Takipsan™

MINIDESK PLUS USER MANUAL

v1.0.6

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Introduction

MiniDesk Plus is a desktop-type UHF RFID scanner equipped with an embedded touchscreen. Designed for use in production line environments, it enables reliable identification of RFID-tagged items to support traceability.

MiniDesk Plus stores each scanned item in its external memory and automatically alerts the user if a previously scanned item is detected. This functionality helps prevent duplication, labeling errors, and other tracking issues during manufacturing processes.

The Main features of the old version and the new version of Minidesk are listed in Table-1.

Functionality	**MiniDesk Station**	**MiniDesk Plus**
Screen	1.44” TFT Screen	2.4” TFT Screen
Touch Feature	-	YES
Micro USB Input	-	YES
External Memory	-	YES
RFID Reader	Jogtek TM-915 V3.1	Zebra RE40
Single Read Mode	YES	YES
Multi Read Mode	-	YES
Adjusting RF Power	Only Via Interface	Via Touch Screen
Disconnecting & Reconnecting Wi-Fi	Only Via Interface	Via Touch Screen
Ethernet (RJ45) Connectivity	YES	YES
Offline Operation	YES	YES
Adjusting RFID Region	ETSI, FCC, Vietnam, China (v3.5.6 or higher)	ETSI, FCC, Vietnam, China, Bangladesh
Checking The Tag Format	YES (v3.5.7 or higher)	YES
Detecting Extra Alarm Tag	YES (v3.5.7 or higher)	YES (v4.0.11 or higher)

Table-1. Main Features

The total number of unique EPC (Electronic Product Code) read on the device is written on the screen. When the device is switched on and off, the recorded EPCs and the counter are not erased. See the Main Page in Figure-1.

MiniDesk Plus sends the Online/Offline actions to the Takipsan portal over the Internet and users can track their daily/weekly/monthly or annual production and get reports.

MiniDesk Plus can operate in offline mode, storing actions in its memory. Once connected to the internet, it will automatically transmit the stored offline data to the Takipsan Portal.

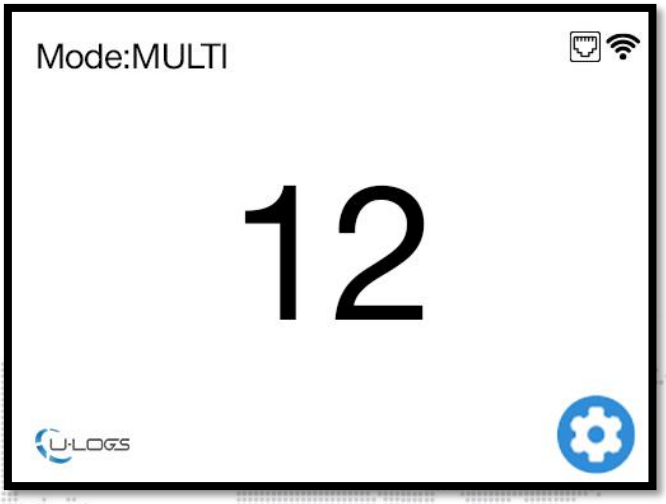

Figure-1 Main Screen

The main screen displays the number of unique tags/labels stored in the device, internet connection status icons, settings menu (bottom right icon) and the current operating mode of the device.

Adjusting Device Operating Mode

The Operating mode of the device can be adjusted over slider button in the settings menu (bottom right icon) on the screen. See Figure-2 and Figure-3. Press the back icon at the bottom left to save the settings.

