

SmartKitchen ToolBox User Guide

Document Change History

Version	Date	Author	Description of change
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1. Installation and login

1.1. System requirements

- A mobile device running Android 10.0 or higher operating system.
- Working internet connection: Some of the application's features may work without an internet connection, but the user will not be able to log in or update the device software without a working internet connection.

1.2. Downloading and installing

- SmartKitchen emails a QR code that facilitates download.
- Allow installation from unknown sources in your phone and install application.

1.3. Signing in

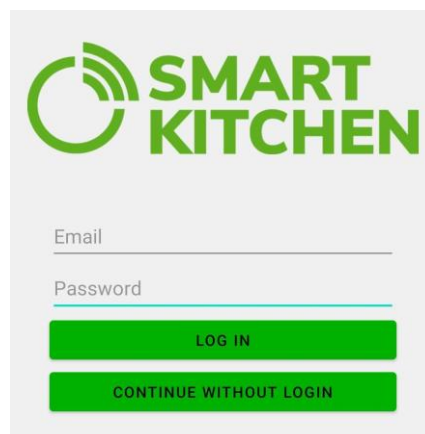


Figure 1. Login screen

- Fill in your ioliving/smartkitchen admin account email address and password to corresponding fields and press “LOG IN”.
- If you do not have ioliving/smartkitchen admin account you can press “CONTINUE WITHOUT LOGIN”. If you do not have an ioliving/smartkitchen admin account, you can select "CONTINUE WITHOUT LOGIN". This will grant you limited access to certain functionalities within the application, allowing you to explore some of its capabilities without full privileges.
- If you require admin-level functionalities for comprehensive device management and advanced settings, please contact helpdesk@smartkitchen.solution to request an admin account.

2. Checking device status

- After logging in, you will be taken to the main screen where you can see all the tools that are permitted on your account.



Figure 2. Main screen

- Click on “BLE Scanner” on the main screen. This opens a view that shows IOLiving/SmartKitchen devices on the BLE range.

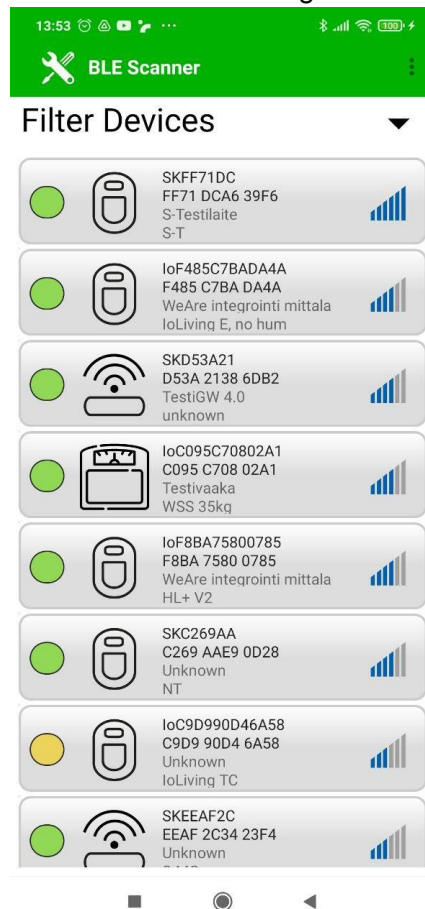


Figure 3. Device screen

- Each device is shown as its own card that contains information about the device.

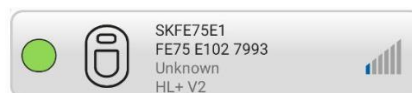


Figure 4. Device card

Device Information Fields:

- **Device Health Status:** Located on the left side of each card, this circle provides a quick visual representation of the device's current operational status.
 - Green Circle indicates that the device is functioning correctly and is in good health.
 - Red Circle suggests that something is wrong with the device. This could be a connectivity issue, a malfunction, or another problem that needs immediate attention.
 - Yellow Circle appears only on battery-operated devices to indicate that the battery level is low and needs recharging or replacement soon.
- **Device Type:** Adjacent to the Device Health Status circle, you'll find an icon that indicates the type of device represented by the card:



Gateway: Indicates that the device serves as a gateway.



