



VIVAX
METROTECH

vScan-SE Utility Avoidance Tool

Technical Specifications V1.0



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A. The vScan-SE System

The vScan-SE receiver and optional transmitter are used to locate buried utilities. The vScan-SE M version incorporates all the vScan-SE features plus a metal cover locating mode.

The System is designed for use by users of all skill levels, from new users to those with extensive experience. A comprehensive range of optional accessories is available.

Using the vScan-SE is intuitive. The user interface and controls are in line with the industry standard. At the same time, a suite of new features helps the user productively achieve an accurate locate and provides proof of the locate and the data collected.

B. Typical Applications

- Locating to find and avoid striking known or unknown buried pipes and cables
- Locating to trace and pinpoint buried pipes and cables
- Locating buried non-metallic pipes and pinpointing blockages (requires the use of a sonde transmitter)
- Data logging (captures and stores key information regarding the locate as proof of the use of the vScan operating modes and frequencies along with any alerts)
- Locating buried metal covers (M version only)
- Mapping via Wi-Fi data transfer to the VMMap Cloud

C. Typical Users

- Utility and communication companies and their contractors
- General contractors, building and plant maintenance companies
- Municipalities, councils, railways, and local and state government agencies

D. Receiver Assembly

Item	Parameter
Model Name	vScan-SE Receiver
Model Number	VX207-01
Construction	High-impact thermoplastic (ABS) injection-moulded housing
Weight	Standard: 5.2lb (2.2kg) With Metal detect option: 5.9lb (2.4kg)
Dimensions	27in x 11in x 3in (69cm x 28cm x 7.5cm)
Display	240 x 400 pixel, 2.7" (6.9cm) Monochrome, high resolution, WQVGA dot matrix screen, TFT, sunlight readable and with backlight
Receiver Antennas	2 x peak antennas, 1 x compass antenna, metal detect antenna array (M version only)
Audio	Internal (fixed) loudspeaker and a removable speaker on a curly cord comply with health and safety output level requirements.
Vibration Module	DC motor
Battery Options	- Standard battery pack (using 6 x alkaline batteries type AA) - Optional custom Lithium ion rechargeable battery pack (7.2V, 6700mAh) with charger (Input: 100-240V AC, 50/60Hz, 1.0A; Output: 8.4V, 2.0A)

Battery Life⁽¹⁾	- Alkaline – typically 12 hours of intermittent use at 70°F (21°C) - Li-ion – 40-50 hours of intermittent use at 70°F (21°C)
External Connectors	1 x USB-C socket for charging
Controls	- 2 x Pushbuttons - Rotary control - Paddle Control
Compliance/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 • EN 61000-6-2 • EN 61000-6-3 • EN 61010-1 • EN 61010-2-031 • EN 61010-2-032 • ETSI EN 300 330-2 • ETSI EN 301 489-1 • ETSI EN 301 489-3 - Complies with FCC Rules Part 15 • CFR 47 Part 15
Manufacturing	Designed and manufactured per ISO 9001:2015

E. Receiver Operational

Item	Parameter
Information Displayed	- Signal strength - moving bar graph - Peak hold indicator (indicates peak signal) - Mode indication (33kHz, 131kHz, Power, Radio, Sonde) - Metal cover location mode (M version only) - Compass (line direction indicator) - Line location - depth & current measurement - Sonde location - depth measurement - Battery condition - Speaker volume - GPS status (GPS version only) - Wi-Fi Connection Status - System self-test and calibration verification - Alert icons • Swing alert • Shallow line alert • Overhead signal alert • Signal overload alert • Service reminder action required alert (other alerts, and more)
Alert Notification Methods (all user-configurable)	- Visual alert (on-screen warning) - Audio - Vibration in the handle - Shutdown unit
Locating Frequencies	- Active modes: 32.768kHz, 131.072kHz - Radio mode: 15kHz to 30.5kHz - Passive modes: 50/60Hz plus harmonics - Metal Detect (M version only), frequency not applicable - Sondes: 32.768kHz, 512Hz and 640Hz Sonde modes