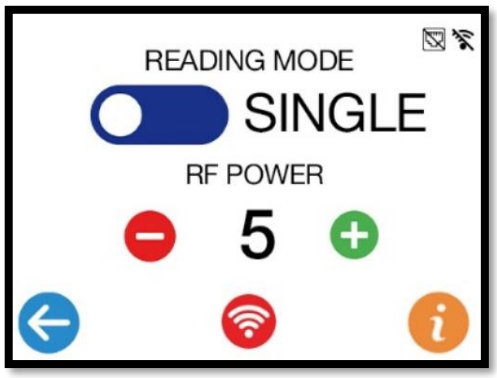

Figure-2 Single Read Mode

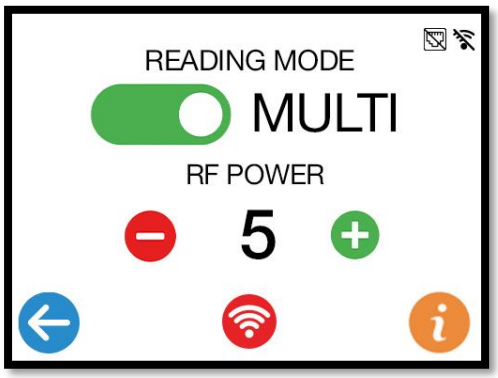

Figure-3 Multi Read Mode

Reading Modes

SINGLE READ MODE

Single reading mode should be selected to scan tags one by one.

Functionality	Minidesk Station	Minidesk Plus
READ UHF RFID Label/Tags Alerts the user about the status of the EPC with beep sound and LED.	YES	YES
STATUS: MATCH If the scanned RFID inventory tag matches the specified format and has not been scanned before, the counter increases by one. The device emits a beep sound and the green LED lights up.	YES	YES
STATUS: DUPLICATE If the RFID inventory tag has already been scanned, a "DUPLICATE" warning appears on the screen, the device emits a beep sound, and the red LED lights up. The counter remains the same.	YES	YES
STATUS: MULTI TAG If multiple RFID extra alarm tags or inventory tags are scanned at the same time, the red LED lights up on the device and a "MULTI TAG" warning appears on the screen. If there is an RFID Item/Items that has already been scanned, the counter value will be reduced by its number. If multiple RFID items have not been read before, the counter remains the same.	YES	YES
STATUS: WRONG FORMAT If the RFID tag is not in the correct format, a "WRONG FORMAT" warning will appear on the screen, the device will emit a beep sound, and the red LED will light up. The counter will remain the same.	YES (v3.5.7 or higher)	YES
STATUS: EXTRA ALARM If the scanned RFID extra alarm tag matches the specified format and has not been scanned before, the extra alarm counter increases by one.	YES (v3.5.7 or higher)	YES (v4.0.11 or higher)

Table-2 Single Read Mode Features

MULTI READ MODE

"Multi Read" mode has been added for assorted products.

With the enhanced RFID reader performance and software algorithm, the device can read EPCs and check their status within seconds.

When a tag is scanned in multi-Mode, a package symbol appears, as shown in Figure-4, and it records the scanned EPCs into the package.

When the scanned tags are removed from the device, the package is automatically closed, and the package icon disappears.

If there is a previously scanned tag in the package (duplicate) or if the tag format is incorrect (Wrong Format), the matched tags scanned within that package are deleted from the device. This allows for rescanning the assorted products to locate the faulty tag.

For example, if the number displayed on the screen is 30, let's assume that from a set of 4 items, the first 3 are matched, and the last one is a duplicate. When scanning begins, the screen will show 34, followed by a duplicate warning, and when the package closes, the number will return to 30. One duplicate information is sent to the portal.

In versions V4.0.12 and above, all scanned tags must be of the same size. If a product with a different size or an undefined size is detected among the items, the device will display a warning ("Size ERROR"). In this case, all matched tags within the package are deleted from the device, allowing the user to rescan the products and identify the incorrect tag.

Note-1: This feature is available only on Minidesk Plus devices.

Note-2: The maximum number of RFID items that can be read in a package is 100.