Repeater: Indicates that the device functions as a repeater, extending the range of your network by relaying signals between other devices.



Scanner: Denotes a device that scans other SmartKitchen devices within range.



Sensor: Shows that the device is a sensor, responsible for gathering specific types of data like temperature, humidity, or other measurements. Additional information about the specific type of sensor is provided at the bottom of the card in a text field (HL+ V2 in figure 4).



Scale: Indicates that the device is a SmartKitchen scale.



Unknown: Indicates that the application cannot identify the type of the device.

- **Device name and MAC address (id):** The device name (SKFE75E1) and MAC address (FE75 E102 7993) are key identifiers that are automatically pulled from the device's Bluetooth Low Energy (BLE) advertisement data. The MAC address serves as a unique identifier for each device within the Smart Kitchen service.
- **Device nickname:** Below the MAC address on each device card is a textfield that may contain plain-language descriptions that can offer additional context about the device.
- **BLE Signal Strength:** On the right side of each device card, you'll see an icon representing the device's Bluetooth Low Energy (BLE) signal strength, also known as RSSI (Received Signal Strength Indicator). This gives you an idea of the device's proximity to your mobile device.
- By clicking on the device card, the user is taken to the device status screen, which contains additional information about the device. Depending on the type of device, this can include measurement data, precise battery level, self-test results, etc. (Please note

that this screen may differ from Figure 5. Example. Status and measurements are different for different types of devices.)



Figure 5. Device status screen

- In the upper right corner of the Device Status Screen, you'll find an icon with three vertical dots (:). Clicking on this icon opens a drop-down menu that provides access to [execute commands](#) on the device, [adjust device's settings \(Parameters\)](#) and get a more detailed status view.

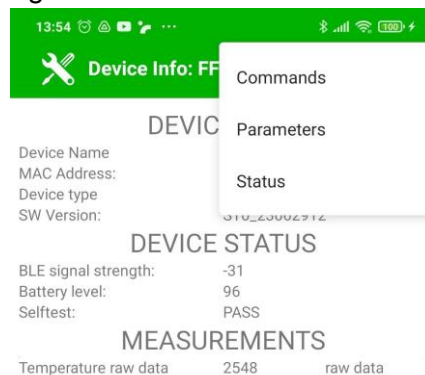


Figure 6. Device status screen with menu

3. Adjusting device settings (parameters)

- **Note:** Adjusting device settings is only accessible to logged-in users who have the appropriate permissions.
- When selecting 'Parameters' from the menu in the Device Status Screen, the Parameters Screen will appear, allowing you to customize various device settings.
- **Note:** The example image below may not show the complete list of available parameters. The actual parameters you can modify may vary depending on the specific type of device you are interacting with.

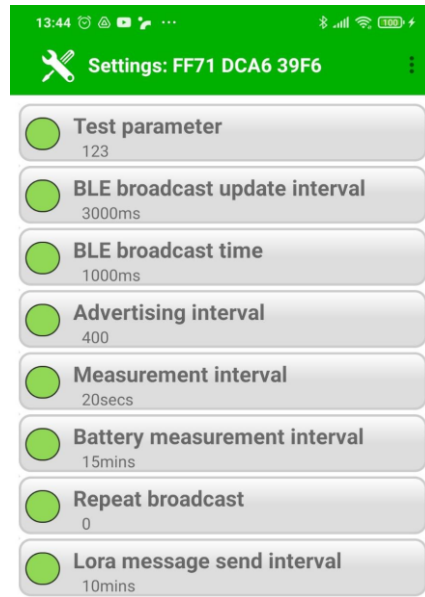


Figure 7. Parameters screen

- Most of the parameters you'll encounter on this screen are preset to values that ensure optimal performance for the majority of typical use-cases. However, you do have the flexibility to adjust these settings according to your specific needs.
- **Important Note: Please exercise caution when altering any parameters. These changes are made at your own risk and could impact the device's performance or functionality. If you are unsure about making any changes, it's highly recommended to consult SmartKitchen support staff for guidance. Always consult the user manual or technical documentation before making adjustments.**
- Each parameter is displayed as an individual card, featuring both the parameter name and its current value.



