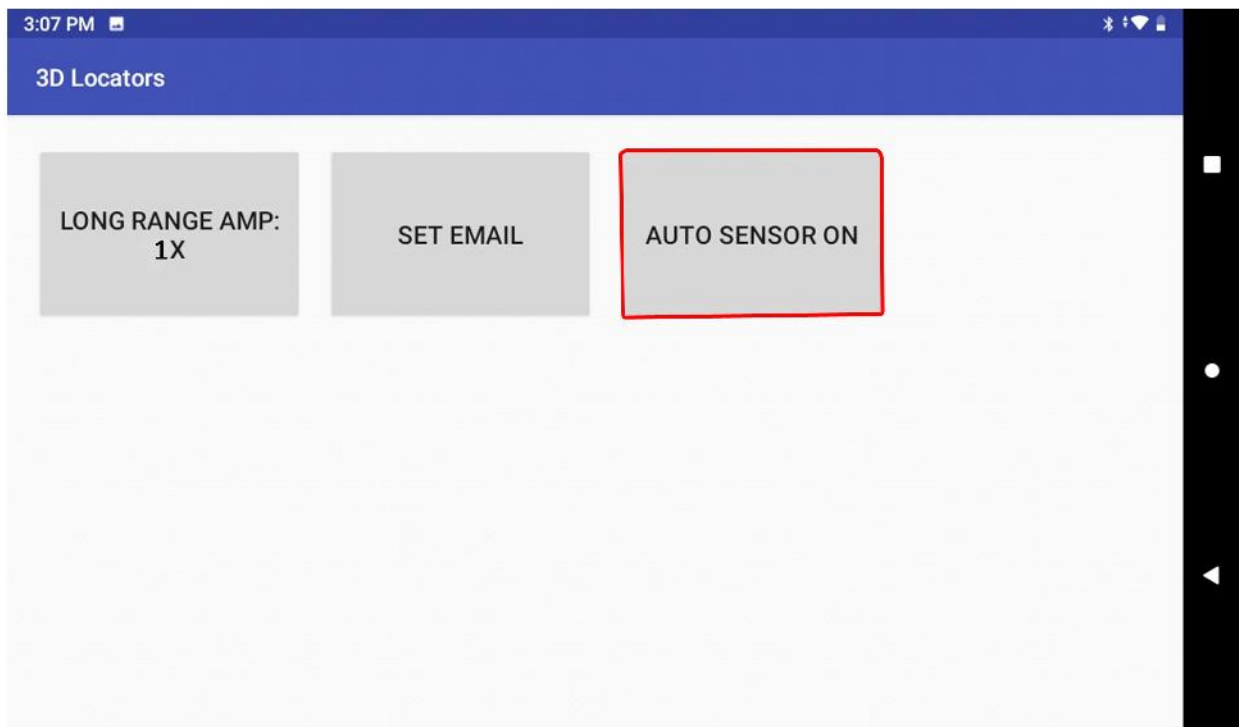




## AUTO LOCATING

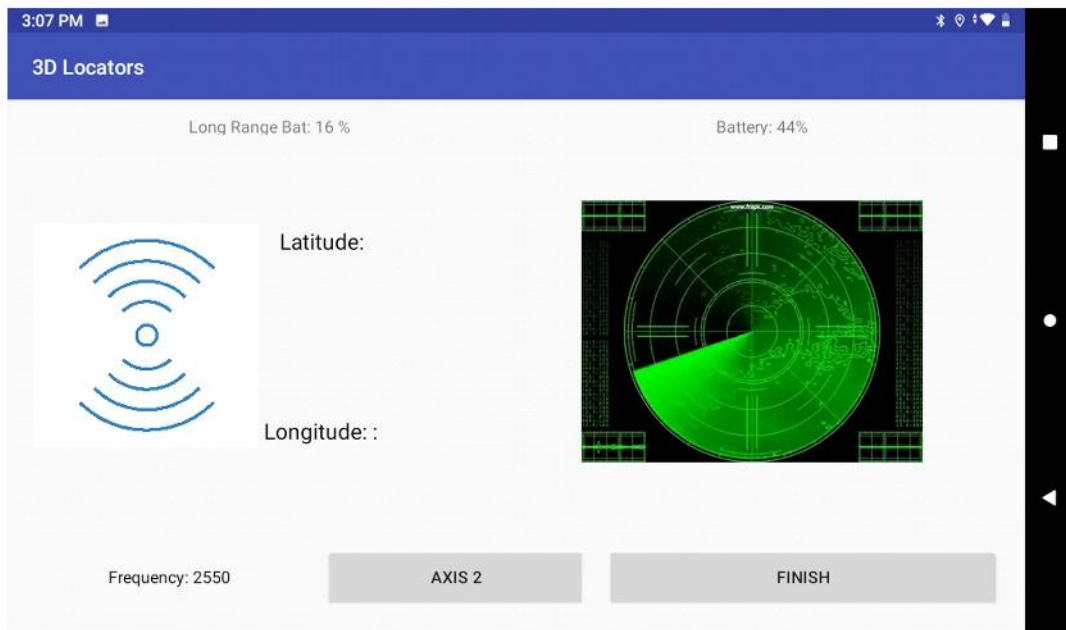
Auto locating helps in non dimensional areas where the land structure does not suit the axis data.

Enable AUTO SENSOR ON in the settings menu  
Start the long range operations and start the survey facing North from the starting