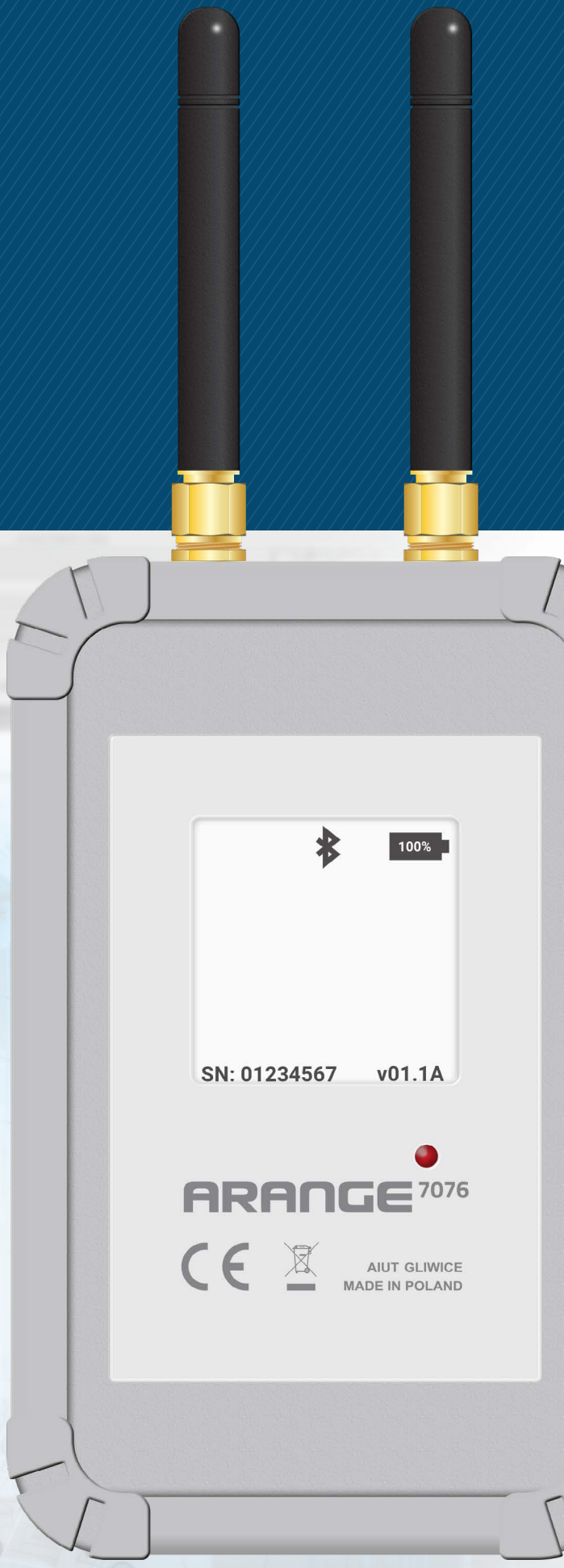
ARANGE 7076

Operation Manual



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1. PRECAUTIONS

- The device should be stored in a dry place, free from oil, water, moisture, and dust that may affect the safe operation of the device. Keep the device away from fire, extreme temperatures, and chemicals.
- Do not use harsh chemicals, cleaning solvents, or strong detergents to clean the device.
- The device should be used in accordance with its intended purpose. To guarantee proper BLE connection, the distance between the device and the connected terminal should not exceed 10 meters.
- Do not open the cover. The device can be serviced only by the manufacturer except for the remote diagnosis of the device in concert with the manufacturer.
- Charge the device at temperatures between 0 to 45^{0}C. If the allowed temperature is exceeded, please stop the charging.
- The device should operate at temperatures between -10^{0}C to 50^{0}C. Yet please note that if the temperature is below 0^{0}C the e-ink screen may not refresh.
- The device contains 1 Li-Poly cell, 1600mAh. Comply with the regulations regarding the transportation of the device.
- Scraping, rubbing, or dropping the device may result in its damage.
- Any abnormal functioning of the device should be reported to the manufacturer.
- Make sure that the ARANGE is not paired in the phone settings and is visible among the available connection methods in the SITA application settings.
- For safety reasons, if the charging process is interrupted when the battery level exceeds 90%, it is recommended to resume the process only when the battery level drops below 90%.

2. ENVIRONMENT

Do not throw away the device with the normal household waste at the end of its life, but hand it in at an official collection point for recycling. By doing this you help to preserve the environment (Fig.1). Always remove the battery before you discard or hand in the device at an official collection point. Dispose of the battery at an official collection point for batteries (Fig.2).