Figure 8. Parameter card

- When the user clicks the card, a dialog box opens where the parameter can be edited.

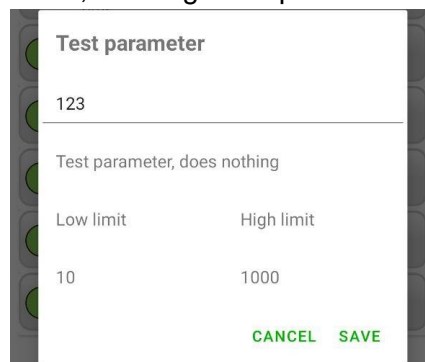


Figure 8. Parameter edit dialog

- This dialog also shows description of the parameter and low and high limits of parameter value.
- After making changes to a parameter, press the 'Save' button to apply your adjustments. A small message will briefly appear at the bottom of the screen, indicating whether your changes were successfully applied or not. If you don't see this message, it's possible that your mobile device has lost connection to the measurement device. In such cases, you can press the 'Reload' option available in the upper right corner menu to re-establish the connection and confirm your changes.

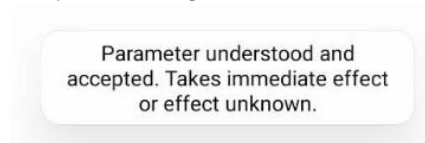


Figure 9. 'Parameter accepted' message

- If your changes are accepted, you'll notice that the circle to the left of the card changes to yellow. This color change serves as an indicator that modifications have been successfully made to that particular parameter.



Figure 10. Parameter card with modified parameter

- **Important Note:** To make sure your changes are saved to the device's permanent memory, you must either press the 'Save' on the menu (:) located in the upper right corner of the screen or use the back button to exit this screen. Failing to do so will result in losing your changes if the device is subsequently rebooted or shut down.

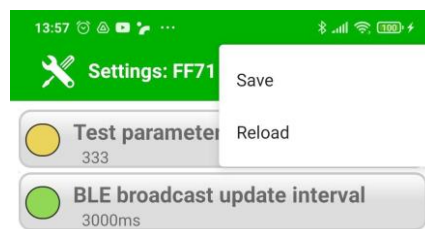


Figure 11. Parameters screen menu

- After you press the 'Save' button, the device will disconnect and you'll automatically return to the previous screen, known as the Device Status Screen. This is to confirm that your changes have been saved and applied.
- **Special Case:** For specific types of devices featuring "Power on limit" and "Power off limit" parameters, please note that the values you set may not be exact due to bit conversion constraints. The system will round these parameters to the nearest possible value that can be accurately represented. This is a limitation inherent in the bit conversion process and not an error in the application or the device.

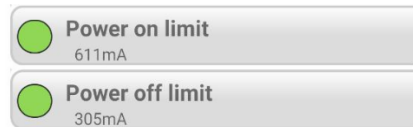


Figure 12. Power on and Power off limit parameters

4. Execute commands on the device

- **Note:** Executing commands is only accessible to logged-in users who have the appropriate permissions.
- This screen lists a variety of commands that you can execute on the selected device. Each command performs a specific action or triggers a particular function.
- **Note:** The example image below may not show the complete list of available commands. The actual commands you can execute may vary depending on the specific type of device you are interacting with.



Figure 13. Commands screen

- **Important Note: Exercise Caution with Critical Commands**
 - **Power Down:** Do not execute the "Power Down" command unless you are absolutely sure of what you are doing. Executing this command will shut down the device, and you will need to physically turn the device's power switch off and then on again to restart it.
 - **Factory Reset:** Use the "Factory Reset" command with extreme caution. Executing this will reset the device to its factory settings, erasing all changes you've made to the device settings (parameters).
- Commands are displayed as individual cards, each featuring the name of the command they represent.

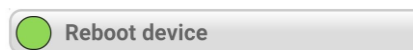


Figure 14. Command card

- If a specific command needs to be executed, the circle on the left side of its card will turn yellow.
- When you click on a command card, a dialog box will appear asking for confirmation to execute the command. If you click 'Yes,' the command will be executed on the device. If

you choose to click 'Cancel,' the command will not be carried out, and you will return to the previous screen.