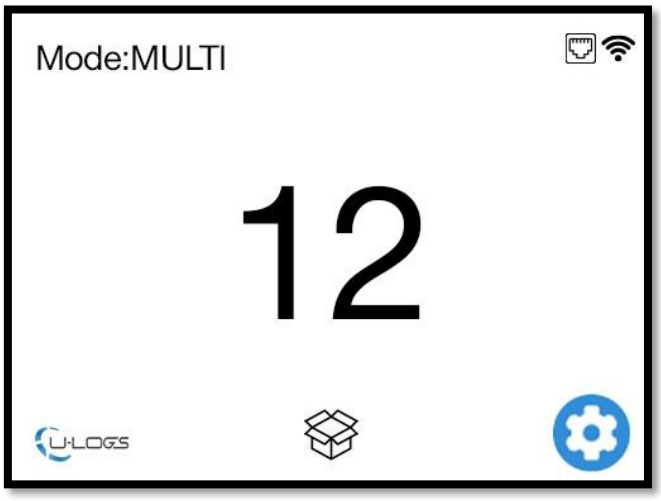

Figure-4 Multi Mode Reading

Functionality	Minidesk Station	Minidesk Plus
READ UHF RFID Label/Tags Alerts the user about the status of the EPC with beep sound and LED.	-	YES
STATUS: MATCH If the scanned RFID inventory tag matches the specified format and has not been scanned before, the counter increases by one. The device emits a beep sound and the green LED lights up.	-	YES
STATUS: DUPLICATE If the RFID inventory tag has already been scanned, a "DUPLICATE" warning appears on the screen, the device emits a beep sound, and the red LED lights up. The counter remains the same.	-	YES
STATUS: WRONG FORMAT If the RFID does not have the right format," WRONG FORMAT" will be shown on the screen with a beep sound and red LED flashes. The counter remains the same.	-	YES
STATUS: EXTRA ALARM If the scanned RFID extra alarm tag matches the specified format and has not been scanned before, the extra alarm counter increases by one.	-	YES (v4.0.11 or higher)
STATUS: SIZE ERROR If a product with a different size or an undefined size is detected among the items, the device will display a warning ("Size ERROR").	-	YES (v4.0.12 or higher)

Table-3 Multi-Mode Features

Extra Alarms (Double RFID Tag Detection)

Available in software version v4.0.11 or higher

In some cases, garments may have two RFID tags attached: one for inventory and one for security. With this feature, the device can detect and distinguish between them.

The total number of detected security tags is displayed separately on the main screen under “Extra Alarms:”. (See Figure-5). This counter increases only when a new, different security tag is detected.

In versions V4.0.12 and above, scanned extra alarm tags are stored in the device memory. When these tags are scanned, the device does not provide any audible or visual alerts. If the tag has not been scanned before, only the extra alarm counter is incremented.

This feature allows users to keep track of additional security tags without mixing them into the main inventory list, helping ensure clear separation and accurate counting during scanning operations.

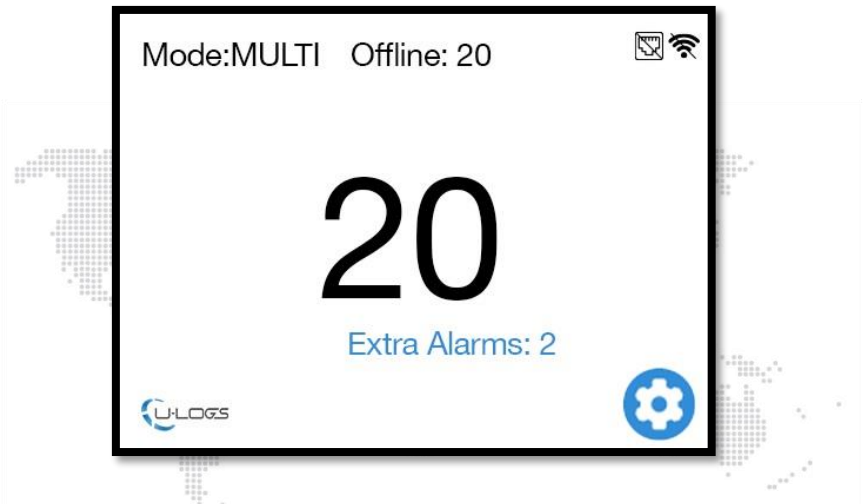

Figure- 5 Main screen displaying the total number of detected security tags

Size Information Display

Available in software version v4.0.12 or higher

With this feature, the size information of scanned RFID tags is displayed on the device screen. If the tag contains valid size information, it is shown under the “Size:” label on the main screen (See Figure-6). When a tag with undefined size information is scanned, this field is removed from the screen.