point and continue the survey in the same procedure without data reference.

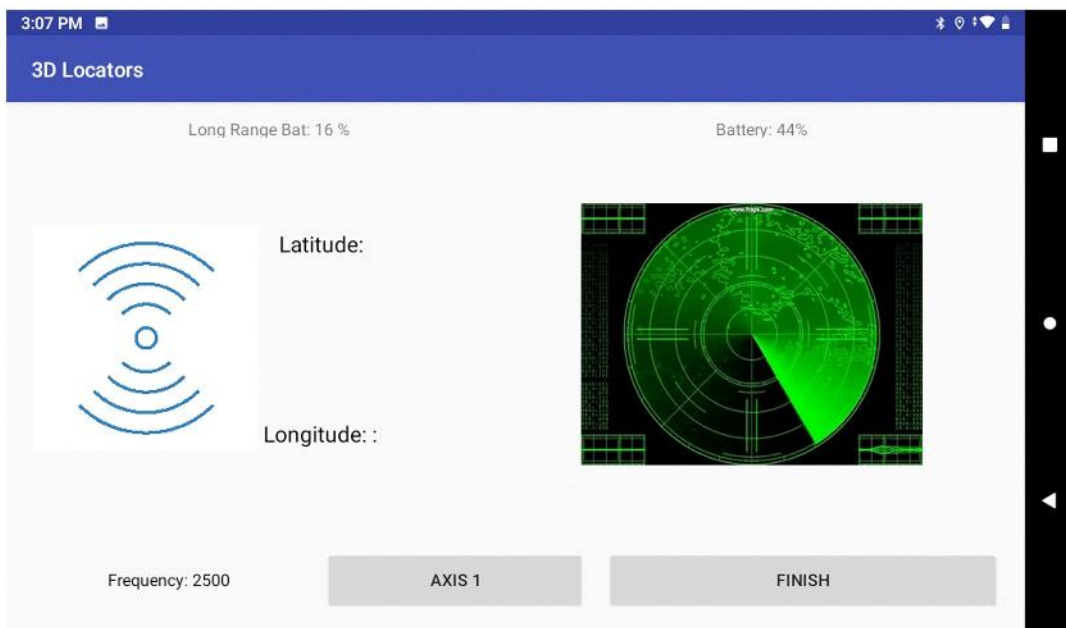




# AUTO LOCATING



# Depth Axis





# INTERNET CONNECTION

Hotspot setting for internet connection to the host system.

Note :

Ensure that you have a valid internet pack in your mobile phone to access internet.