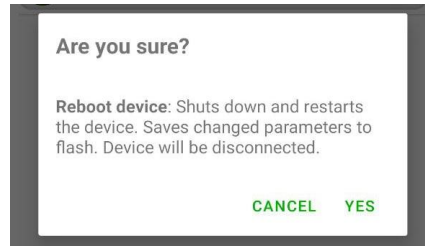


Figure 15. Command confirmation dialog

- After successfully executing a command, you will be automatically redirected to the previous screen ([Device Status Screen](#)), and the connection to the device will be terminated. This ensures that the command has been processed and allows you to continue managing other settings or devices.

5. Detailed device status

- This screen offers an in-depth view of the device, presenting comprehensive information about its attributes and current operational status.
- **Note:** The example image below may not display the full array of available status fields. The specific status fields you can view will depend on the type of device you are interacting with.

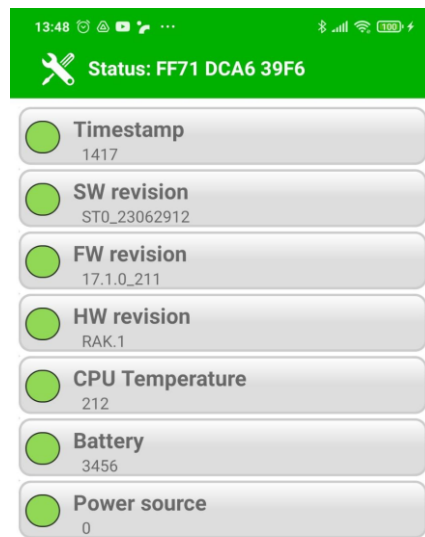


Figure 16. Detailed device status screen

- Each status field is presented as a separate card, displaying both its name and corresponding value.

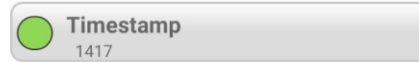


Figure 17. Status card

- By clicking on the status card a message is displayed that contains a description of the corresponding status field.

6. Device Firmware Update (DFU)

- **Note:** Device Firmware Update (DFU) is only accessible to logged-in users who have the appropriate permissions.
- Click on DFU icon on main screen.



Figure 18. DFU icon

- This opens a screen similar to the Device view.

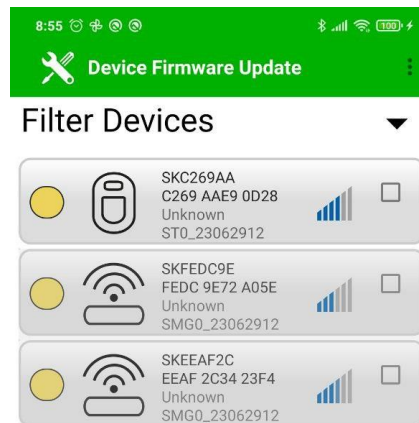


Figure 19. DFU device screen

- Devices can be filtered by RSSI and sorted by Time, RSSI or MAC address



Figure 19. DFU device filtering options

- **Filter by RSSI:** The RSSI filter uses a sliding scale ranging from -50 to -100 dBm. The higher the dBm value you set on the scale, the closer the device must be to appear in your filtered list. For example, setting the filter to -50 dBm will only show devices that have a very strong signal, indicating they are close by. Conversely, setting it to -100 dBm will include devices that are further away. The default value is set to -60dBm.
- You can sort devices by:
 - **RSSI:** Arranges the devices based on the strength of their Bluetooth signal (default).
 - **Time:** Sorts the devices based on the time they were first detected.
 - **MAC Address:** Organizes the devices alphabetically or numerically based on their MAC addresses.
- Next to the 'MAC' label, you'll find an arrow icon. This arrow is used to change the sorting order of the list of devices. Clicking the arrow will toggle between ascending (arrow pointing up) and descending (arrow pointing down = default) order, regardless of the sorting criteria you've selected, whether it's RSSI, Time, or MAC Address.
- Each device is shown as its own card that contains information about the device.

