



**VIVAX**  
**METROTECH**

# vLoc3 RTK-Pro

Technical Specifications V1.0



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## A. Typical Applications

Item	Parameter
<b>Description</b>	Multi-purpose precision locator receiver with fully integrated RTK GNSS
<b>Uses</b>	<ul style="list-style-type: none"> <li>- Locating &amp; pinpointing the position of buried pipes, cables, and sondes</li> <li>- Detailed position mapping of buried utilities</li> <li>- Surveying</li> </ul>

## B. Characteristics

Item	Parameter
<b>Construction</b>	High impact thermoplastic (ABS) injection molded housing
<b>Weight</b>	5.5lbs (2.5kg)
<b>Dimensions</b>	14.7in(L) x 4.9in(W) x 29.8in(H) (374mm x 125mm x 758mm)
<b>Display Type</b>	High-Visibility Color Display 4.3"/10cm with 480 x 272 resolution
<b>Receiver Antennas</b>	<ul style="list-style-type: none"> <li>- Two sets of 3D antennas</li> <li>- GNSS Antenna</li> <li>- 2G/3G/4G LTE Cellular Antenna</li> </ul>
<b>Battery</b>	<ul style="list-style-type: none"> <li>- Six x AA Alkaline batteries</li> <li>- Rechargeable custom Lithium-ion batteries with 100-240V AC mains charger</li> </ul>
<b>Battery Life</b>	<ul style="list-style-type: none"> <li>- Alkaline – typically 6 hours of intermittent use at 70°F (21°C)</li> <li>- Lithium-ion – typically 14 hours of intermittent use at 70°F (21°C) (with full backlight turned on). Re-charging cycles approx. 500 times life cycle. Battery life varies with temperature.</li> </ul>
<b>Environmental</b>	<ul style="list-style-type: none"> <li>- IP65 and NEMA 4</li> </ul>
<b>External Connectors</b>	<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> </ul>
<b>Compliance and Approvals</b>	<ul style="list-style-type: none"> <li>- Complies with European standard CE (Directive 99/5/EC) <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> </ul> </li> </ul>

	<ul style="list-style-type: none"> <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> <li>- Complies with FCC Rules Part 15             <ul style="list-style-type: none"> <li>• CFR 47 part 2</li> <li>• CFR 47 Part 15</li> </ul> </li> </ul>
<b>Standard Accessories</b> (comes with receiver)	<ul style="list-style-type: none"> <li>- USB data transfer cable</li> <li>- Custom lithium-ion battery pack</li> <li>- 100-240V AC mains charger</li> <li>- Six x AA Alkaline battery holder</li> <li>- User handbook</li> <li>- Carry bag</li> </ul>
<b>Compatible Accessory Options</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>- Choice of either: factory fitted Radio Link to a Loc3 series transmitter <u>or</u> a factory fitted internal Bluetooth Module</li> <li>- Range of Sondes (waterproof, self-contained transmitters for use in pipes &amp; ducts)</li> </ul>

## C. RTK

Item	Parameter
<b>GNSS Features</b>	<ul style="list-style-type: none"> <li>- Satellite Tracked: - GPS/QZSS, GLONASS, Galileo, BeiDou</li> <li>- GPS L1C/A L2C, GLO L1OF L2OF, GAL E1B/C E5b, BDS B1I B2I, QZSS L1C/A L2C</li> <li>- Position accuracy RTK 0.01 m + 1 ppm CEP</li> <li>- Convergence time RTK &lt; 10 sec</li> <li>- Acquisition: Cold starts = 24s, Reacquisition = 2s</li> <li>- Dependent on atmospheric conditions, baseline length, GNSS antenna, multipath conditions, satellite visibility, and geometry</li> </ul>
<b>NTRIP</b>	<ul style="list-style-type: none"> <li>- Compatible with Caster s with R TCM3 output messages</li> <li>- Real-time reference station connection status displayed on the receiver</li> <li>- Real-time horizontal accuracy in 2DRMS</li> </ul>
<b>Cellular Connection</b>	<ul style="list-style-type: none"> <li>- 4G with 3G fallback</li> <li>- LTE FDD bands 2, 4, 5, 7, 17</li> <li>- UMTS/HSPA [MHz]850, 900, 1700, 1900, 2100</li> </ul>

## D. Operational

Item	Parameter
Information Displayed	<p><b>Status Bar Information:</b></p> <ul style="list-style-type: none"> <li>- Antenna configuration: Peak, Peak with arrows, Null, Broad, Delta Null, Omni Directional Peak, Omni Directional Broad</li> <li>- Line location - depth &amp; current measurement</li> <li>- Battery condition</li> <li>- Speaker volume</li> <li>- Bluetooth and GNSS status (If fitted)</li> <li>- Cellular connection status</li> <li>- Radio link to transmitter status (if fitted)</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</li> <li>- Bar graph color-coded indicating distortion level</li> <li>- Peak level indicator</li> <li>- Proportional left/right indication</li> <li>- Compass: full 360°-line direction indicator</li> <li>- Gain level (in dB)</li> <li>- Frequency selected</li> <li>- Product configuration menu &amp; submenus including RTK and GNSS status and data logging transfer status.</li> <li>- Customer definable start-up screen</li> <li>- Depth and current</li> <li>- Warnings (if activated)</li> <li>- Plug and play automatic recognition of accessories</li> <li>- Accessory specific custom screens</li> </ul> <p><b>Information screen:</b></p> <ul style="list-style-type: none"> <li>- GPS co-ordinates</li> <li>- Real-time horizontal accuracy in 2DRMS</li> <li>- Signal current and depth value</li> <li>- Log number</li> <li>- Spirit level used to calculate offset correction</li> </ul> <p><b>Alternative locate screens:</b></p> <ul style="list-style-type: none"> <li>- Transverse Graph Screen - visual assessment of locate quality and distortion</li> <li>- Sonde Locate Screen – directing arrow to move to the Sonde position along the polar axis</li> </ul>