Controls	- On/off - Info (depth/current - configurable) - Rotary Gain Control - Paddle (mode and menu navigation)										
Location Assist Tools	Orientation to line guidance in active mode (compass line direction indicator)										
Data Logging	- Integrated data logging (time-based) • Uses internal Real-Time Clock • 8GB internal data storage (included) • Data management via VMMap Cloud and VMMap App Pro - All locate, date, and time parameters stored for each data point based on the background event - Data transfer to VMMap Cloud using Wi-Fi Hotspot										
VMMap Cloud (Locator and data management)	- Over-the-Air (OTA) software update when registered to VMMap Cloud - Automatic upload of log files from vScan when connected to a Wi-Fi Hotspot - Manage and export data - Export formats: .xls, .csv, .shp, .kml, .jpg, .pdf, .xlsx - Full manipulation of data for training identification or mapping purposes - Standard templates available - Print the latest receiver calibration check certificate										
Performance	- Sensitivities <table> <thead> <tr> <th>Mode</th><th>Sensitivity at 3.2ft (1m)</th></tr> </thead> <tbody> <tr> <td>50Hz/Power mode</td><td>5mA</td></tr> <tr> <td>33kHz mode</td><td>15µA</td></tr> <tr> <td>131kHz mode</td><td>10µA</td></tr> <tr> <td>Metal detect</td><td>150mm (6") cast iron cover detectable at 250mm (10")</td></tr> </tbody> </table>	Mode	Sensitivity at 3.2ft (1m)	50Hz/Power mode	5mA	33kHz mode	15µA	131kHz mode	10µA	Metal detect	150mm (6") cast iron cover detectable at 250mm (10")
Mode	Sensitivity at 3.2ft (1m)										
50Hz/Power mode	5mA										
33kHz mode	15µA										
131kHz mode	10µA										
Metal detect	150mm (6") cast iron cover detectable at 250mm (10")										
Lateral Performance (Using single, undistorted signal source)	Lateral accuracy: - up to 9ft (3m) – +/- 3% of the depth - over 9ft (3m) – +/- 5% of the depth										
Depth Performance⁽²⁾ (Using single, undistorted signal source)	- Depth measurement accuracy: 2.5% of depth. over 9ft (3m) +/- 5% of the depth - Current measurement: Accuracy +/- 5% of the detected signal, measured in mA rms. - Depth range: Dependent on the strength of the signal radiating to the locator. Maximum practical line depth: 23ft (7m)										

F. Transmitter Assembly

Item	Parameter
Model Name	vScan Transmitter
Model Number	VX207-02
Construction	High impact ABS
Weight	3.3lbs (1.5kg) (with Li-ion batteries) 3.7lbs (1.7kg) (with Alkaline Batteries)
Dimensions	18.1in x 3.5in x 2.6in (46cm x 9.0cm x 6.5cm)
Display	2 x LED Interface
Audio	Internal Sounder
Controls	4 x pushbuttons
External Connectors	- 1 x 3-pin connection socket – (XLR) - Charging socket on the optional rechargeable battery
Battery Options	- Standard battery pack – using 4 x alkaline batteries type D - Optional custom Lithium-ion rechargeable battery pack (7.2V, 5200mAh) with charger (Input: 100-240V AC, 50/60Hz, 1.0A; Output: 8.4V, 2.0A)
Battery Life ⁽¹⁾	- Alkaline – typically 12 hours - Optional Li-ion – typically 36 hours At 1 watt, full output. (Maximum output into 300-ohm load and 50% duty cycle. At 70°F 21°C)
Output Protection	Output protected against accidental connection up to 240V AC
Approvals	- Complies with European standard CE (Directive 99/5/EC) • EN 55011 • EN 61000-6-4: 2007 • EN 61000-4-3: 2006 • EN 61000-4-2: 1995 A1 & A2 • EN 61000-4-8: 1994 A1 - Complies with FCC Rules Part 15 • CFR 47 part 2 • CFR 47 Part 15 - ETSI EN 300 330-2: 2006 - ETSI EN 301 489-1: 2005 - ETSI EN 301 489-3: 2002
Manufacturing	Designed and manufactured per ISO 9001:2015

