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 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 1.8 GHz, 4GB RAM
- **Built in Laser Barcode scanner:** Immediate scanning of RFID "ID" prior installation /backfilling
- **Built-In GPS:** GNSS Coordinate Acquistion 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 **16GB data storage**
- **Built in Camera:** Photo Documentation by acquiring images of location where marker installed
- **Built in Cellular & Wi-Fi 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.
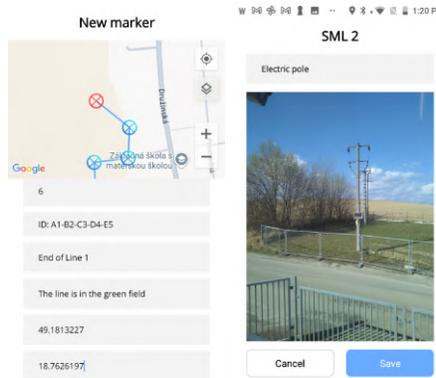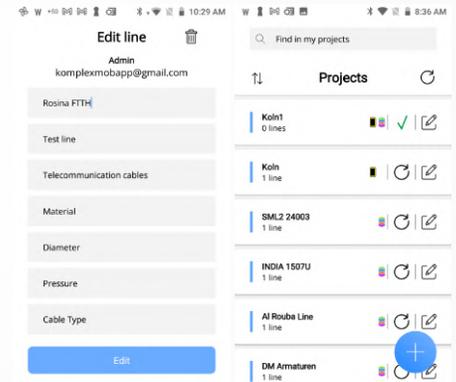
New Installation

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

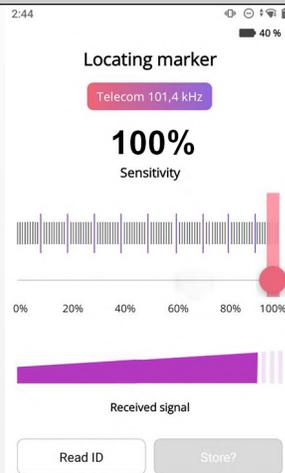**Take image of where RFID Marker installed**

Define Project, and line attributes of RFID Marker installed.
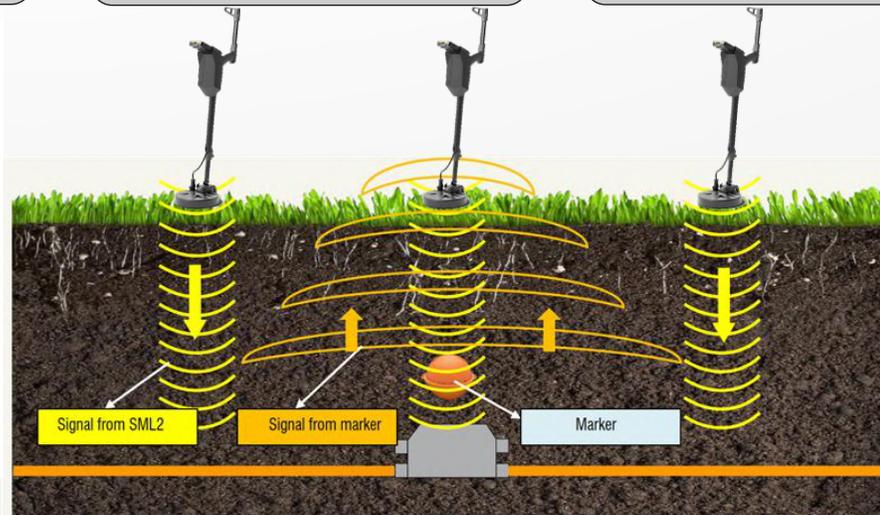

Detection of Existing Markers

Precision Detection with Digital Sensitivity control & Acquisition of ID of the Smart RFID Marker.
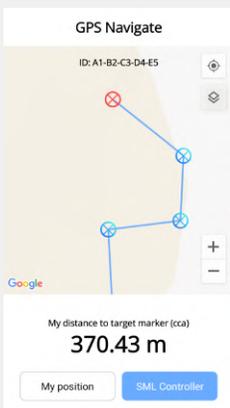
Smart Installation Marker ID Acquired even if RFID marker is buried.

