

A. The vScan System

The vScan receiver, and (optional) transmitter, are used for locating buried utilities. The vScanM incorporates all the vScan features plus a metal cover locating mode.

The system is designed for use by those of all skill levels from the new user to those with extensive experience. A comprehensive range of optional accessories are available.

Using the vScan & vScanM is intuitive, the user interface and controls are in line with the industry standard, while a suite of new features assist the User in achieving an accurate locate in a productive manner, and provides proof of the locate and the data collected. Features can be turned off or configured using MyvScan, which also handles transfer and management of data.

B. Typical Applications

- Locating to avoid known or unknown buried pipes and cables
- Locating to find, 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 quality of locate
- Locating buried metal covers (vScanM only)

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
Construction	High impact thermoplastic (ABS) injection molded 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 and metal detect antenna array (vScanM only)
Loudspeaker	Internal (fixed) loudspeaker and a removable speaker on a curly cord, complies with health and safety output level requirements.
Vibration Module	DC motor
Battery Options	- Alkaline batteries (6 x AA's) are standard - a custom Lithium ion rechargeable battery pack (7.2V, 5200mAh) with charger (Input: 100-240V AC, 50/60Hz, 1.0A; Output: 8.4V, 2.0A) is optional
Battery Life	- Alkaline – typically 12 hours intermittent use at 70°F (21°C)
External Connectors	- 1 x Mini USB socket for data transfer / programming - 1 x Socket for battery charger
Controls	- 2 x Pushbuttons - Rotary control - Paddle Control
Compliance/Approvals	- Complies with European standard CE (Directive 99/5/EC) <ul style="list-style-type: none"> • EN 55011 • EN 61000-4-2: A1 & A2 • EN 61000-4-3

	<ul style="list-style-type: none"> • 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
--	--

E. Receiver Operational

Item	Parameter
Information Displayed	<ul style="list-style-type: none"> - Signal strength - moving bar graph - Peak hold indicator. (indicates peak signal) - Mode indication (33kHz, 131kHz, Power, Radio, Sonde) (vScanM also includes metal cover location mode) - Compass (line direction indicator) - Line location - depth & current measurement - Sonde location - depth measurement - Battery condition - Speaker volume - Bluetooth and GPS status (if fitted) - Configuration menu & submenus - Customer definable start up screen - System self-test and calibration verification - Alert icons <ul style="list-style-type: none"> • Swing alert • Shallow line alert • Overhead signal alert • Signal overload alert • Metal locating mode active (vScanM only) • Service reminder action required alert (other alerts, more...)
Alert Notification Methods (all user configurable)	<ul style="list-style-type: none"> - Visual alert:- on screen warning - Audio - "Vibe" Vibration in handle - Shutdown unit
Locating Frequencies	<ul style="list-style-type: none"> - 33kHz, 131kHz, Power, Radio, Sonde, Metal Detect (vScanM only)
Controls	<ul style="list-style-type: none"> - On/off - Info (depth/current - configurable) - Rotary Gain Control - Paddle (mode and menu navigation)
Location Assist Tools (configurable)	<ul style="list-style-type: none"> - Orientation to line guidance in active mode
Data Logging	<ul style="list-style-type: none"> - Integrated data logging (time based) <ul style="list-style-type: none"> • Uses internal Real Time Clock • 4GB data storage (included)

	<ul style="list-style-type: none"> • High speed data transfer (via USB cable) • Data management system (using MyvScan desktop application) <ul style="list-style-type: none"> - All locate, date and time parameters stored for each data point (one second). - If using internal GPS (via Bluetooth), mapping data is also recorded with coordinates and date time. - Data transfer from vScan to MyvScan via the USB connection. 												
MyvScan (locator and data management desktop application)	<ul style="list-style-type: none"> - MyvScan can be download free from www.vivax-metrotech.com - MyvScan (desktop application) & vScan (locator) software update utility - Import log files from vScan - Manage the locator configuration and personalization - Manage and export data - Export formats: .xls, .csv, .shp, .kml, .jpg, .pdf, .xlsx - View data on GIS maps or Google Earth™ (Requires data to be stored with optional GPS co-ordinates) - Full manipulation of data for training identification or mapping purposes - Standard templates available - Print latest receiver Calibration check certificate - Personalize with Company/user name etc. - Install company specific start up screen - Lock out features/modes (require lock out dongle) 												
Performance	<ul style="list-style-type: none"> - Sensitivities <table border="1" style="margin-left: 20px;"> <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>Radio mode</td> <td>20µA</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> - Battery Life <ul style="list-style-type: none"> • Alkaline batteries (6 x AA cells) 12 hrs 	Mode	Sensitivity at 3.2ft (1m)	50Hz/Power mode	5mA	Radio mode	20µA	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												
Radio mode	20µA												
33kHz mode	15µA												
131kHz mode	10µA												
Metal detect	150mm (6") cast iron cover detectable at 250mm (10")												
Lateral Performance. (Using Single, undistorted signal source)	<p>Lateral accuracy:</p> <ul style="list-style-type: none"> - up to 9ft (3m) – 3% of depth - over 9ft (3m) – 5% of depth 												
Depth Performance (Using Single, undistorted signal source)	<p>Depth measurement accuracy:</p> <p>2.5% of depth. over 9ft (3m) – 5% of depth</p> <p>Current measurement – Accuracy +/- 5% of detected signal, measured in mA rms.</p> <p>Depth range: Dependent on strength of signal radiating to locator. Maximum practical line depth: 23ft (7m)</p>												