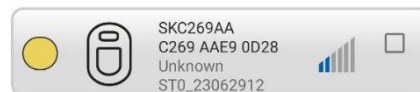


Figure 20. DFU device card

Device Information Fields:

- **Device Update status:** The color-coded circles serve as quick indicators for the firmware status of each device. A yellow circle signifies that a firmware update is available, while a green circle indicates that the device's firmware is already up-to-date. By default, only devices requiring updates are displayed. You can change this from the menu (:) if you have permissions.
- **Device Type:** Adjacent to the Device Update Status circle, you'll find an icon that indicates the type of device represented by the card. This icon is consistent with those found in the [standard BLE scan device view](#).
- **Device name and MAC address (id):** The device name (SKC269AA) and MAC address(C269 AAE9 0D28) are key identifiers that are automatically pulled from the device's Bluetooth Low Energy (BLE) advertisement data. The MAC address serves as a unique identifier for each device within the Smart Kitchen service.

- **Current device firmware:** Located below the MAC address, you'll find the version of the firmware currently installed on the device. If the version is not available, it will be marked as "Unknown."
- **Latest device firmware:** Just beneath the information for the current device firmware, you'll see the latest firmware version (ST0_23062912) that is available for that specific type of device.
- **BLE Signal Strength:** On the right side of each device card, you'll see an icon representing the device's Bluetooth Low Energy (BLE) signal strength, also known as RSSI (Received Signal Strength Indicator). This gives you an idea of the device's proximity to your mobile device.
- If you have permissions to update firmware for multiple devices, a checkbox will be displayed next to the RSSI (Received Signal Strength Indicator) on the right side of each device card. This allows you to select multiple devices for a Device Firmware Update (DFU) simultaneously. Clicking on this checkbox will prompt a dialog box to appear, asking if you'd like to select all devices that have the same available update.

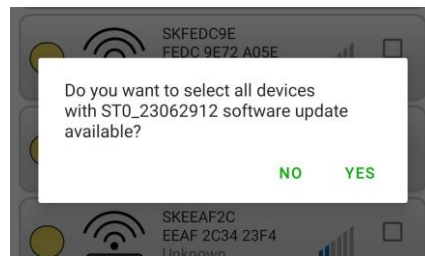


Figure 21. DFU device selection dialog box

- If you click 'Yes,' all devices that have the selected update available will be automatically marked with a check.
- If you click 'No,' only the initially selected device will be marked with a check.
- You can also select a device for update by simply clicking on its corresponding card, which will direct you to the firmware selection screen.
- DFU Screen Menu options:

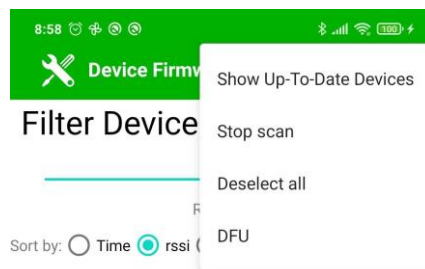


Figure 22. DFU device screen menu

- **Show/Hide Up-To-Date Devices:** Toggle this option on to display or hide devices that are already up-to-date with the latest firmware, alongside those that need updates. By default, only devices requiring updates are displayed.
- **Stop/Start Scan:** This option gives you the control to either halt or restart the scanning process for detecting nearby devices. Useful for when you have found your target device or need to refresh the list.

- **Deselect all:** Clicking this will unselect all currently checked devices. This is handy if you've changed your mind and wish to deselect multiple devices before performing any actions.
- **DFU:** This will direct you to the firmware selection screen. Please ensure you've selected the appropriate devices and are fully aware of what the update entails before proceeding.
- Firmware selection screen shows the latest firmware available for the selected device(s).



Figure 23. Firmware selection screen

- Available firmware updates are displayed as individual cards on the firmware selection screen.