Step 1 Turn ON Mobile Data (INTERNET ON)

Step 2 Click settings

Step 3 Settings -> wireless connection

Step 4 Personal hotspot

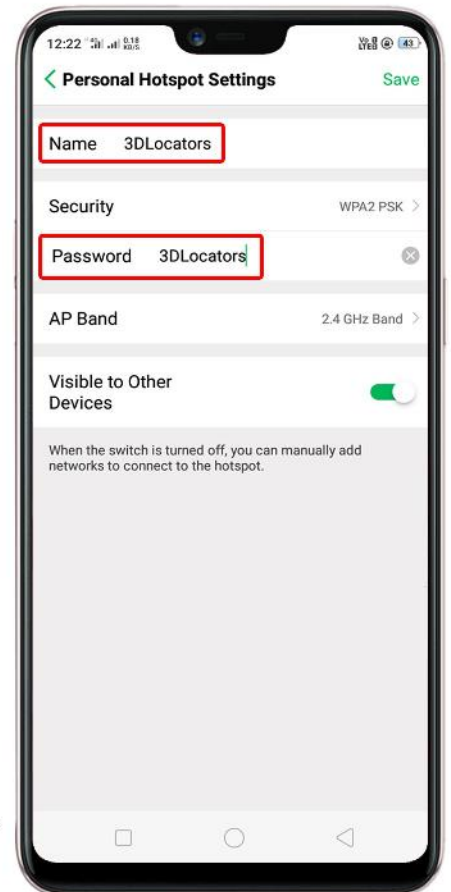
Step 5 Personal hotspot settings

Step 6 Change the username & Password to

**Username : 3DLocators**

**Password : 3DLocators**

(make sure letter **D** and **L** are capital letters), save.



Now turn on personal hotspot which can be recognized by the host system and internet gets connected from your mobile phone to the host.



# EMAIL SETTING

Open your personal email address or register a new email address and follow the steps to set email to send reports from the host system.

## Step-1

Sign in to your Gmail account on a desktop or a laptop computer, Click on the Gmail account Icon which takes to the next step **MANAGE YOUR GOOGLE ACCOUNT**