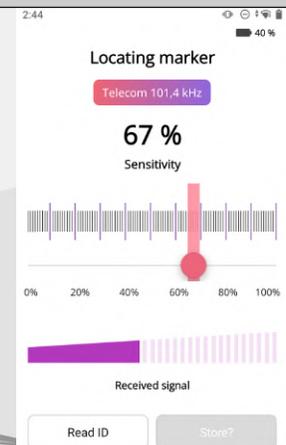**Smart Detection Marker locator provides ID & Attributes on Detection.**

Signal from SML2   Signal from marker   Marker

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.**
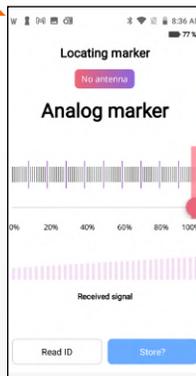
1. Marker Detection:

- "**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.
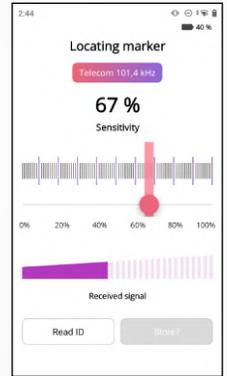
2. Smart vs Analog Markers:

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.

3. Data Logging & Storage:

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

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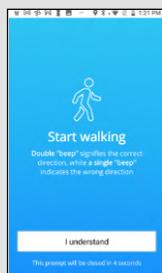- Marker ID
- Description
- Photos
- Custom data

4. Cloud Sync:

- Data is synced to **markerdatabase.net** if internet is available.
- **Offline mode allows local storage with sync later.**
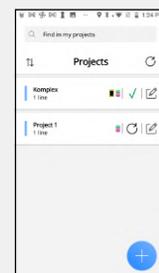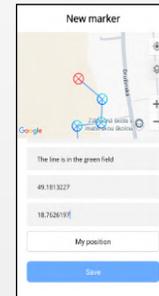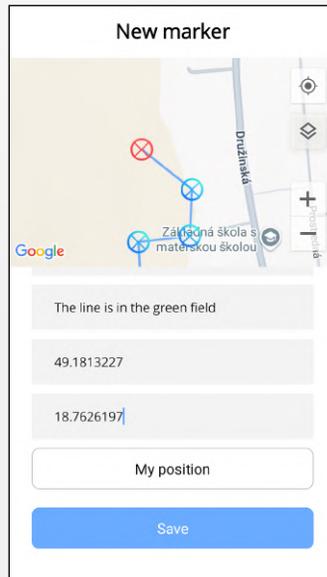
5. Navigation:

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

Data is stored in memory.

Data is stored on server.

SML2 : The Most Advanced RFID Marker Locater Ever.

Feature	Specification
Control Unit	Industrial Android CIPHERLAB 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
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 1.8 Ghz
Memory	16 GB Flash / 4 GB RAM
Expansion Slot	Micro SD card slot
SIM / SAM	Dual SIM + 1 SAM slot
Wireless Communication	WWAN (2G/3G/4G), WLAN, WPAN, Bluetooth®
GPS	Built-in GPS, AGPS, GLONASS, BeiDou, Galileo
Barcode Scanning	Integrated 2D imager
Camera	13 MP autofocus, F2.0
Display	4.7" HD (720 x 1280) Colour touch screen, glove & stylus support
Antenna Bar	Telescopic, adjustable from 85 cm to 116 cm
Battery & Battery Life	≥ 12 hours, Rechargeable Li-ion 3.8V 4000 mAh / 3.75V 5300 mAh
Package Size (HXWXD), Weight	26 x 37 x 90 cm; Max 2.5kg

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