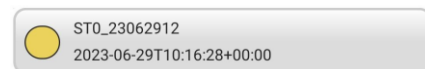


Figure 24. Firmware update card

- Each card provides key details about the update, including the type of release, the name of the firmware package, and the time the update was released.
 - **Type of release:**
 - Green Circle: Indicates a Stable Release, which has been thoroughly tested and is recommended for most users.
 - Yellow Circle: Denotes a Release Candidate, which is almost stable but may still have some minor issues.
 - Red Circle: Signifies an R&D or Test Release, which is not recommended for general use and should only be applied if you know exactly what you are doing.
 - **Name of the SW package:** The name of the firmware package follows a specific format for easy identification. It starts with the type of device, followed by an underscore ("_"), and then the date and time of the package's creation, formatted as YYMMddhh (ST0_23062912).
 - **The time of release:** The time of release displayed on the firmware card is in Universal Coordinated Time (UTC).
- By default, only the latest stable release is displayed on the firmware selection screen. However, if there are additional releases available and you have the necessary permissions to access them, you can view these releases by navigating to the menu (:).

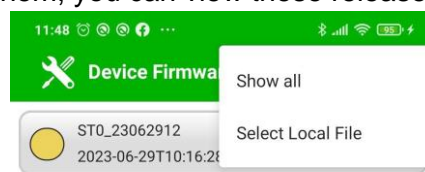


Figure 25. Firmware screen menu

- **Show All/Lates:** If you have the necessary permissions, toggling to 'Show All' will display every available firmware release, including stable releases, release candidates, and test releases. If you select 'Show Latest,' only the most recent stable version will be displayed.
- **Select Local File:** If you have the necessary permissions, you can use this option to upload a firmware update from a file stored locally on your device. Please be certain of the file's compatibility and source before proceeding with the update.
- By clicking on a firmware card, you will be navigated to the screen where the actual device firmware update takes place.

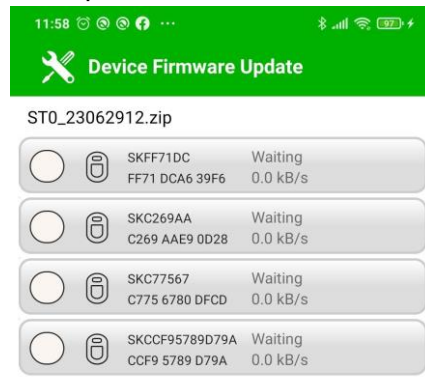


Figure 26. DFU screen

- This screen displays all the devices that have been selected for the firmware update. Each device is represented by a card that displays various details, including the device's BLE name, MAC address, update status, progress of the update, and the speed at which the update is being applied.

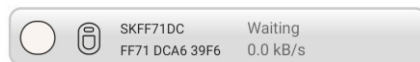


Figure 27. DFU Card when waiting for the DFU to start

- When the update status is "Waiting," the circle next to the device card will be white.
- When you click on a card, a dialog box appears, asking if you would like to initiate the update process for that device.

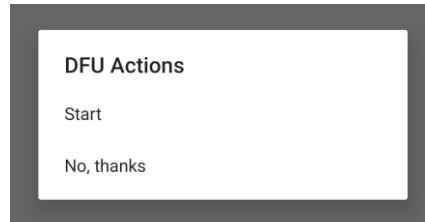


Figure 28. DFU initiate dialog

- Pressing start will initiate the device firmware update.

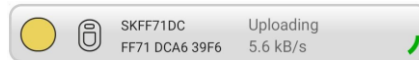


Figure 29. DFU Card when Update is in progress

- During the "Uploading" phase, the circle on the left side of the device card will turn yellow, indicating that the upload is in progress. Also a circular progress bar appears on the right side of the card, visually representing the percentage of the upload that has been completed.

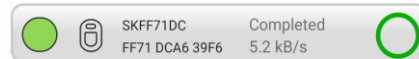


Figure 30. DFU Card when DFU is completed successfully

- When the firmware update is successfully completed, the progress bar will be fully filled, signifying 100% completion. Additionally, the circle on the left side of the device card will turn green, indicating that the update process has been finalized without issues.



Figure 31. DFU Card when DFU has failed

- If the firmware update process fails for any reason, the circle on the left side of the device card will turn red.
- While the DFU is in progress, you have the option to pause or abort the process by clicking on the corresponding device card.