Fig. 1


Fig. 2

CE

ENVIRONMENTAL PARAMETERS & REGULATIONS

RED – Council Directive 2014/53/EU and harmonized standards:
ETSI EN 301 489-1 V2.1.1
ETSI EN 301 489-3 V2.1.1
ETSI EN 301 489-17 V3.1.1
ETSI EN 300 220-2 V3.1.1
ETSI EN 300 328 V2.1.1

3. MANUFACTURER

Designed & manufactured in Poland
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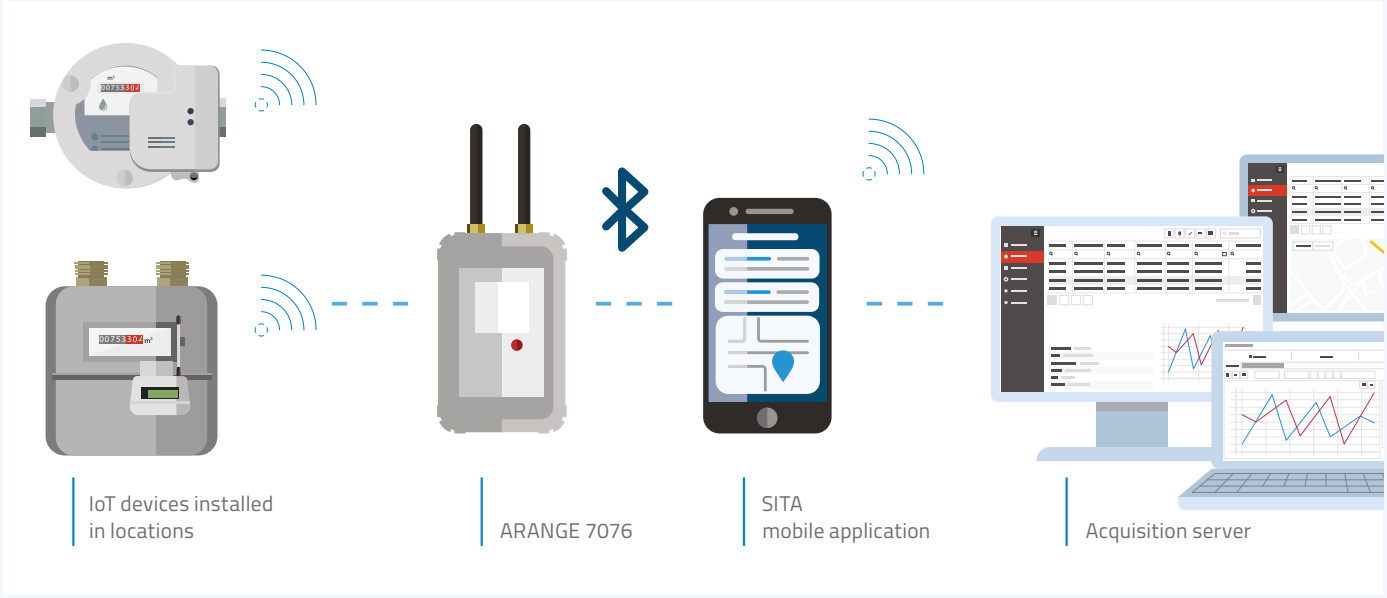
4. GENERAL DESCRIPTION

ARANGE 7076 is a smart module supporting various local wireless technologies. Its flexible design makes it the ideal device for bidirectional communication with IoT devices and 3rd party smart meters within Smart Metering Systems. With Bluetooth technology, ARANGE 7076 connects securely and wirelessly with most Bluetooth (v. 4.1 or higher) enabled smartphones available in the market and enables convenient configuration and walk-by readouts.
ARANGE 7076 collects radio frames from IoT devices and forwards them securely and wirelessly through Bluetooth interface to Bluetooth Low Energy enabled smartphone or tablet.
Used for data collection, automated walk-by procedure, on-site configuration, and installation of IoT devices.



