



**VIVAX**  
**METROTECH**

# vLoc3-DM System

Technical Specifications V1.5



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## A. Description and Typical Applications

Item	Parameter
Model Name	vLoc3-DM
Model Number	VX222-01
Description	Pipeline defect mapper receiver
Intended Use	<ul style="list-style-type: none"> <li>- Locating &amp; pinpointing the position of buried pipes and cables</li> <li>- Long-distance pipeline location</li> <li>- Locating and pinpointing defects on buried pipelines</li> <li>- Profiling the CP current distribution on a pipeline network</li> <li>- Collect data for analysis and mapping with a fully integrated GNSS module</li> <li>- Fault-finding of damaged cables or pipe defects</li> </ul>

## B. Characteristics

Item	Parameter
Construction	High-impact thermoplastic (ABS) injection-molded housing
Weight	5.7lbs (2.6kg)
Dimensions	12.3in(L) x 4.6in(W) x 30.8in(H) (321mm x 124mm x 783mm)
Display Type	High-Visibility Color Display, 4.3"/10cm with 480 x 272 resolution and automatic backlight
Receiver Antennas	<ul style="list-style-type: none"> <li>- Two sets of Omnidirectional Antennas, each comprising:               <ul style="list-style-type: none"> <li>• Two Compass antennas</li> <li>• Two Horizontal antennas</li> <li>• Two Vertical antennas</li> </ul> </li> <li>- Low-Frequency field sensor foot</li> </ul>
Batteries	<ul style="list-style-type: none"> <li>- Rechargeable custom Lithium-ion batteries with 100-240V AC mains charger (Standard)</li> <li>- Six x AA Alkaline batteries (optional)</li> </ul>
Battery Life <sup>(1)</sup>	<ul style="list-style-type: none"> <li>- Lithium-ion – typically 30 hours of continuous use at 70°F (21°C)</li> <li>- Alkaline – typically 10 hours of intermittent use at 70°F (21°C)</li> </ul>
Environmental	IP65
External Connectors	<ul style="list-style-type: none"> <li>- Accessory Socket – to charge the internal batteries and attach accessories</li> <li>- Mini USB socket for data transfer and programming</li> </ul>

<b>Temperature Range</b>	<ul style="list-style-type: none"> <li>- Operating: -4°F to 122°F (-20°C to 50°C)</li> <li>- Storage: -40°F to 140°F (-40°C to 60°C)</li> <li>- Recommended storage temperature for lithium-ion batteries is typically:               <ul style="list-style-type: none"> <li>• Long-term storage: 59°F to 77°F (15°C to 25°C)</li> <li>• Short-term storage: 104°F (Up to 40°C)</li> <li>• Avoid: Temperatures below -4°F (-20°C) or above 140°F (60°C)</li> </ul> </li> </ul> <p>Storing batteries in a cool, dry place and at around 50% charge helps preserve battery health over time.</p>			
<b>Compliance and Approvals</b>	<p>Complies with European standard CE (Directive 99/5/EC)</p> <ul style="list-style-type: none"> <li>• EN 55011</li> <li>• EN 61000-4-2: A1 &amp; A2</li> <li>• EN 61000-4-3</li> <li>• EN 61000-4-8: A1</li> <li>• ETSI EN 300 330-2</li> <li>• ETSI EN 301 489-1</li> <li>• ETSI EN 301 489-3</li> </ul>	<p>Complies with FCC Rules Part 15</p> <ul style="list-style-type: none"> <li>• CFR 47 part 2</li> <li>• CFR 47 Part 15</li> </ul>		
<b>Manufacturing</b>	<p>Designed and manufactured per ISO 9001:2015</p>			
<b>What's In the Box</b>	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;"> <ul style="list-style-type: none"> <li>- vLoc3-DM Receiver</li> <li>- Attachable Low-Frequency sensor foot</li> <li>- USB data transfer cable</li> <li>- Custom lithium-ion battery pack</li> <li>- 100-240V AC mains charger</li> </ul> </td> <td style="width: 50%; border: none;"> <ul style="list-style-type: none"> <li>- Alkaline battery holder</li> <li>- User handbook</li> <li>- Soft carry bag</li> <li>- Combination Bluetooth &amp; WiFi module (factory embedded not accessible)</li> <li>- Cover plate for locator foot</li> </ul> </td> </tr> </table>		<ul style="list-style-type: none"> <li>- vLoc3-DM Receiver</li> <li>- Attachable Low-Frequency sensor foot</li> <li>- USB data transfer cable</li> <li>- Custom lithium-ion battery pack</li> <li>- 100-240V AC mains charger</li> </ul>	<ul style="list-style-type: none"> <li>- Alkaline battery holder</li> <li>- User handbook</li> <li>- Soft carry bag</li> <li>- Combination Bluetooth &amp; WiFi module (factory embedded not accessible)</li> <li>- Cover plate for locator foot</li> </ul>
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<b>Network &amp; Wireless Interfaces</b>	<ul style="list-style-type: none"> <li>- Wi-Fi: IEEE 802.11b/g/n (2.4 GHz)</li> <li>- ASCII password entry support</li> <li>- Bluetooth: Version 4.2 (BR/EDR and Low Energy)</li> <li>- Dual-mode operation: Supports simultaneous Wi-Fi and Bluetooth connections</li> </ul>			
<b>Compatible Accessories</b>	<ul style="list-style-type: none"> <li>- A-frame Fault Locator</li> <li>- Remote Antenna (Stethoscope)</li> <li>- Vehicle Charging DC Lead</li> <li>- Range of Sondes (waterproof, self-contained transmitters for use in nonmetallic pipes &amp; ducts)</li> <li>- Receiver clamp</li> </ul>			