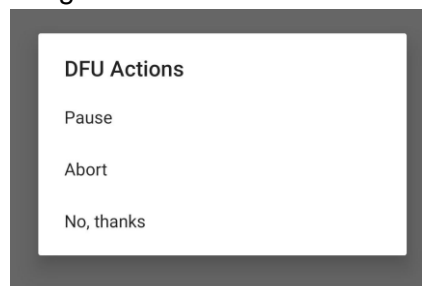


Figure 32. DFU action dialog when DFU is in progress

- If you choose to pause the Device Firmware Update (DFU), you can resume the process by clicking on the corresponding device card. A dialog box will appear, where you can select the 'Resume' option to continue with the update.

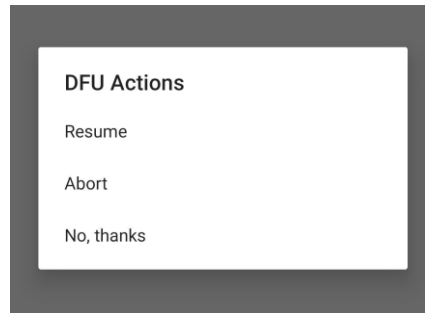


Figure 33. DFU action dialog when DFU is paused

- If you abort the Device Firmware Update (DFU) process, you may attempt to restart it by clicking on the device card and selecting the 'Retry' option from the DFU action dialog that appears. However, be aware that the retry may not always be successful, so exercise caution when choosing to abort the DFU process. If the retry fails, you may have to start the update process from the beginning, including device and firmware selection.

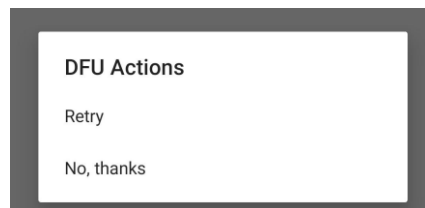


Figure 34. DFU action dialog when DFU is aborted

7. LoRa Scanner

- **Important Note:** The LoRa Scanner tool is dependent on a specialized LoRa scanner device to function. This device is responsible for scanning LoRa broadcasts and relaying the information back to the application. Without this hardware, the LoRa Scanner tool in the application will not be operational. Before using this feature, please ensure that a compatible LoRa scanner device is close by and functional.
- The scanner device detects LoRa broadcasts from various sources and transmits this data back to the application, allowing users to view details about the devices that are sending these broadcasts.
- Click on the LoRa Scanner icon on the main screen.



LoRa Scanner

Figure 35. LoRa Scanner icon

- Application will automatically start searching for available LoRa scanner devices in the vicinity.
- If no compatible LoRa scanners are available, the application will close the LoRa Scanner tool and return to the main screen. Message notification will also show informing that no devices were found.

LoRa scanner device not found.

Figure 36. LoRa Scanner not found -message

In such cases, you may want to double-check that your LoRa Scanner device is powered on, within range, and compatible with the application. If you've confirmed these factors and still encounter issues, you may want to contact customer support for further assistance.

- Once a LoRa scanner device is found, you will receive a message notification informing you that the device has been detected.

Lora scanner found: **F2CE 466E 9BC6**

Figure 37. LoRa Scanner found -message

- The MAC address of the detected LoRa Scanner is prominently displayed at the top of the screen on the toolbar. This helps you easily identify which LoRa Scanner device the application is currently connected to, ensuring you're working with the correct device.



Figure 38. LoRa Scanner toolbar after LoRa scanner device is found

- If there are multiple LoRa scanners within range, it's crucial to verify that the device the application found is the one you intend to use. Double-check the device details to ensure there are no mix-ups by comparing device MAC address to found device.



Figure 39. Sticker on device that shows QR code and corresponding MAC address

- If the LoRa Scanner identified by the application is not the one you intend to use, please follow these steps to correct the issue:
 - **Return to Main Screen:** Exit out of the LoRa Scanner tool and go back to the application's main screen.
 - **Isolate the Intended Device:** If there are multiple scanner devices in your vicinity, either turn off all other devices or move to a location where only the scanner you intend to use is within range.
 - **Restart LoRa Scanner Tool:** Once you have isolated the intended device, restart the LoRa Scanner tool from the application's main screen. The application will again search for available LoRa scanner devices in the vicinity.
- As soon as the application detects a compatible LoRa Scanner device within range, the LoRa Scanner tool will commence scanning for LoRa broadcasts. Broadcasting devices detected by the LoRa Scanner will be displayed on the screen in real-time, providing you with information about each LoRa device within range.