5. TECHNICAL PARAMETERS

Environmental parameters

- Operating temperature: -10°C to +50°C*
- Charging temperature: 0°C to +45°C
- CE (including RED: 2014/53/UE)

Low power communication

- Bluetooth Low Energy
  - maximum output power: +8 dBm
  - IMR WAN 3.1 protocol with AES encryption
- RF radio
  - 2 x SRD 868 MHz
  - maximum output power: +22 dBm
  - range: 300 m
  - IMR LAN 3 protocol
  - WM-BUS mode T1, T2, C1, C2

HMI interface

- E-ink display, 200x200 px
- Reset feature triggered by a magnet

Housing

- Dimensions: 108 mm x 68 mm x 23 mm
- Customized overprint
- Designed for outdoor operation

Power supply

- Lithium-poly battery (1600 mAh)
- Up to 16 hours of operation on a single charge (up to 1 month in stand-by mode)
- Charging time: 3 hours
- Power adapter 230 V, 2 A, USB type micro B

6. THE STRUCTURE OF THE DEVICE

RADIO ANTENNAS (SMA 863-870MHZ)*

Various antennas serve different purposes, each tailored to specific needs. From a functional standpoint, the suggested configurations are as follows:

DRIVE-BY reading: left antenna large, right antenna medium

WALK-BY reading: left antenna medium, right antenna medium

SERVICE operation: left antenna small, right antenna small

* Proportions of the presented antenna sizes are not maintained.

DISPLAY

1. Radio status
   - Active radio module
   - ↑ Radio frame transmitted
   - ↓ Radio frame received
2. BLE communication
   - The device is ready to connect
   - The device is connected
3. The device is charging
4. Battery status
5. Serial number of the device
6. Firmware version of the device

LED

- Red LED (blinking) - the device is charging
- Green LED (solid) - the device is charged
- Blue LED (blinking) - BLE connection is active

7. PACKAGE CONTENT

The ARANGE 7076 device is delivered in a cardboard box, which also includes the required accessories. The specific contents of the box may vary based on the order's specifications.

NOTE ARANGE 7076 can operate with an external car antenna for walk-by/drive-by readings (the car antenna is not included in the set). For walk-by/drive-by readings two ANT GSM SMA GSM-ANT825-1 antennas are required.

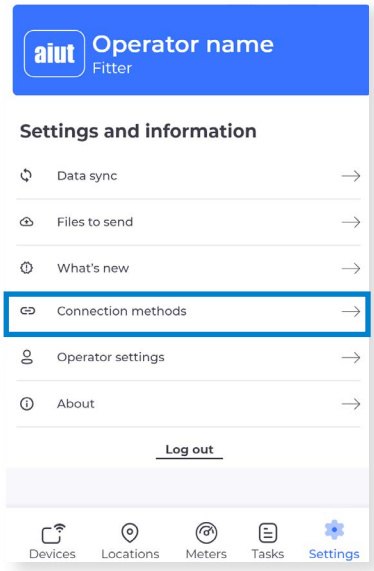
1. ARANGE 7076-0204
2. Mini Antenna SMA SRD860 (863-870MHz)
3. Car phone holder
4. Charger
5. Belt clip holder
6. Wire
7. Belt clip

8. OPERATION OF THE DEVICE

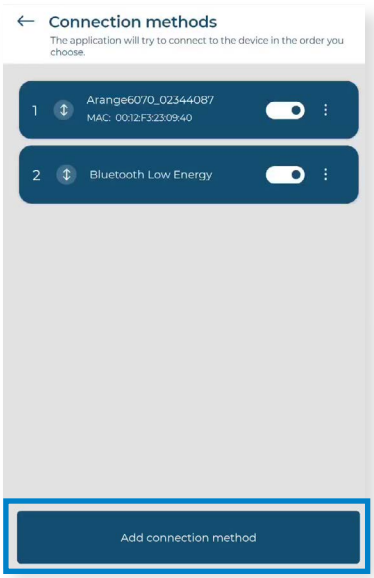
ARANGE 7076 enables bidirectional communication with IoT devices installed in various locations. It establishes a Bluetooth connection to a mobile device equipped with the SITA application.
ARANGE 7076 receives radio transmissions from data loggers of IoT devices that operate within a selected radio frequency band. The data is then transferred to the collector's terminal, which is directly managed by acquisition software.

Before starting any procedure with the ARANGE 7076 device, please ensure that the ARANGE is not paired in the phone settings. Subsequently, verify that your ARANGE 7076 device is visible among the available connection methods in the SITA application settings.

