

SML2 | Smart RFID Electronic Marker Locator

The **SML2 Smart RFID Electronic Marker Locator** is the next-generation equipment for “**Permanent Marking of Buried Pipe & Cable Utilities**”, when utilized with the **KOMPLEX RFID Markers**.

Based on an **Integrated industrial-grade Android 14 Mobile computing device** with **REAL-TIME Cloud Connectivity**, the SML2 equipment is **designed for ON FIELD acquisition of RFID Marker location and REAL TIME GIS Map & database creation**, at the time of **RFID Marker installation**.

A fully Automated RFID Marker solution - **No need to program markers in office** or bring equipment back to office for data uploads.

Features:

- **Integrated Mobile PC: High power** Octa-core 2.2 GHz, 6GB RAM
- **Built in Barcode scanner:** Immediate scanning of RFID “ID” prior installation /backfilling
- **Built-In GPS:** GNSS Coordinate Acquisition for Mapping of RFID Markers Installed with Buried Utilities for Automatic GIS creation
- **Built in Navigation:** Access Marker database directly in field to navigate to marker
- **Unlimited Data Storage:** Unlimited RFID Markers data can be stored & upto 2000 images of where marker installed can be stored, based on **64GB data storage**
- **Built in Camera:** Photo Documentation by acquiring images of location where marker installed
- **“Built in 2G/3G/4G/5G, Wi-Fi & Bluetooth Communications”** Upload of RFID Marker data to server In Field - In Real Time, and without need to bring the equipment back to office
- **Connectivity:** Potentially utilise with Bluetooth connectivity to an external GNSS RTK receiver for coordinate acquisition with 2 ~5 cms accuracy.

Designed for **accurate marking of underground utilities** or **navigating back to existing utility infrastructure**, the SML2 transforms manual detection into a **digitally empowered, field - Ready solution**—for **HIGHLY EFFICIENT** Operations & Maintenance of buried utility infrastructure.



TYPES OF OPERATING FREQUENCY

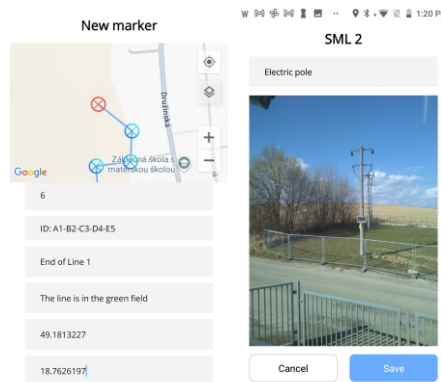
Operating frequency	Type of device	Color of marker
83.0 kHz	Gas pipelines	  
101.4 kHz	Optical cables	  
121.6 kHz	Sewage pipelines	  
145.7 kHz	Water pipelines	  
134.0 kHz, 169.8 kHz	Energetics cables	  

New Installation

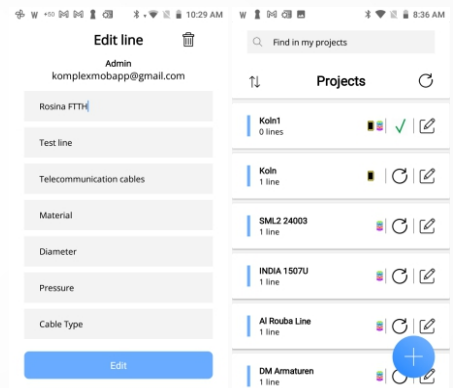
1- Click Acquisition of RFID Marker "ID" being installed



Take image of where RFID Marker installed

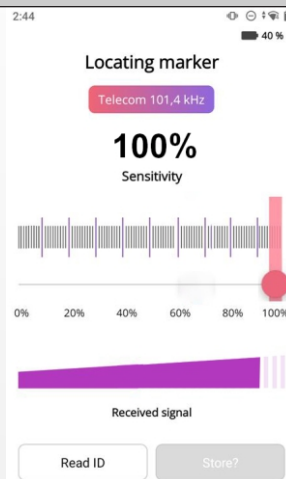


Define Project, and line attributes of RFID Marker installed.