This function ensures accurate size tracking, particularly in assorted product groups, and prevents incorrect items from being included in the system. In this way, inventory accuracy is maintained and errors in the production process are minimized.

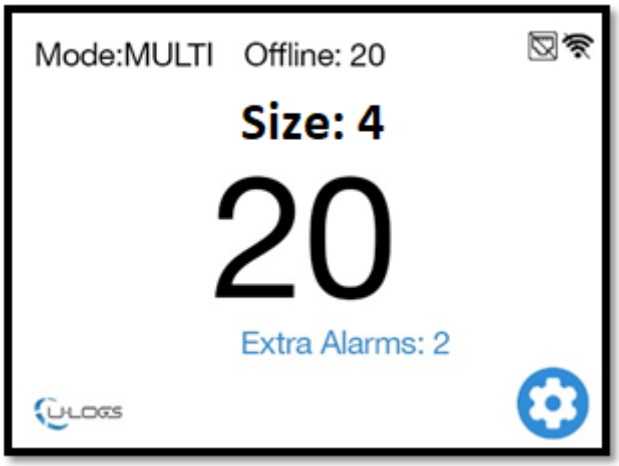

Figure- 6 Main screen Displaying the size information of the tag

Setting RFID Reader Power

Reader power can be adjusted via Touchscreen.

1. Accessing the Adjustment Page:

- To begin adjusting the RFID reader power, navigate to the Settings menu on the touchscreen interface of the device. See Figure-7.

2. Adjusting Power:

- Once you are on the adjustment page, you will see the current power value displayed on the screen.
- To increase the power, tap on the "+" icon.
- To decrease the power, tap on the "-" icon.
- The power value will change accordingly as you tap on the icons.

3. Confirming the Adjustment:

- After you have adjusted the power to your desired level, press the back icon located on the bottom left on touchscreen.
- Upon pressing the "back" icon, the device alerts the user with a beep sound to indicate that the new power value has been saved.

Figure-7 Settings Menu

Note:

Please ensure that you adjust the RFID reader power cautiously to avoid any potential issues or interference with its operation.

If you are unsure about the optimal power level, consult the device's documentation or contact our customer support for assistance.

Internet Connection

The device can work via ethernet cable or over Wi-Fi.

LAN Cable

To connect the device to the Internet, simply plug the LAN cable into the socket on the back of the device. When the socket is detected and the device is connected to the internet, The Ethernet logo on the top right screen becomes active.

Wi-Fi

The user is required to establish a connection to the device's interface to set the Wi-Fi network name and password for connectivity. (See “Device Interface Connection” section).

- When the interface connection of the device is successfully made, the user needs to press “WI-FI” button under the Internet section. (Figure-8)
- Select the name of the network to connect to from the Wi-Fi list and enter the password, then click “Save” button. (Figure-9)