3dlocators

3dlocators@gmail.com

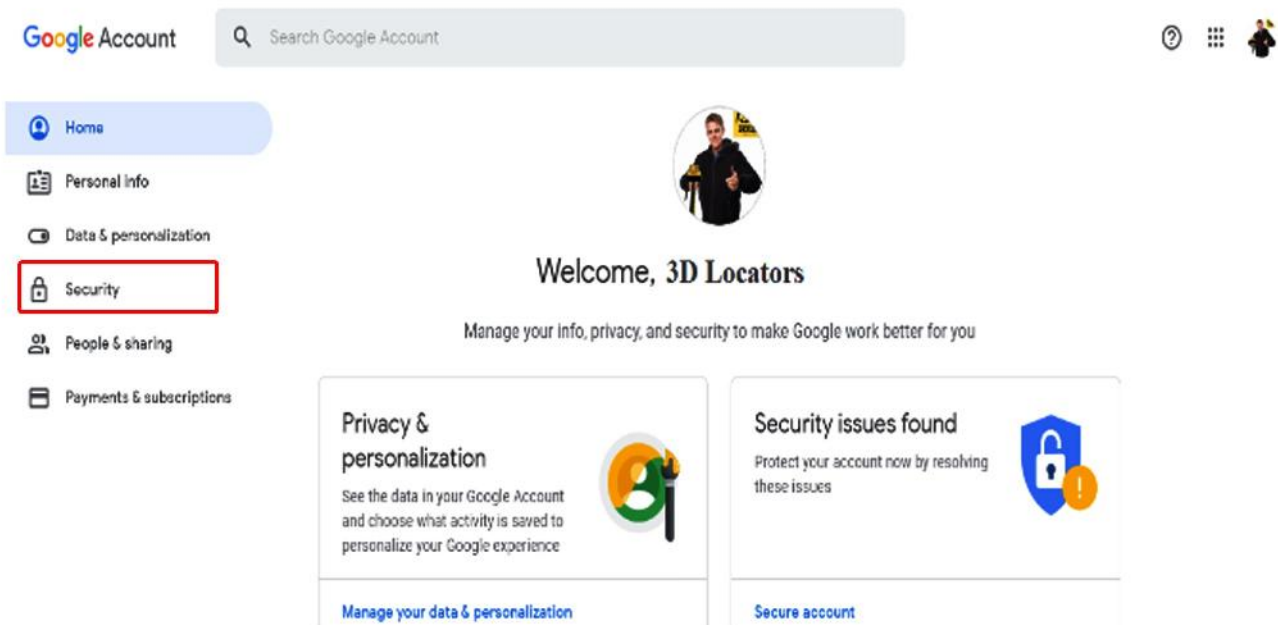
Manage your Google Account

Click on manage your google accounts which takes to the next step to the my google account page for further settings.



# EMAIL SETTING

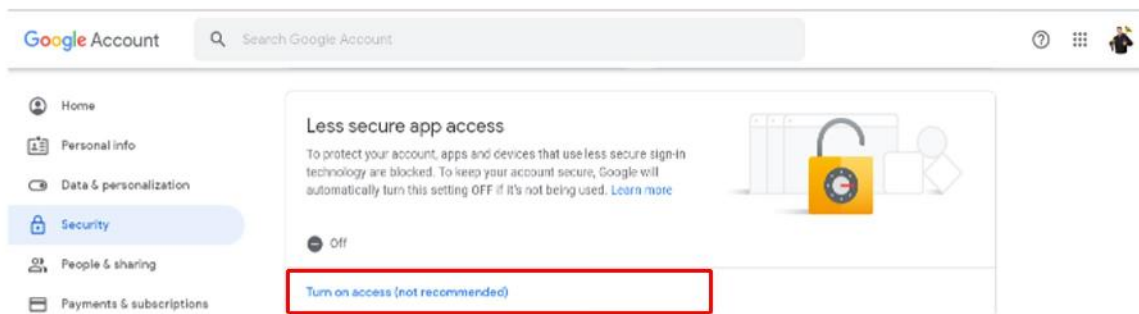
Click Security which takes to the next step to personalize the security settings. In security drag down to find the Less secure app access as shown in the fig.



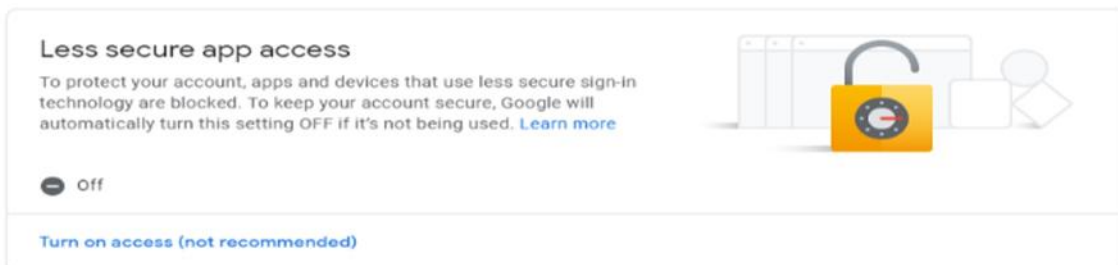


# EMAIL SETTING

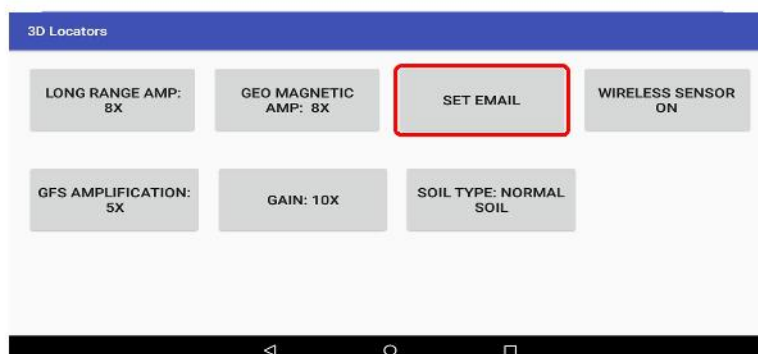
**Turn On** less Secure app which permits to send mail via third party applications.



Turn On less Secure app which permits to send mail via third party applications.