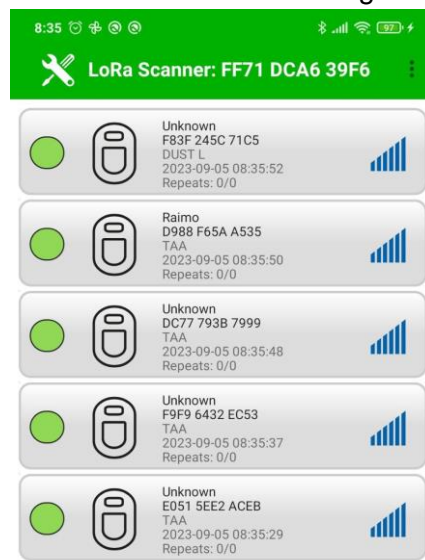


Figure 40. LoRa Scanner view

- Broadcasting LoRa devices are shown as cards on the screen.

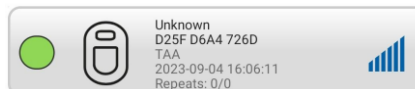


Figure 41. LoRa device card

- Each card includes following information:
 - Device nickname:** User-assigned name helping you to easily identify the device.
 - Device MAC address:** Serves as a unique identifier for each device within the Smart Kitchen service.
 - Device Type:** Indicates the specific type or model of the device.
 - Broadcast time:** Shows the time at which the LoRa broadcast was received.
 - Repeats:** Shows both the number of times the broadcast has already been repeated by repeater devices, as well as the total number of intended repeats. The format is displayed as "repeats/wanted repeats" (e.g., "2/3" would mean the broadcast has been repeated 2 times, with a total of 3 repeats intended).
 - LoRa Signal Strength:** An icon located on the right side of the card displays the LoRa signal strength in dBm. This serves as a quick visual indicator of the device's proximity and the quality of the LoRa connection.
- Clicking on a card will display additional details about the LoRa device.



Figure 42. LoRa device information

8. QR Scanner

- To start the QR scanner, simply tap on the QR Scanner Icon located on the main screen of the application.



Figure 43. QR Scanner Icon

- This action will initiate the QR scanning process, and the camera will activate, allowing you to scan QR codes.



Figure 44. QR Code scanning

- Once the QR code is successfully scanned, the application will process the data and automatically navigate you to the device info screen.



Figure 45. Device Info screen

- This screen will display detailed information about the device associated with the scanned QR code, such as its name, MAC address, device type, and other relevant details. This feature provides a quick and convenient way to access device information without manual entry.
- A "Scan Another" button is located at the bottom of the device info screen. Clicking this button will return you to the QR scanner, allowing you to immediately scan another QR code without having to navigate back to the main screen.

Glossary

- **API (Application Programming Interface):** A set of rules and protocols for building and interacting with software applications.
- **BLE (Bluetooth Low Energy):** A power-efficient variant of the classic Bluetooth technology, used for connecting devices wirelessly.
- **Card:** A UI element that displays information and may include interactive elements like buttons or links.
- **Checkbox:** A UI element that allows the user to make a binary choice.
- **DFU (Device Firmware Update):** The method by which the firmware of a device can be updated.
- **Dialog Box:** A small window that prompts the user to make a decision or enter additional information.
- **Firmware:** The software embedded in a hardware device.
- **LoRa (Long Range):** A wireless communication technology designed for long-range, low-power communication.
- **MAC Address (Media Access Control Address):** A unique identifier for network interfaces.
- **QR Code (Quick Response Code):** A type of matrix barcode that can be read using a smartphone camera.
- **RSSI (Received Signal Strength Indicator):** A measurement of the power level received by a device.
- **SW Package:** Software package that may include updates or new features for a device.
- **Universal Time:** Time that is the same worldwide, commonly referred to as Coordinated Universal Time (UTC).
- **Uploading:** The act of sending data from one local system to a remote system.
- **User Permissions:** The level of access that a user has in a software application.