VIVAX METROTECH

vLoc3 RTK-Pro

Technical Specifications V1.4

VIVAX METROTECH

A. Description and Typical Applications

Item	Parameter
Model Name	RTK-Pro
Model Number	VX226-01
Description	Multi-purpose precision locator receiver with fully integrated RTK GNSS
Intended Use	- Locating & pinpointing the position of buried pipes, cables, and sondes - High accuracy GNSS mapping of above and buried utility assets

B. Characteristics

Item	Parameter
Construction	High-impact thermoplastic (ABS) injection molded housing
Weight	5.5lbs (*2.5kg*)
Dimensions	14.7in(L) x 4.9in(W) x 29.8in(H) (*374mm x 125mm x 758mm*)
Display Type	High-Visibility Color Display, 4.3”/10cm with 480 x 272 resolution
Receiver Antennas	- Two sets of Omnidirectional Antennas, each comprising: • Two Compass antennas • Two Horizontal antennas • Two Vertical antennas - GNSS Antenna - Cellular Antenna
Batteries	- Six x AA Alkaline batteries - Rechargeable custom Lithium-ion batteries with 100-240V AC mains charger
Battery Life	- Alkaline – typically 6 hours of intermittent use at 70ºF (21ºC) - Lithium-ion – typically 14 hours of intermittent use at 70ºF (21ºC) * With backlight activated, Battery life varies with temperature; re-charging cycles are approximately 500 times the life cycle
Environmental	- IP65 and NEMA 4
External Connectors	- Accessory Socket – to charge the internal batteries and attach accessories - Mini USB socket for data transfer and programming - Nano SIM card for cellular connectivity
Temperature Range	- Operating: -4ºF to 122ºF (-20ºC to 50ºC) - Storage: -40ºF to 140ºF (-40ºC to 60ºC)

Compliance and Approvals	- Complies with European standard CE (Directive 99/5/EC) • EN 55011 • EN 61000-4-2: A1 & A2 • EN 61000-4-3 • EN 61000-4-8: A1	• ETSI EN 300 330-2 • ETSI EN 301 489-1 • ETSI EN 301 489-3 - Complies with FCC Rules Part 15 • CFR 47 part 2 • CFR 47 Part 15
Manufacturing	Designed and manufactured per ISO 9001:2015	
What's In the Box	- RTK-Pro Receiver - USB data transfer cable - Custom lithium-ion battery pack - 100-240V AC mains charger	- Six x AA Alkaline battery holder - User handbook - Carry bag
Compatible Accessories	- A-frame fault locator - Remote Antenna (Stethoscope) - Vehicle Charging DC Lead - Factory-installed internal Bluetooth Module - Range of Sondes (waterproof, self-contained transmitters for use in nonmetallic pipes & ducts) - Adapters • Tall adapter • Survey Adapter (30cm) • Long Survey Adapter (91cm)	

C. RTK

Item	Parameter
GNSS Features	- Satellite Tracked: - GPS/QZSS, GLONASS, Galileo, BeiDou - GPS L1C/A L2C, GLO L1OF L2OF, GAL E1B/C E5b, BDS B1I B2I, QZSS L1C/A L2C - Position accuracy RTK 0.01 m + 1 ppm CEP - Convergence time RTK < 10 sec - Acquisition: Cold starts = 24s, Reacquisition = 2s - SBAS and QZSS support *Specification dependent on atmospheric conditions, baseline length, GNSS antenna, multipath conditions, satellite visibility, and geometry
NTRIP	- Compatible with Casters with RTCM3.x output messages - Real-time reference station connection status displayed on the receiver - Real-time horizontal accuracy in 2DRMS
Cellular Connection	- 4G with 3G fallback

	- LTE FDD bands 2, 4, 5, 7, 17 1, 3, 5, 7, 8, 20 - UMTS/HSPA [MHz]850, 900, 1700, 1900, 2100 *Connectivity and bands dependent on world coverage region - FOTA (firmware over the air) updates for Cellular Devices
Third-party Support	- Bluetooth connectivity to mobile devices for mapping on Android or iOS - NTRIP over Bluetooth - NMEA output over Bluetooth for high accuracy core location on a mobile device - Connectivity from VMMap Cloud to GIS servers - Connectivity from VMMap Cloud to an external database via API