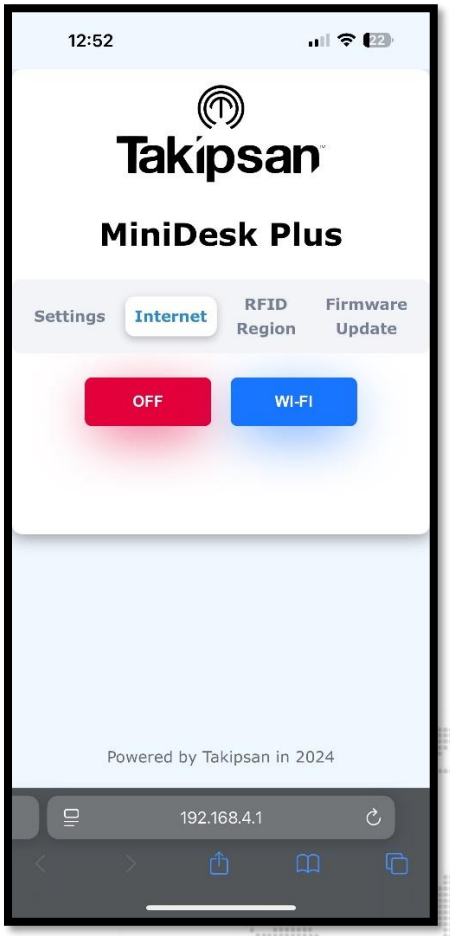

Figure-8

Figure-9

- If the connection is successful, a 'Wi-Fi Connected!' warning message will appear. (Figure-10)

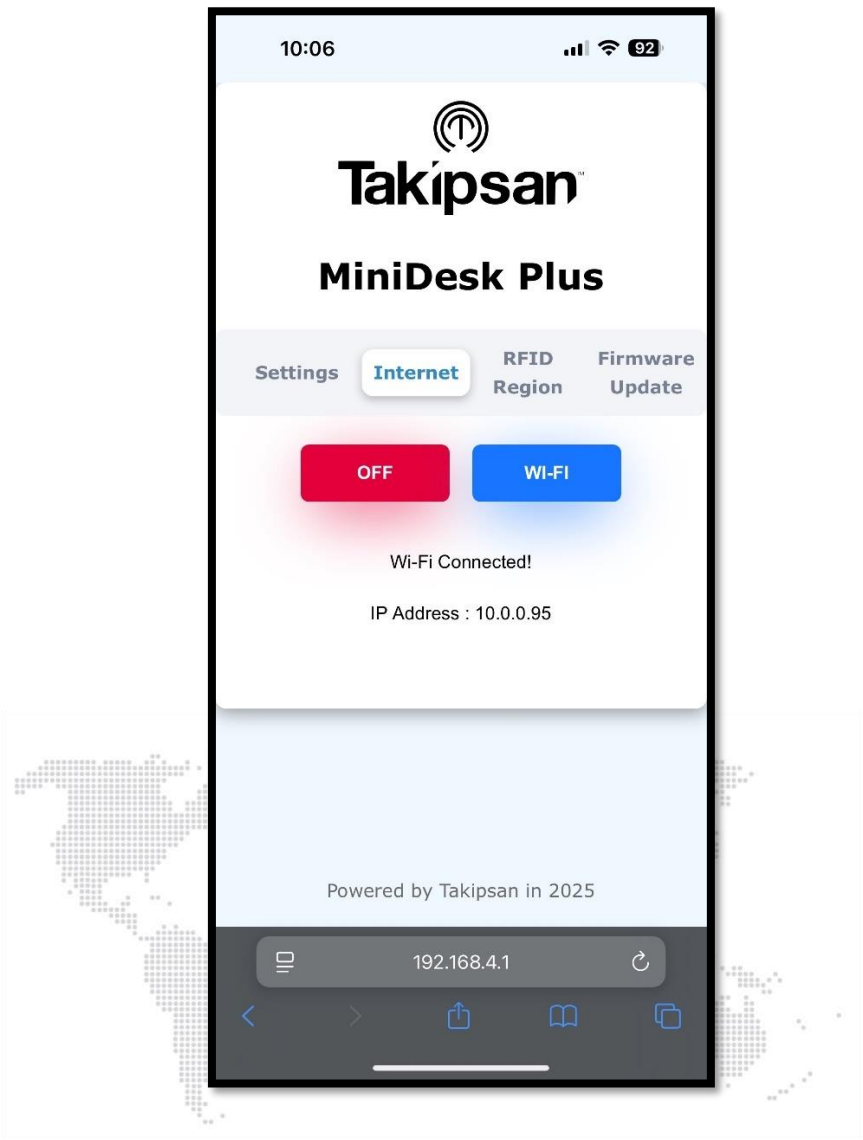

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Figure-10

After a successful connection, the Wi-Fi SSID and password are remembered, allowing the user to automatically connect to the same Wi-Fi network without needing to access the device interface each time.

