Operation Manual

CK-GTR650 Localizer of Electric marker

Contents

1. Introduction

CK-GTR650 is a kind of localizer of underground electric marker based on radio frequency identification technology. Through the non-digging method, the localizer reads the electric markers that were embedded near underground pipelines and acquires the pipeline information stored in markers so as to realize the objectives of accurate searching of pipelines and digital management of underground pipelines.

The localizer has stable performance and simple operation. The most popular Android operation system now is preassembled, facilitating clients to conduct secondary development. The localizer can be broadly applied to location identifying and digital management of underground pipelines like electricity, communication, gas, etc.

2 Performance Parameters

2.1 Product Properties

Table 1 Product Properties

Operation system	Android 5.1
CPU	MTK6735
Main frequency	1.0~2.0GHZ
Display screen	5.0-inch TFT; resolving power: 540*960
Touch screen	Industrial capacitive touch screen
Memory	8 GB ROM + 1 GB RAM
Network connection	4G+WIFI+Bluetooth
Location	GPS/The Big Dipper
RFID working frequency	125KHZ
Detection distance	260cm① to the maximum (related to types and using environment of markers)
Location accuracy	X-Y:+/-10cm; Z:+/-10cm①
Battery	12V/5000maH Polymer lithium battery
Power consumption	Operative mode: less than 1200mA; standby mode: less than 500μA
Standby time	6 months
Charging voltage	12V
Support network	China Mobile, China Unicom, China Telecom

① The maximum detection distance and location accuracy are measured under the condition that there are no disturbance signals around.

2.2 Physical and Environmental Properties

Table 2 Physical and Environmental Properties

Operation temperature	-20℃~60℃
Storage temperature	-25℃~70℃
Humidity	5%~95% non-condensing status
Weight	2.6Kg
Falling test	Freely falling from 1.2m
ESD performance	Air discharge±15KV, contact discharge±8KV
Sealing standard	IP65

3 Quick Start

3.1 Button and Interface Introduction

3-1 按键及接口说明

3.2 Quick Initiation of Scanning

When the system is in the shutdown mode, press button can quickly initiate the equipment into the scanning mode.

Operation steps:

- In shutdown mode, press button shortly; the equipment enters standby mode and the green mode indicator is on.
- In standby mode, press button shortly; the equipment enters scanning mode and the green mode indicator twinkles.

- In scanning mode, press button shortly; the equipment enters standby mode and the green mode indicator is on.

3.3 Equipment Power-off

In any mode, press button longer, the equipment enters shutdown mode; the shutdown method is power shutdown, which can simultaneously shut down scanning function and Android system of markers.

In non-scanning mode, if there is no new operation on the equipment for more than 60s, the equipment will automatically enter shutdown mode.

3.4 Power-on and Power-off of Android System

- In shutdown mode, press button longer; the Android system is switched on.
- In boot-up mode, press button longer; the Android system is switched off.

3.5 Installation of SIM Card

SIM card of standard specification (25mm×15mm) is installed onto SIM card seat; SIM cards of other specifications can be installed through transfer seats.

3.6 Equipment Charging

Charging voltage ranges from 12V to 18V; the equipment can be charged through matching chargers or directly through car cigar lighter.

3.7 Use of Management APP

APP can be applied to detect and identify marks, to display data, geographical locations and GPS coordinates of markers.

4. Initiation of Management APP

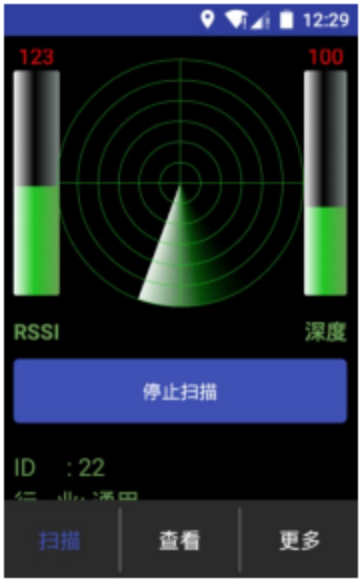
Switch on; enter the system; click to open "SCAN" management software of markers; the interface of the software is shown as below:

4-1 the interface of management software of APP

4.1 Detect Markers

After opening APP, click the button of "start to scan" in the software or press the quick-start

button of initiating scanning on the physical keyboard; the software starts to scan markers.



4-2 scanning status of the software

If the localizer detects the identifier, stored information in the identifier and signal strength and burying depth of marks will be displayed on the software.

moving the localizer, when RSSI value displayed on the software reaches the maximum value, the locates right below the localizer.

4.2 Write data into markers

After scanning the identifier, click the button of "stop scanning" on the software; the identifier can be edited again, as shown in the following figure:

4-3 the interface of editing the identifier

Click the button of "editing geographical marks" on the software; enter the editing page of the identifier. Through the drop-down method, after choosing the type of the identifier, click the button of "write information into geographical marks"; the localizer writes data into the identifier.

Attention: in writing identifier operation, the distance between the identifier and the localizer

antenna must not surpass 60cm; otherwise, data write-in will fail.

4-4 the page of writing geographical marks

4.3 Record marker information

On the page of editing the identifier, after clicking "save geographical mark information to local", APP will store the current identifier information and GPS coordinate into the database.

4-5 the interface of storing identifier information

4.4 Check Recorded Information

On the first page of APP, click button of "check"; the information of the identifier that was saved to local can be checked, as shown in the following figure:

4-6 check marker information

Click the information of a certain identifier; enter the management page of the individual identifier; on this page, maintenance records and other information of markers can be added as shown in the following figure:

4-8 the identifier location displayed on the map

Click button of "map" at the upper right corner of APP; the geographical location of the identifier can be displayed on the map as shown in the following figure:

4.5 Edit Identifier Templates

Use USB connecting localizer to open the folder of Landmarker in the computer; open the document of "config" in txt; through changing fields in the document, selective markers displayed in APP can be modified to be written in the contents.

4-9 APP 设置页面

4.6 More Settings

On the first page of APP, click “more”; enter the software setting page as shown in the following figure:

4-9 APP setting page

- Locking of marked data

After opening the function, localizer will lock the identifier data while it executes the write-in operation on the identifier; the locked identifier cannot be written in again.

- Switch of warning tones

After opening the function, sound hint will appear when the localizer finishes scanning the identifier.

- Volume of warning tones

The function is used to set the volume of warning tones; right-pulling of the button means warning tone increase while left-pulling of the button means warning tone decrease.

- Export data to SD card

After clicking the function button, identifier data stored in the database will be stored in the folder of Landmarker in els and users can use computers to export the data.

5. Attentions

1. The product is an electric product that should be transported and kept like regular electrical equipment.

2. The reader should be protected from falling from high places or impacting.
3. The reader must not be placed in high-temperature, wet or corrosive environment.
4. Only professional staff can open the shell of the reader.
5. The power adapter that is provided by the original plant should be used for charging.

6. Packing List

No.	Name
1	One power adapter
2	One car charging line
3	One transfer seat of SIM card
	One instruction manual