F. Transmitter Assembly

Item	Parameter
Construction	High impact ABS
Weight	3.3lbs (1.5kg) (with Li-ion batteries) 3.7lbs (1.7kg) (with Alkaline Batteries)
Dimensions	18.1 in 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 rechargeable battery
Batteries Options	- Standard battery pack – using 4 x alkaline “D” cells - a custom Lithium ion rechargeable battery pack (7.2V, 5200mAh) with charger (Input: 100-240V AC, 50/60Hz, 1.0A; Output: 8.4V, 2.0A) is optional
Battery Life	At 1 watt i.e. full output setting. - Alkaline – typically 30 hours continual use at 70°F (21°C)
Output Protection	Output protected against accidental connection to up to 240V AC
Approvals	- Complies with European standard CE (Directive 99/5/EC) <ul style="list-style-type: none"> • 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 • ETSI EN 300 330-2 : 2006 • ETSI EN 301 489-1 : 2005 • ETSI EN 301 489-3 : 2002 - Complies with FCC Rules Part 15 <ul style="list-style-type: none"> • CFR 47 part 2 • CFR 47 Part 15

G. Transmitter Operational

Item	Parameter
Transmits	- Simultaneously transmits a frequency suitable for general locating and higher frequency for small conductor locating - Transmitted signal can be set to “pulse” or “continuous”
Transmitting Frequency by Mode	- Induction mode <ul style="list-style-type: none"> • 32.8kHz (32,768Hz) - Connection mode <ul style="list-style-type: none"> • 32.8kHz (32,768Hz) • 131kHz (131,072Hz) • Both signals transmitted simultaneously - Clamp mode <ul style="list-style-type: none"> • 32.8kHz (32,768Hz) • 131kHz (131,072Hz) • Both signals 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	Combined power 1 watt
Output voltage	Maximum output voltage = 35V RMS
Output current	Maximum output current = 200mA RMS
Controls	- 4 x pushbuttons <ul style="list-style-type: none"> • On/Off • Speaker volume • Signal output level

	<ul style="list-style-type: none"> Pulse/continuous output signal
Visual Indication	2 x LED indicating low and high output level
Audio indication	<ul style="list-style-type: none"> 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 Rx

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	Rx: 7.83lbs (3.55kg) Tx: 6.11lbs (2.77kg)
Shipping Dimension	Rx: 28.7in(L) x 11.8in(W) x 3.4in(H) (73cm x 30cm x 8.6cm) Tx: 19.5in(L) x 5.4in(W) x 5.4in(H) (49.5cm x 13.8cm x 13.8cm)

I. Accessories

Item	Parameter
Standard Accessories	<p>Receiver Accessories:</p> <ul style="list-style-type: none"> USB data cable Carry bag (when both Rx & Tx are purchased together - otherwise an option) User handbook MyvScan configuration and data management utility download from www.vivax-metrotech.com <p>Transmitter Accessories:</p> <ul style="list-style-type: none"> Direct connection lead “dragon” on tangle-free carrier (2 cable 10ft (3.5m) long with crocodile clips) 1 x T type ground stake 2 x connection magnets (UK market only) Tx foot stand Carry bag (when both Rx & Tx are purchased together - otherwise an option)
Optional Accessories	<p>Receiver Optional Accessories:</p> <ul style="list-style-type: none"> Custom Lithium ion rechargeable pack with, 100-240V AC mains charger – typically 40 hours 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. Sondes - D18, D38 and D64 12V DC charging lead <p>Transmitter Optional Accessories:</p> <ul style="list-style-type: none"> Custom Lithium Ion battery pack and charger – typically 28 hours continual use at 70°F (21°C). Re-charging cycles approx. 500 times life cycle. Battery life varies with temperature. 2” (50mm) transmitter clamp 4” (100mm) transmitter clamp 5” (125mm) transmitter clamp Clamp extension rod

	<ul style="list-style-type: none"> - Live plug connector (240V AC) (to connect and use transmitter on lines carrying up to 240V AC) - Live cable connector (480V AC) - 10m extension ground cable
--	--

J. Factory fitted options (not retrofit-able)

Item	Parameter
GPS Factory Fitted Option	<ul style="list-style-type: none"> - GPS module (internal) – enhances data logging and data management - Overview:-The GPS option is internal and powered from the receiver's battery. Accuracy is typically better than 5m (16ft) and is dependent on satellite availability. - Weight:-0.07lbs (30g) (May vary depending on manufacturers availability) - Indication:-Satellite lock indicated by icon on the display.
Blue tooth Factory Fitted Option	<ul style="list-style-type: none"> - Bluetooth module (for communicating to external devices such as high accuracy GPS)
Metal Cover locator (vScanM)	<ul style="list-style-type: none"> - Detects all metal types. - Sensitivity:- 150mm (6") cast iron cover detectable at 250mm (10")

K. Warranty

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

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

Vivax-Metrotech Corp. (Headquarters)
3251 Olcott Street, Santa Clara, CA 95054, USA

T/Free: +1-800-446-3392
Tel: +1-408-734-1400
Fax: +1-408-734-1415
Email: sales@vxmt.com
Website: www.vivax-metrotech.com
Please visit www.vxmt.com for other locations

Vivax-Metrotech Ltd. (UK)
Unit 18-19, Woodside Road,
South Marston Industrial Estate,
Swindon, SN3 4WA, UK.

Free Phone: 0800 0281811
Tel: +44(0)1793 88679
Email: salesUK@vxmt.com