1 In *Settings* tab select the *Connection methods* option.

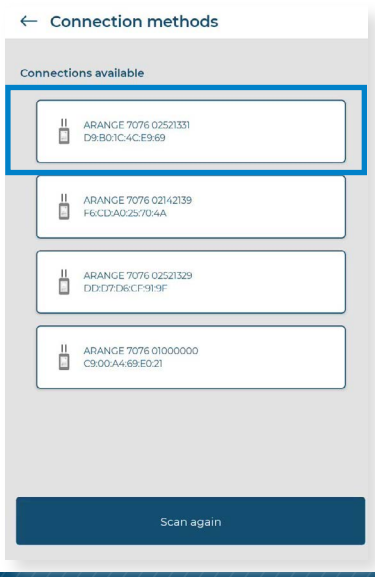


2 Press *Add connection method.*



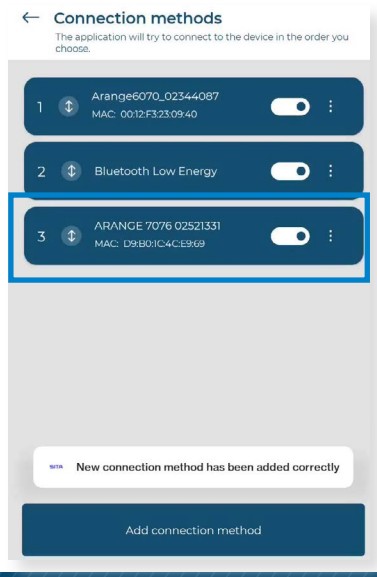
3 Press *ARANGE 7076.*

4 Check the serial number and select your ARANGE from the list.



If your ARANGE is not in the list, press *Scan again.*

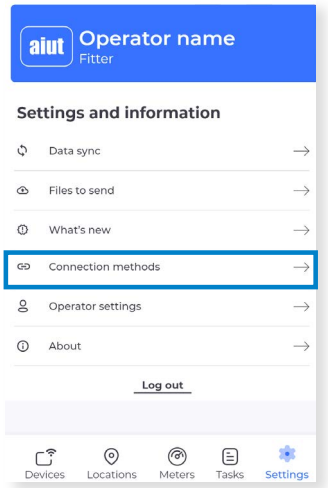
5 The newly added ARANGE is displayed in the list.



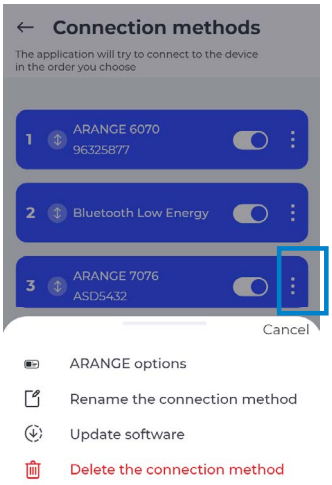
9. ARANGE SETTINGS IN SITA APPLICATION

Frequency settings

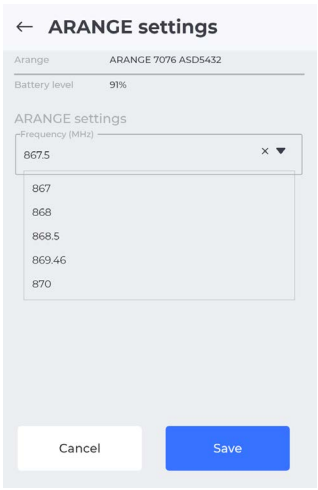
1 In *Settings* tab select the *Connection methods* option.



2 Press the three-dot icon and choose ARANGE options.



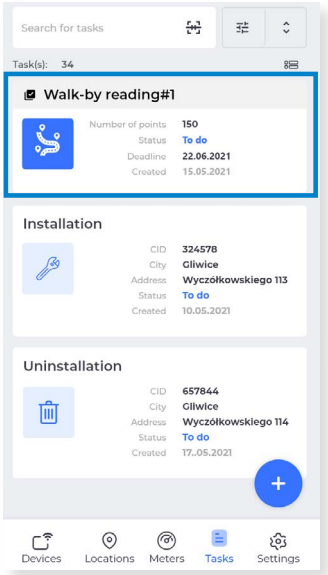
3 Unfold the *Frequency* list and choose the desired frequency.



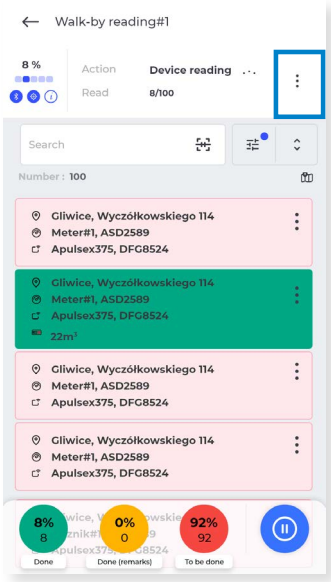
ARANGE settings in walk-by reading

In the SITA application, it is possible to change the frequency of the ARANGE 7076 and set the reading time parameters of the walk-by readings.