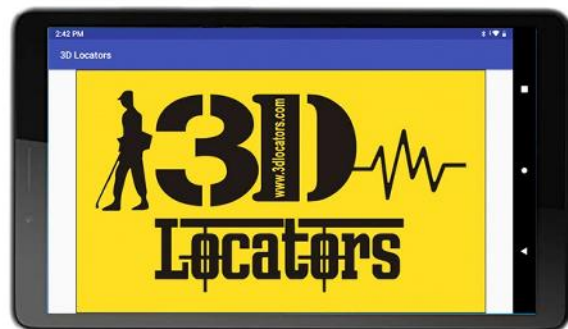
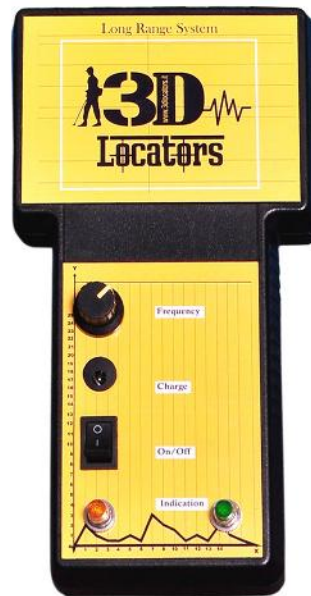
Your job is done on the computer, Now setup the same email address and password for which you have turned on the less secure app in the email setting menu in your host system. Your system is ready to share reports from the host system to any email account.





# CHARGING

**Do not Turn ON** the Equipment during charging.





## SAFETY CASE

For portability 3DLocators had designed the Safety Case with individual slots to handle the Instruments in the preferred slots.







## CERTIFICATION



When manufacturing any type of product, overall quality and customer satisfaction are extremely important. This is especially critical for complex products like Geophysical systems. Quality assurance can be further complicated when components and assemblies for the end product are manufactured at different plants around the world. ISO, or the International Organization for Standardization, is a non-governmental body consisting of over 160 countries. They are responsible for developing standards for various industries which promote quality, safety, and efficiency. While no company is compelled to adhere to ISO standards, selecting a supplier who is ISO registered ensures that your supplier is managing their business to consistent standards that drive waste and costs down and drive product and delivery quality up.



The Conformité Européenne (CE) Mark is defined as the European Union's (EU) mandatory conformity marking for regulating the goods sold within the European Economic Area (EEA) since 1985. The CE marking represents a manufacturer's declaration that products comply with the EU's New Approach Directives. These directives not only apply to products within the EU but also for products that are manufactured in or designed to be sold in the EEA. This makes the CE marking recognizable worldwide even to those unfamiliar with the EEA.

- Fulfills the requirements of relevant product directives
- Meets all the requirements of the relevant recognized harmonized performance and safety standards
- Is fit for its purpose and will not endanger lives or property



RoHS stands for Restriction of Hazardous Substances. RoHS, also known as Directive 2002/95/EC, originated in the European Union and restricts the use of specific hazardous materials found in electrical and electronic products (known as EEE). All applicable products in the EU market after **July 1, 2006** must pass RoHS compliance.

REACH is a general regulation and stands for **Registration, Evaluation, Authorization, Restriction of Chemicals**, and addresses the production and use of chemical substances and their potential impact on human health and the environment. REACH is monitored by the ECHA and deals with 197 Substances of Very High Concern (SVHC) currently. While RoHS restricts substances present in electrical/electronic equipment (wiring, components, circuit boards, displays, sub-assemblies, cabling), REACH controls all chemicals that might be used to manufacture the product, including enclosures, brackets, coatings, paints, solvents, and chemicals used during manufacture.

**3D Locators** is happy to announce that we are officially certified by the ISO, CE and ROHS by International Accreditation Forum by adhering the above requirements in quality and production of our products.