	<ul style="list-style-type: none"> <li>- Vector Locate Screen – fully-automatic locate including offset, depth and locate uncertainty</li> <li>- Plan View Screen – fully-automatic graphical representation of the cable position independent of cable direction including depth/current and locate uncertainty.</li> </ul>
<b>Configuration</b>	<p>Intuitive setup menu enables the user to configure:</p> <ul style="list-style-type: none"> <li>- Set up frequency selection to toggle by “f” pushbutton</li> <li>- Setup location mode selection to toggle by “m” pushbutton</li> <li>- Setup screen views selection to toggle by long press “m” pushbutton</li> <li>- Units of measure (feet/meters)</li> <li>- Sound (Pitch) – normal/modulated</li> <li>- Language</li> <li>- Continuous depth/current options</li> <li>- Loudspeaker level</li> <li>- Backlight</li> <li>- Bluetooth pairing if fitted</li> <li>- Transmitter Radio Link if fitted</li> <li>- Warnings (Excessive Tilt, Overhead Signal, Shallow Cable, Signal Overload)</li> <li>- Auto shut down – configurable to power down at five minutes, ten minutes, or never</li> <li>- RTK set-up</li> <li>- Data transfer to cloud set-up</li> </ul>
<b>Data Logging</b>	<ul style="list-style-type: none"> <li>- 50 million record internal storage</li> <li>- Data can also be transferred for storage, via cellular connectivity, into the cloud using the Vivax-Metrotech application, VM MAP</li> <li>- All parameters stored at each location including depth, current, date, time, mode, gain setting, frequency, locate uncertainty, longitude, latitude, and height above sea-level</li> </ul>
<b>Data Transfer</b>	<ul style="list-style-type: none"> <li>- Uses 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 xls, txt, shp, csv and kml (Google Earth) formats. The transfer is via a USB cable connection from the locator to the host PC.</li> </ul> <p><b>Or</b></p> <ul style="list-style-type: none"> <li>- Cellular transfer via the “cloud” using Vivax-Metrotech application software, VM Map</li> </ul>
<b>Operating Frequencies</b>	<ul style="list-style-type: none"> <li>- Configurable frequencies from 16 Hz to 200 kHz <ul style="list-style-type: none"> <li>• Power 50Hz and 60Hz</li> <li>• Radio 22.7kHz, 10kHz bandwidth</li> </ul> </li> </ul>
<b>Operating Modes</b>	<ul style="list-style-type: none"> <li>- Classic Locate (Signal strength bar graph)</li> <li>- Transverse Graph Mode</li> </ul>

	<ul style="list-style-type: none"> <li>- Plan View (Omni Directional)</li> <li>- Vector Locate (Lateral Position &amp; Depth)</li> <li>- Sonde Locate</li> </ul>	
<b>Gain / Scaling Control</b>	Manual gain using "+" or "-" with one touch to return to 60% of FSD, "+" or "-" used to rescale the vector screen dependent on cable depth and offset	
<b>Accuracy</b>	Locate pinpointing accuracy:	<ul style="list-style-type: none"> <li>- Over 9ft (3m) – 5% of th depth</li> <li>- Up to 9ft (3m) – 3% of the depth</li> </ul>
	Depth measurement accuracy:	3% of the depth
	Current measurement accuracy:	<ul style="list-style-type: none"> <li>- 5% of actual current – over 9ft (3m)</li> <li>- 3% of actual current – up to 9ft (3m)</li> </ul>
	Depth range:	Dependent on the strength of signal radiating to the locator
	Performance rated using a single undistorted signal source	
<b>Compatible Transmitters</b>	Loc3-5Tx, Loc3-10Tx, Loc-5STx, and any Vivax-Metrotech transmitter with matching frequencies	

## E. Shipping and Packaging

Item	Parameter
<b>Shipping Weight</b>	10.8lbs (4.9kg) (receiver only)
<b>Shipping Dimension</b>	16.5in(L) x 11in(W) x 27.6in(H) (420mm x 280mm x 700mm) (receiver only)

## F. Warranty

Item	Parameter
<b>Warranty</b>	<ul style="list-style-type: none"> <li>- Two years</li> <li>- Optional extended warranty available</li> </ul>

## G. Firmware Updates

Item	Parameter
<b>Software</b>	The software can be upgraded using a PC with a USB port. Programs & locator software are available via MyLocator3 app

All products are designed and manufactured in accordance with ISO 9001:2015.

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