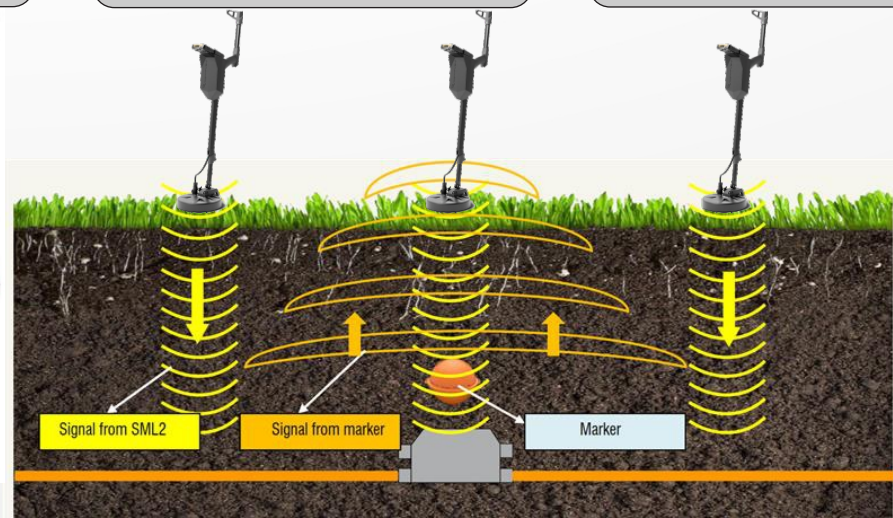


Detection of Existing Markers

Precision Detection with Digital Sensitivity control & Acquisition of ID of the Smart RFID Marker.



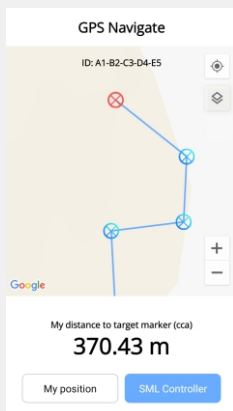
Smart Installation Marker ID Acquired even if RFID marker is buried.



Smart Detection Marker locator provides ID & Attributes on Detection.

Navigation

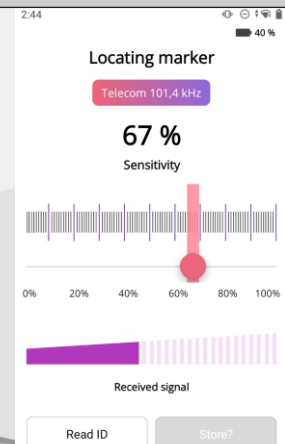
Marker Database Accessible Directly in Field (even offline)



Navigation Built In -Navigate to Any Marker in Database.



Precise Detection



Steps, usage & illustration :

The **SML2** operates as a **Smart RFID marker detection system** integrated with an industrial Android smartphone. Its workflow combines **RFID Marker technology, Built in GPS, Bluetooth,** and **Real Time cloud-based data management.**

1. Data Logging & Storage:

After installation of RFID marker, you can **store** the marker into a **project/line structure** with:

- GPS coordinates
- Marker ID
- Description
- Photos
- Custom data

2. Cloud Sync:

- Data is synced to **markerdatabase.net** if internet is available.
- **Offline mode allows local Storage with sync later**

3. Navigation:

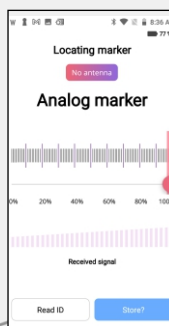
Integrated **GPS and map features** allow you to **navigate back to markers** using stored coordinates.