The **International Accreditation Forum, Inc. (IAF)** is the world association of Conformity Assessment Accreditation bodies and other bodies interested in conformity assessment in the fields of management systems, products, services, personnel and other similar programs of conformity assessment. Its primary function is to develop a single worldwide program of conformity assessment which reduces risk for business and its customers by assuring them that accredited certificates may be relied upon. IAF members accredit certification or registration bodies that issue certificates attesting that an organization's management, products or personnel comply with a specified standard. Accreditation is an essential ingredient for competitiveness, access to new markets, productivity improvement, innovation of new products and environmental protection, as well as the health and safety of populations. An efficient and effective quality and standards infrastructure, underpinned by accreditation, is key to a country's growth, as well as being essential in creating a safer, cleaner, and more equitable and well-integrated world. Accreditation provides confidence in the quality, safety, and environmental credentials of goods, services, and processes. It is required for the effective operation of domestic markets, and its international recognition is important to enable access to foreign markets. Accreditation is a critical element in promoting and sustaining economic development as well as environmental and social well-being, as it provides confidence in metrology, standardization, and conformity assessment (which comprises testing, calibration, inspection, and certification).



## Certificate of Registration

This is to certify that

### 3D LOCATORS

53, 1 STAGE, SRI VINAYAKA LAYOUT, MAGADI ROAD, NEAR TRAFFIC POLICE STATION, BANGALORE 560079, KARNATAKA, INDIA

has been independently assessed by QRO  
and is compliant with the requirement of:

**ISO 9001:2015**

### Quality Management System

For the following scope of activities:

**MANUFACTURER OF GROUNDWATER DETECTORS, FAULT LOCATORS AND DETECTORS, VLF SYSTEMS, LONG RANGE SYSTEMS, GEOMAGNETIC AND GEO-FREQUENCY SYSTEMS**

Date of Certification: 19th March 2020

2<sup>nd</sup> Surveillance Audit Due: 18th March 2022

1<sup>st</sup> Surveillance Audit Due: 18th March 2021

Certificate Expiry: 18th March 2023

**Certificate Number: 20200506002GS**



*Chaman ..*  
Head of Certification

Validity of this certificate is subject to annual surveillance audits to be done successfully on or before 365 days from date of the audit. (In case if surveillance audit is not allowed to be conducted, this certificate shall be suspended / withdrawn).

The Validity of this certificate can be verified at [www.qrocert.org](http://www.qrocert.org)

This certificate of registration remains the property of QRO Certification LLP, and shall be returned immediately upon request.

India Office : QRO Certification LLP

142, 1<sup>st</sup> Floor, Axtar Enclave, Near Paschim Vihar West Metro Station, Delhi-110063, (INDIA)

Website : [www.qrocert.org](http://www.qrocert.org), E-mail : [info@qrocert.org](mailto:info@qrocert.org)



## Certificate

We hereby declare that the technical file of product complied with the requirement of directives EU Directive 2009/114/EC on Frequency Bands

Certificate no. CE-DLS-20-092881

### Manufacture

Name : 3D LOCATORS  
 Address : #53, 1 STAGE, SRI VINAYAKA LAYOUT, MAGADI ROAD, NEAR TRAFFIC POLICE STATION BANGALORE - 560079, KARNATAKA, INDIA  
 Product : GROUNDWATER DETECTORS, FAULT LOCATORS AND DETECTORS, VLF SYSTEMS, LONG RANGE SYSTEMS, GEOMAGNETIC AND GEO-FREQUENCY SYSTEMS, DETECT GROUNDWATER POINT IT'S BASED ON EMBEDDED SYSTEMS, IOT, SIGNALS AND FREQUENCY

### Complies with the requirements applicable to it

The Certification body has performed an audit of the above product quality system covering the design, manufacture and final inspection of the certified product. The quality system has been assessed, approved and is subject to continuous surveillance according to the directives EU Directive 2009/114/EC on Frequency Bands

### This certificate is issued under the following conditions:

- It applies only to the quality system maintained in the manufacture of above referenced models and it does not substitute the design or type-examination procedures, if requested.
- The certificate remains valid until the manufacturing conditions or the quality systems are changed.
- The certificate validity is conditioned by positive results or surveillance audits.
- After fulfilling the relevant EU legislation, the manufacturer shall affix to each device, of the above referenced models.
- The CE mark as shown above can be used, under the responsibility of the manufacturer, after completion of an EC Declaration of conformity and compliance with all relevant EC Directives. The statement is based on a single evaluation of one sample of above mentioned product. It does not imply an assessment of the whole production.