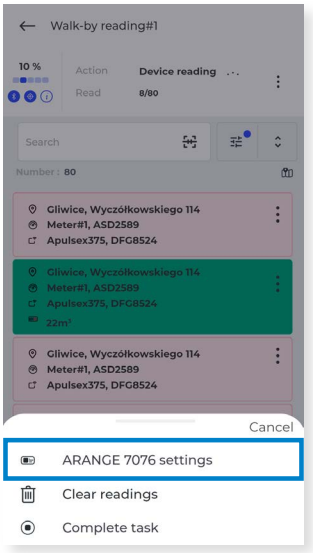
1 In *Tasks* tab select the walk-by reading task.



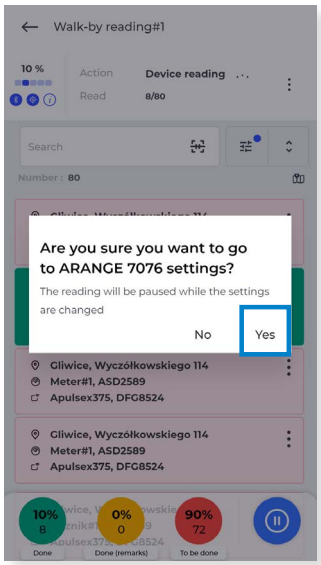
2 Press the three dot icon in the header.



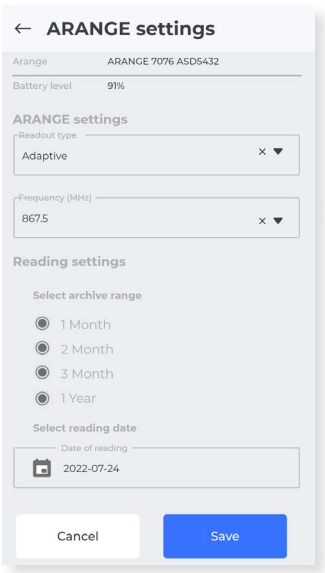
3 Press *ARANGE 7076 settings*.



4 Press *Yes* to confirm and continue the procedure.



5 Set the new parameters and press *Save* to confirm.



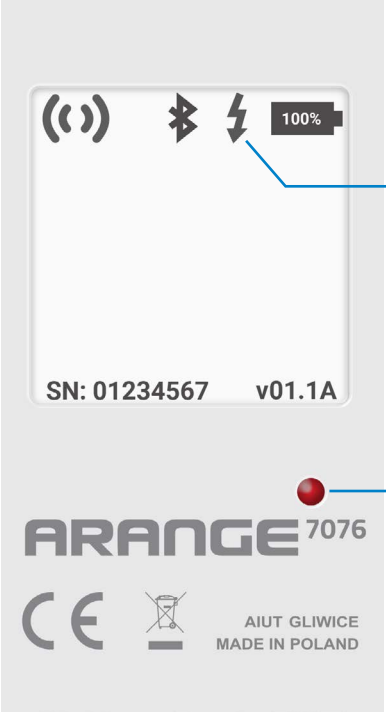
Readout type - unfold the list to choose the readout type. For example, *Adaptive Readout* (gathering data from all devices sending frames in the area) or *Geo Adaptive* (gathering data from devices in the area based on GPS coordinates).

Frequency (MHz) - unfold the frequency list and choose the desired frequency.

Select archive range - choose a time range from which readings are to be collected, e.g.:
1 Month - the application collects data from devices generated within the last month.
3 Month - the application collects data from devices generated within the last three months.

Select reading date - select the date from which readings are to be collected

10. CHARGING



ARANGE 7076 is charged with 230 V, 2 A, USB type micro B charger. The current charging status is indicated by the LED located under the display and by the lighting icon on the display:

Lighting icon is active - the device is charging

- **Red LED (blinking)** - the device is charging
- **Green LED (solid)** - the device is charged

NOTE ARANGE 7076 has no power-off function. It can operate in standby mode for up to 1 month on one charge (no BT, no radio connection).

11. DEVICE RESET

The device provides a reset function for troubleshooting purposes (e.g. connection problems, suspected malfunction). To reset the device, just attach the supplied ST M100 magnet that comes with the ARANGE to the designated spot illustrated in the picture for 15 seconds. Following the initial 5 seconds, a reset countdown will start.

* magnet ST M100 - supplied with the ARANGE.