4. Marker Detection:

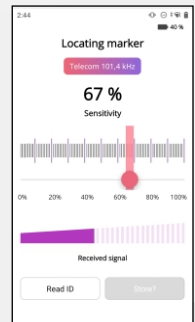
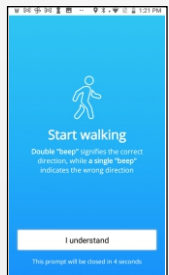
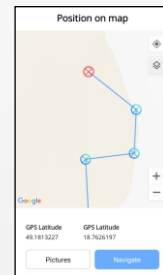
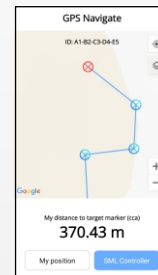
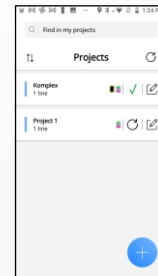
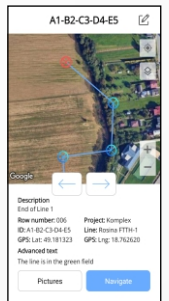
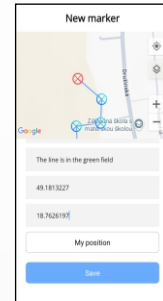
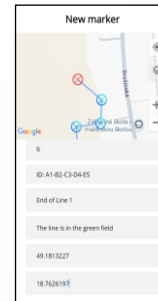
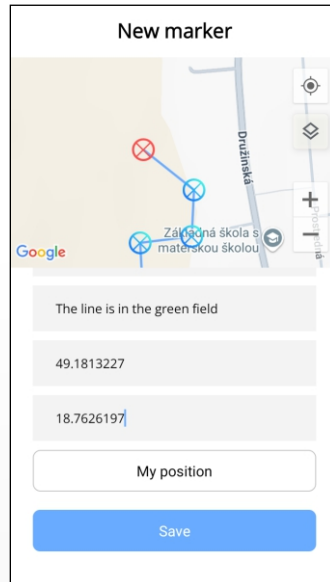
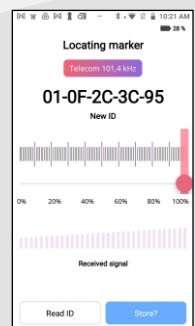
- **"LOCATE"** in the app to start scanning.
- The telescopic antenna detects **RFID signals** from underground markers.
- Signal strength is shown on-screen in a graph to guide precise marker positioning.

5. Smart vs Analog Markers:

Analog Marker: No RFID – system displays "Analog Marker" if ID read fails.



Smart RFID Marker: Detects a unique RFID ID, which is read and displayed.



SML2 : The Most Advanced RFID Marker Locater Ever.

Feature	Specification
Control Unit	Industrial Android smartphone
RFID Capability	Supports RFID Smart Markers & Analog
Data Storage	Cloud-based sync + Local memory
Marker Identification	Full Smart Marker ID read with QR/barcode
Bluetooth Connectivity	Full Bluetooth connection with control unit
User Interface	Touchscreen GUI via Android app
GPS & Mapping	Advanced GPS, Maps, Navigation
Photo Capture & Attachments	Take photos, attach to marker records
Database Management	Structured Projects, Lines, Markers hierarchy
Search & Filters	Fast ID lookup, filters, map views
Battery Life	12+ hours, replaceable Li-ion battery
Weight & Portability	Lighter and adjustable telescopic antenna
Marker Sync	Auto or manual sync to Marker Database
Operating System	Android 14
Operating Frequencies*	SML G2 - 83.0 kHz, SML T2 - 101.4 kHz, SML S2 - 121.6 kHz, SML E2 - 134.0 kHz, SML W2- 145.7 kHz
CPU	Octa-core 2.2 Ghz
Memory	64 GB Flash / 6 GB RAM
Expansion Slot	Micro SD card slot
SIM / SAM	Dual Nano SIM
Wireless Communication	2G/3G/4G/5G, Wifi, Bluetooth®
GPS	GPS, AGPS, GLONASS, BeiDou, Galileo
Barcode Scanning	Integrated barcode scanner
Camera	48 MP rear camera
Display	6.5" HD+ touch screen
Antenna Bar	Telescopic, adjustable from 85 cm to 116 cm
Battery & Battery Life	7000 mAH rechargeable battery
Package Size (HXWXD), Weight	26 x 37 x 90 cm; Max 2.5kg

Note*: For each frequency is necessary to connect corresponding antenna