## C. Operational

Item	Parameter
<b>Information Displayed</b>	<p><b>Information screen:</b></p> <ul style="list-style-type: none"> <li>- Real-time horizontal accuracy</li> <li>- Distance from last logged point</li> <li>- Altitude</li> <li>- DM current direction</li> <li>- DM current warning</li> <li>- Enter the graph screen</li> <li>- SiS / SD Reset</li> <li>- GPS coordinates available in DD, DDM, DMS format</li> <li>- Measured signal current in mA or Amps</li> <li>- Measured estimated depth of signal in Ft. and inches, Inches, or Meter</li> <li>- Data logging storage options: store or discard</li> <li>- Incremental data log count per survey</li> <li>- A-Frame and DM current readings (Simultaneous screen selection)</li> </ul> <p><b>Status Bar Information:</b></p> <ul style="list-style-type: none"> <li>- Antenna configuration: Peak, Peak with arrows, Null, Broad, Broad with arrows, Delta Null, Omni Directional Peak, Omni Directional Broad</li> <li>- Continuous depth estimation</li> <li>- Continuous current measurement</li> <li>- Battery charge level condition and battery type (Li-Ion / Alkaline)</li> <li>- Speaker volume</li> <li>- Bluetooth status</li> <li>- GNSS Fix type status</li> <li>- Wi-Fi connection status</li> <li>- Low-frequency field sensor connected</li> </ul> <p><b>Locate screen (Classic display):</b></p> <ul style="list-style-type: none"> <li>- Signal strength moving bar graph &amp; numeric value from 0% to 99.9%</li> <li>- Bar graph color-coded, indicating distortion level</li> <li>- Peak level indicator</li> <li>- Proportional left/right null indication</li> <li>- Compass with full 360°-line direction indicator</li> <li>- Gain level 0dB to 140dB</li> <li>- Frequency selected</li> <li>- Warnings when triggered</li> </ul>