G. Transmitter Operational

Item	Parameter
Transmitting Frequency by Mode	- Induction mode • 33kHz (32,768Hz) - Connection mode • 33kHz (32,768Hz) • 131kHz (131,072Hz) • Both signals are transmitted simultaneously - Clamp mode • 33kHz (32,768Hz) • 131kHz (131,072Hz) • Both signals are transmitted simultaneously
Output Power Settings	- Battery saving (transmitter defaults to low output power when first switched on to conserve battery life) - High output (additional power can be selected when required)
Transmitting Mode Power output	1 watt
Output voltage	Maximum output voltage = 35V RMS
Output current	Maximum output current = 100mA RMS
Controls	- 4 x pushbuttons • On/Off • Speaker volume • Signal output level • Pulse/continuous output signal
Visual Indication	2 x LED indicating low and high output level
Audio indication	- A change in tone confirms a good connection - Tone pulsing or continuous to reflect Tx output - Slow pulse tone to indicate low battery
Compatible with Receivers	vScan, vScan-SE and any Vivax-Metrotech receiver with matching frequencies

H. Environmental (both receiver and transmitter)

Item	Parameter
Temperature Range	Operating: -4°F to 122°F (-20°C to 50°C) Storage: -40°F to 140°F (-40°C to 60°C)

Weather Proof	IP54
Maximum Humidity	80%
Shipping Weight	Receiver Rx: 7.83lbs (3.55kg) Transmitter Tx: 6.11lbs (2.77kg)
Shipping Dimension	Receiver Rx: 28.7in(L) x 11.8in(W) x 3.4in(H) (73cm x 30cm x 8.6cm) Transmitter Tx: 19.5in(L) x 5.4in(W) x 5.4in(H) (49.5cm x 13.8cm x 13.8cm)

I. Accessories

Item	Parameter
What's In the Box	Receiver: - vScan-SE Receiver - Standard battery pack for alkaline batteries - USB-C data cable - User handbook Transmitter: - vScan Transmitter - Direct connection lead on tangle-free cable organizer (red and black leads, 10ft /3.5m long with crocodile clips) - 1 x T-type ground stake - 1 x connection magnets (UK only) - Tx foot stand - Carry bag (when both Receiver and Transmitter are purchased together - otherwise as accessory)
Optional Accessories	Receiver optional accessories: - Custom Lithium-ion rechargeable pack with 100-240V AC mains charger. Re-charging cycles approx. 500 times the life cycle. Battery life varies with temperature. - Sondes (D18, D38, and D64) - Receiver bag Transmitter optional accessories: - Custom Lithium-Ion battery pack and charger. Re-charging cycles are approximately 500 times the life cycle. Battery life varies with temperature. - 2" (50mm) transmitter clamp - 4" (100mm) transmitter clamp - 5" (125mm) transmitter clamp - Clamp extension rod - Live plug connector 240V AC (to connect and use a transmitter on lines carrying up to 240V AC) - Live cable connector 480V AC - 10m or 30m extension ground cable - Direct connection lead with heavy duty clips

J. Factory fitted options (not retrofit-able)

Item	Parameter
GPS Option (Factory Fitted)	- GPS option – enhances data logging and data management (The GPS module is internal and powered by the receiver's battery. Accuracy is typically better than 16ft/5m and is dependent on satellite availability). - Weight: 0.07lbs (30g) (may vary) - Satellite lock indicated by an icon on the display
Metal Locating Mode Option (M Version, Factory Fitted)	- Detects all ferromagnetic metal types - Sensitivity: 150mm (6") cast iron cover detectable at 250mm (10")

K. Warranty

The Vivax-Metrotech vScan System, excluding batteries, is warranted for two years from the date of invoice according to the Vivax-Metrotech warranty policy available on our website, www.vxmt.com. The vScan is a sophisticated unit and should only be repaired and serviced by your local VXMT office, distributor, or authorized service center.

- 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

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.

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