Validity of this certificate can be verified at [www.gaafs.us](http://www.gaafs.us)

Date of Certification	18 <sup>TH</sup> March 2020
1 <sup>ST</sup> Surveillance Due	17 <sup>TH</sup> March 2021
2 <sup>ND</sup> Surveillance Due	17 <sup>TH</sup> March 2022
Certificate Expiry (Subject to the company maintaining its system To the required standard)	17 <sup>TH</sup> March 2023



Authorized Signatory

Validity of this Certificate is subject to annual Surveillance audits done successfully  
 This Certificate remains the Property of IMC Certification and must be returned if Certificate is Withdrawn  
 The Verification mail is : [info@imccertification.co.in](mailto:info@imccertification.co.in)  
 IMC Certifications is Accredited by Global Accreditation Assessment Forum Series (GAAFS)

شهادة ■ ZERTIFIKAT ■ CERTIFICATO ■ CERTIFICATE ■



# Certificate

RoHS Directive (2011/65/EU) of the European Parliament and of the Council on the restriction of use of certain Hazardous Substances in Electrical and Electronic Equipments

**Certificate No. ROHS-DLS-20-062880**

**Manufacturer**

**Name** : 3D LOCATORS  
**Address** : #53, 1 STAGE, SRI VINAYAKA LAYOUT, MAGADI ROAD, NEAR TRAFFIC POLICE STATION BANGALORE - 560079, KARNATAKA, INDIA  
**Product** : GROUNDWATER DETECTORS, FAULT LOCATORS AND DETECTORS, VLF SYSTEMS, LONG RANGE SYSTEMS, GEOMAGNETIC AND GEO-FREQUENCY SYSTEMS, DETECT GROUNDWATER POINT IT'S BASED ON EMBEDDED SYSTEMS, IOT, SIGNALS AND FREQUENCY

This is to state that the above mentioned products is in compliance with RoHS Directive (20/95/EC) of the European Parliament and Commission Decision 2005/618/EC on the restriction of use of certain Hazardous Substances (Lead (Pb), Mercury (Hg), Cadmium (Cd), Hexavalent Chromium (Cr6+), Polybrominated biphenyls (PBBs) and Polybrominated Diphenyl ethers (PBDEs)) in Electrical and Electronic Equipments.

**Statement:**

This certificate declares that the product type/model described above complies with the mentioned above European Standard(s).

**Remarks:**

This certificate of complies is based on the evaluation of a sample of the above mentioned products. It does not imply and assessment of the mass-production of the product. This certificate holder may use this certificate in connection with the test certification body should be informed (revision of technical file) for any modification or alterations made to the aforementioned product type(s), including design and manufacture and/or extension to the existing scope of application.

The certificate is valid for three years if the company applies the technical construction file which has been stored IMC office. This certificate includes declaration of manufacturer. Certificate remains property of IMC to whom it must be returned upon request. The certificate validity is conditioned by positive results or surveillance audits.

Validity of this certificate can be verified at [www.gaafs.us](http://www.gaafs.us)

Date of Certification	18 <sup>TH</sup> March 2020
1 <sup>st</sup> Surveillance Due	17 <sup>TH</sup> March 2021
2 <sup>nd</sup> Surveillance Due	17 <sup>TH</sup> March 2022
Certificate Expiry (Subject to the company maintaining its system To the required standard)	17 <sup>TH</sup> March 2023



Authorized Signatory

Validity of this Certificate is subject to annual Surveillance audits done successfully  
 This Certificate remains the Property of IMC Certification and must be returned if Certificate is Withdrawn  
 The Verification mail is : [info@imccertification.co.in](mailto:info@imccertification.co.in)  
 IMC Certifications is Accredited by Global Accreditation Assessment Forum Series (GAAFS)

■ ZERTIFIKAT ■ CERTIFICATO ■ CERTIFICADO ■ CERTIFICATE