	<ul style="list-style-type: none"> <li>- Plug and play automatic recognition of accessories</li> <li>- Accessory specific custom screens</li> </ul> <p><b>Review screen (not available in Sonde mode)</b></p> <ul style="list-style-type: none"> <li>- Log number</li> <li>- Selection of Log file with</li> <li>- Measured DM current</li> <li>- DM current direction</li> <li>- Measured estimated depth of signal in Ft. and inches, Inches, or Meter</li> <li>- Total survey distance</li> <li>- Distance from last logged point</li> <li>- Walk back feature</li> <li>- Selecting the various log points with their associated data</li> </ul> <p><b>Customer definable start-up screen</b></p>
<p><b>Locate Perspectives</b></p>	<ul style="list-style-type: none"> <li>- <b>Classic Locate</b> – moving bar graph with numeric value showing signal strength</li> <li>- <b>Vector Locate Screen</b> – fully automatic gain control with information display             <ul style="list-style-type: none"> <li>• Offset distance measurement to signal</li> <li>• Directional left or right arrow to offset location</li> <li>• Continuous depth estimation</li> <li>• Locate signal uncertainty with scaled circle indicator</li> <li>• Mini plan view for line orientation</li> <li>• Scale adjustment for deep utilities</li> </ul> </li> <li>- <b>Transverse Graph Screen</b> - visual assessment of locate quality and distortion             <ul style="list-style-type: none"> <li>• Visual peak indicator</li> <li>• Visual null indicator</li> <li>• Comparison of peak and null signal simultaneously</li> </ul> </li> <li>- <b>Plan View Screen</b> – fully automatic gain graphical representation of the cable position independent of cable direction,             <ul style="list-style-type: none"> <li>• Directional guidance arrow</li> <li>• Line orientation</li> <li>• Locate uncertainty represented with dash lines</li> <li>• Locate Uncertainty Line – Color Change Indicator</li> </ul> </li> <li>- <b>3D Sonde Locate Screen</b> – directing arrow to move to the Sonde position along the polar axis             <ul style="list-style-type: none"> <li>• Directional guidance arrow</li> <li>• Null point indicator</li> <li>• Bar graph with peak signal response</li> <li>• Magnetic field alignment indicator</li> </ul> </li> </ul>