D. Operational

Item	Parameter
Information Displayed	**Information screen:** - Real-time horizontal accuracy in 2DRMS - Spirit level used to calculate offset correction - GPS coordinates - Measured current on the utility line - Measured estimated depth reading to utility line - Logging storage options **Status Bar Information:** - Antenna configuration: Peak, Peak with arrows, Broad Peak, Null, Delta Null, Omni Directional Peak, Omni Directional Broad - Line location - depth & current measurement - Battery condition - Speaker volume - Bluetooth and GNSS status (If installed) - Cellular connection status and signal quality **Locate screen (Classic display):** - Signal strength - moving bar graph & numeric value - Bar graph color-coded, indicating distortion level - Peak level indicator - Proportional left/right indication - Compass: full 360°-line direction indicator - Gain level (in dB) - Frequency selected - Configuration menus with RTK status, GNSS status, and data logging transfer status - Depth and current

	- Warnings (if activated) - Plug and play automatic recognition of accessories - Accessory specific custom screens **Customer definable start-up screen**
Locate Perspectives	- **Classic Locate** – moving bar graph with numeric value showing signal strength - **Vector Locate Screen** – fully automatic locate including offset, depth and locate uncertainty - **Transverse Graph Screen** - visual assessment of locate quality and distortion - **Plan View Screen** – fully automatic graphical representation of the cable position independent of cable direction, including depth/current and locate uncertainty. - **Sonde Locate Screen** – directing arrow to move to the Sonde position along the polar axis
Configuration	The intuitive setup menu enables the user to configure: - RTK setup - Data transfer to cloud setup - Set up frequency selection to toggle by "***f***" pushbutton - Setup location mode selection to toggle by "***m***" pushbutton - Setup screen views selection to toggle by long press "***m***" pushbutton - Units of measure (feet/meters) - Sound (Pitch) – normal or modulated - Language - Continuous depth and current options - Loudspeaker level - Backlight - Bluetooth pairing, if installed - Transmitter Radio Link if installed - Warnings (Excessive Tilt, Overhead Signal, Shallow Cable, Signal Overload) - Auto shut down – configurable to power down at five minutes, ten minutes, or never
Data Logging	- 50 million records of internal storage - Data can also be transferred for storage via cellular connectivity into the cloud using the Vivax-Metrotech application, VMMAP - All parameters stored at each location, including depth, current, date, time, mode, gain setting, frequency, locate uncertainty, longitude, latitude, and height above sea level
Data Transfer	- Via the Vivax-Metrotech "MyLocator3" software application free of charge from www.vivax-metrotech.com. Data can be saved in csv, klm, shp, txt, xls and xlsx formats. The transfer is via a USB cable connection from the locator to the host computer. **Or** - Cellular transfer to the VMMap Cloud (Vivax-Metrotech Cloud)

Operating Frequencies	- Configurable frequencies from 98Hz to 200kHz • Power 50Hz and 60Hz • Radio 10.0kHz - 22.7kHz bandwidth	
Operating Modes	- Peak, Peak with arrows, Broad Peak - Null, Delta Null - Omni Directional Peak, Omni Directional Broad	
Integrity Test	- Calibration Self-test - Discrete Fourier Transform (DFT) frequency test	
Gain Control	Manual gain using "**+**" or "**-**" keys One touch of the "**+**" or "**-**" keys rescales to 60% of the bar graph scale In Vector Screen, the "**+**" and "**-**" keys act as zoom feature to keep the target utility in view In the Transverse Graph screen, "**+**" key saves the screen graph, "**-**" key clears the screen	
Accuracy	Locate pinpointing accuracy:	- Over 9ft (3m) – 5% of the depth - Up to 9ft (3m) – 3% of the depth
	Depth measurement accuracy:	+/- 5% of the depth
	Current measurement accuracy:	- 5% of actual current – over 9ft *(3m)* - 3% of actual current – up to 9ft *(3m)*
	Depth range:	Dependent on the strength of the signal radiating to the locator
	* Performance rated using a single undistorted signal source	
Compatible Transmitters	Loc3-5Tx, Loc3-10Tx, Loc3-25Tx and any Vivax-Metrotech transmitter with matching frequencies	

E. Shipping and Packaging

Item	Parameter
Shipping Weight	10.8lbs (*4.9kg*)
Shipping Dimension	16.5in(L) x 11in(W) x 27.6in(H) (*420mm x 280mm x 700mm*)

F. Warranty

Item	Parameter
Warranty	- Two years - Optional extended warranty available

G. Software Updates

Item	Parameter
Software	The software can be upgraded using a PC with a USB port. Program updates & locator software updates are available via the free MyLocator3 app.

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