<p><b>Configuration</b></p>	<p>The intuitive setup menu enables the user to configure:</p> <ul style="list-style-type: none"> <li>- Display Backlight (Low, Medium, High, Auto)</li> <li>- Frequency menu</li> <li>- Pipe diameter</li> <li>- Locate Perspective (Classic, Vector, Transverse Graph, Plan View, Sonde)</li> <li>- Measurement units (Feet, Inches, Metres)</li> <li>- Speaker Volume (Low, Medium, High, Off)</li> <li>- Continuous information (Depth, Signal current, Depth &amp; Current, Off)</li> <li>- Warnings (Overhead cable, Swing alert, Shallow depth, Signal overload)</li> <li>- Sound configuration (AM, FM)</li> <li>- Antenna configuration (Peak, Peak with arrows, Null, Broad, Broad with arrows, Delta Null, Omni Directional Peak, Omni Directional Broad)</li> <li>- Auto Power off (5 mins, 10 mins, Never)</li> <li>- Coordinate Format (DMS, DDM, DD)</li> <li>- GPS Source (internal, Bluetooth)</li> <li>- Language (31 different languages available)</li> <li>- Survey type (Electric, Gas, Communications, Potable Water, Reclaimed Water, Sewer, Temporary Survey, Proposed Excavation, Oil)</li> <li>- Bluetooth/WiFi Connection Enable/Disable/Auto Connect</li> <li>- Bluetooth Pairing</li> <li>- WiFi Network connection</li> <li>- Set up frequency selection to toggle by “f” pushbutton</li> <li>- Change antenna mode by toggling “Enter” pushbutton</li> <li>- Change screen views selection to toggle by long press “<b>Enter</b>” pushbutton</li> </ul>
<p><b>Data logging</b></p>	<ul style="list-style-type: none"> <li>- 50 million records of internal storage</li> <li>- Data can also be transferred via Bluetooth to the VMMap Mobile App and VMMap Cloud</li> <li>- All parameters stored at each location, including depth, current, date, time, mode, gain setting, frequency, longitude, latitude, and more</li> </ul>
<p><b>Data Transfer</b></p>	<p>Via the Vivax-Metrotech “MyLocator3” software application available free of charge from <a href="http://www.vivax-metrotech.com">www.vivax-metrotech.com</a>. Data can be saved in csv, kml, shp, dxf, txt, xls and xlsx formats. The transfer is via a USB cable connection from the locator to the host computer.</p> <p><b>Or</b></p> <p>Via Bluetooth from the locator to the VMMap App and also into the VMMap Cloud (Vivax-Metrotech Cloud)</p>
<p><b>Operating Frequencies</b></p>	<ul style="list-style-type: none"> <li>- Configurable frequencies from 98Hz to 200kHz             <ul style="list-style-type: none"> <li>• Dedicated Power 50Hz and 60Hz</li> <li>• Radio 10.0kHz - 22.7kHz bandwidth</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>• Power harmonics for 50Hz or 60Hz regions</li> <li>• SD-USA: 256Hz/512Hz, SD-EUROPE: 320Hz/640Hz</li> <li>• ELF: 3Hz/6Hz/98Hz      3Hz/6Hz/128Hz</li> <li>• ELF 4Hz/8Hz/98Hz      4Hz/8Hz/128Hz</li> <li>• 3Hz/6Hz/512Hz      3Hz/6Hz/640Hz</li> <li>• 4Hz/8Hz/512Hz      4Hz/8Hz/640Hz</li> </ul>								
<b>Operating Antenna Modes</b>	<ul style="list-style-type: none"> <li>- Peak, Peak with arrows, Broad Peak</li> <li>- Broad with arrows</li> <li>- Null, Delta Null</li> <li>- Omni Directional Peak, Omni Directional Broad</li> </ul>								
<b>Integrity Test</b>	<ul style="list-style-type: none"> <li>- Calibration Self-test <ul style="list-style-type: none"> <li>• Uses direct signal injection to test antenna transfer function (TRF)</li> </ul> </li> <li>- Distorted Frequency Test (DFT) <ul style="list-style-type: none"> <li>• Aids in selecting optimal locate frequencies in noisy environments</li> </ul> </li> </ul>								
<b>Gain Control</b>	<ul style="list-style-type: none"> <li>- Manual gain using “+” or “-” keys</li> <li>- One touch of the “+” or “-” keys rescales to 60% of the bar graph scale</li> <li>- In Vector Screen, “+” and “-” keys act as zoom feature to keep the target utility in view</li> <li>- In the Transverse Graph screen, “+” key saves the screen graph, “-” key clears the screen</li> </ul>								
<b>Accuracy <sup>(2)</sup></b>	<table border="1"> <tr> <td data-bbox="406 1095 853 1202">Locate pinpointing accuracy:</td> <td data-bbox="853 1095 1495 1202"> <ul style="list-style-type: none"> <li>- Up to 9ft (3m) – +/- 3% of depth</li> <li>- Over 9ft (3m) – +/- 5% of depth</li> </ul> </td> </tr> <tr> <td data-bbox="406 1202 853 1266">Depth measurement accuracy:</td> <td data-bbox="853 1202 1495 1266">+/- 3% of depth</td> </tr> <tr> <td data-bbox="406 1266 853 1372">Current measurement accuracy:</td> <td data-bbox="853 1266 1495 1372"> <ul style="list-style-type: none"> <li>- +/- 3% of actual current – up to 9ft (3m)</li> <li>- +/- 5% of actual current – over 9ft (3m)</li> </ul> </td> </tr> <tr> <td data-bbox="406 1372 853 1521">Depth range:</td> <td data-bbox="853 1372 1495 1521"> <ul style="list-style-type: none"> <li>- Dependent on the strength of the signal radiating to the locator</li> <li>- Maximum depth displayed 98ft (30m)</li> </ul> </td> </tr> </table>	Locate pinpointing accuracy:	<ul style="list-style-type: none"> <li>- Up to 9ft (3m) – +/- 3% of depth</li> <li>- Over 9ft (3m) – +/- 5% of depth</li> </ul>	Depth measurement accuracy:	+/- 3% of depth	Current measurement accuracy:	<ul style="list-style-type: none"> <li>- +/- 3% of actual current – up to 9ft (3m)</li> <li>- +/- 5% of actual current – over 9ft (3m)</li> </ul>	Depth range:	<ul style="list-style-type: none"> <li>- Dependent on the strength of the signal radiating to the locator</li> <li>- Maximum depth displayed 98ft (30m)</li> </ul>
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Depth range:	<ul style="list-style-type: none"> <li>- Dependent on the strength of the signal radiating to the locator</li> <li>- Maximum depth displayed 98ft (30m)</li> </ul>								
<b>Sensitivity</b>	5 uA rms @ 1m depth, 32768Hz to yield +20dB SNR referred to a <10Hz> bandwidth								
<b>Compatible Transmitters</b>	Loc3-25Tx, Loc-150Tx and any Vivax-Metrotech transmitter with matching frequencies								

## D. Communications

Item	Parameter
Bluetooth® and Wi-Fi	<ul style="list-style-type: none"> <li>- Internal Bluetooth® for communicating with:               <ul style="list-style-type: none"> <li>• External GNSS receivers, data logging devices, or Apps</li> <li>• Apple® devices</li> <li>• Android™ devices</li> <li>• Windows® devices</li> </ul> </li> <li>- Internal Wi-Fi for Over the air updates and future applications</li> </ul>
GNSS Features	<ul style="list-style-type: none"> <li>- Internal GNSS module               <ul style="list-style-type: none"> <li>• GPS/QZSS, GLONASS, Galileo, BeiDou, SBAS</li> <li>• 1.5m CEP 50 accuracy (24 hours static, -130 dBm, more than 6 SVs)</li> <li>• Acquisition: Cold starts = 25s, Reacquisition = 2s</li> </ul> </li> </ul>

## E. Shipping and Packaging

Item	Parameter
Shipping Weight	15.7lbs (7.1kg)
Shipping Dimension	14.1in(L) x 11in(W) x 29.8in(H) (358mm x 279mm x 756mm)

## F. Warranty

Item	Parameter
Warranty	<ul style="list-style-type: none"> <li>- 24 month</li> <li>- Extended warranty available</li> </ul>

## G. Software Updates

Item	Parameter
Software	<ul style="list-style-type: none"> <li>- The software can be upgraded using a PC with a USB port. Program updates &amp; locator software updates are available via the free MyLocator3 app.</li> <li>- Software updates provided over the air (OTA) when connected to a WiFi hotspot.</li> </ul>

- 1) Battery life varies with usage conditions such as backlight, brightness, speaker volume, and Wi-Fi/BT connectivity; continuous operation may reduce the runtime compared to typical intermittent use. Lithium-ion battery performance will gradually degrade over time and with repeated charge cycles, leading to reduced operating duration under continuous use. Re-charging cycles are approximately 500 times the life cycle.
- 2) Locate and depth accuracy are quoted for 20°C and average soil conductivity. It is also assumed the return current localisation is deep compared to the target cable.

**Disclaimer:** Product and accessory specifications and availability information are subject to change without prior notice.

**Performance Disclaimer**

Actual performance may vary depending on environmental conditions, user technique, and signal interference.

**Software & Firmware Disclaimer**

Functionality described may depend on the software or firmware version installed. Features are subject to modification through future updates.

**Battery & Power Disclaimer**

Battery life is estimated and may vary based on settings, usage, temperature, and battery age.

**Calibration Disclaimer**

Self-Test results confirm system consistency with factory calibration, but do not replace periodic professional calibration if required by company policy or regulation.

**Compliance Disclaimer**

Compliance with regional standards may vary by country. Users are responsible for ensuring the product is used in accordance with local laws and regulations.

**Use Case Disclaimer**

The system is intended for professional utility locating and should not be used for purposes outside the manufacturer's defined scope.

**Third-Party Services Disclaimer**

Use of GNSS correction services or cloud platforms may require third-party subscriptions and are subject to their terms and availability.

**Feature Availability Disclaimer:**

Certain features, frequencies, or accessories may only be available in specific markets due to regional regulations or product certifications. Please consult your local Vivax-Metrotech representative for availability in your area.

**Trademark Disclaimer:**

All product names, logos, and brands mentioned are the property of their respective owners. All company, product, and service names used in this document are for identification purposes only. Use of these names, logos, or brands does not imply endorsement.