If the user wishes to disconnect the Wi-Fi connection, they should click the 'OFF' button. Afterward, the device will not reconnect to the internet unless the Wi-Fi settings are changed from the interface.

If a Wi-Fi name and password have already been saved on the device, the Wi-Fi icon appears in the settings menu.

The user can disconnect or reconnect to W-Fi by pressing the Wi-Fi icon on the settings menu. See Figure-11 and Figure-12.

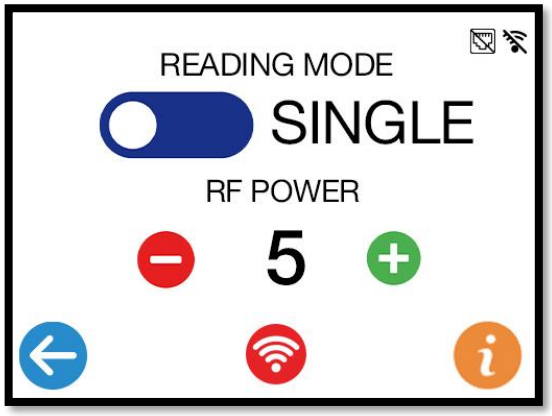

Figure-11 Wi-Fi Disconnected

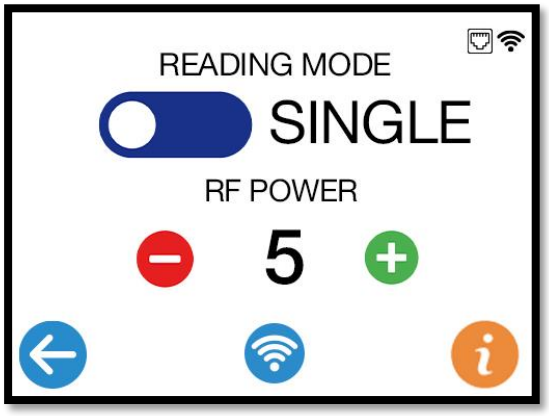

Figure-12 Wi-Fi Connected

Offline Usage

The device can operate without an internet connection. When working offline or when it is online but unable to transmit data to the cloud, the number of unsent operations is displayed on the main screen as “Offline:”, See figure-5.

If the local database is not reset, the device can transmit these offline records to the cloud once it reconnects to the internet.

When the device is connected to the internet, it automatically sends the offline data to the cloud and displays a warning message as shown in Figure-13**.** During the transmission, the LEDs located beneath the device turn white. Once the transmission is complete, the lights turn off and the warning message disappears.

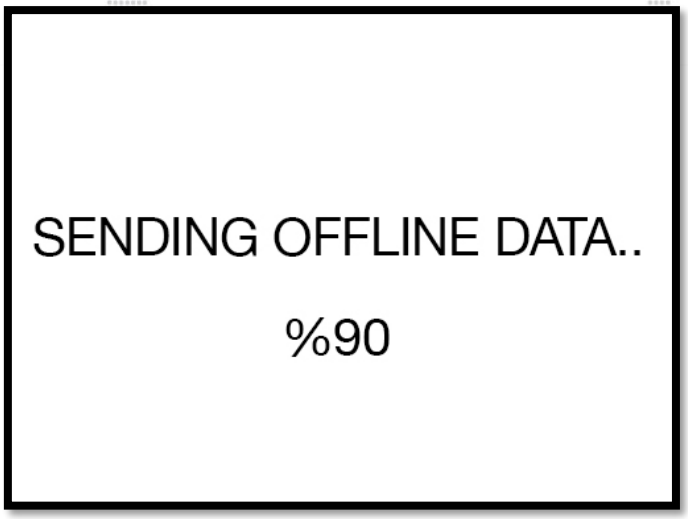

Figure-13 Sending Offline Process

RFID Region Setting

The user can select the RFID region from the device interface page. (See Figure-14 and Figure-15). The device supports different regions: ETSI, FCC, China, Vietnam and Bangladesh.

ETSI (European Telecommunications Standards Institute):

- Region: Mainly used in Europe, parts of the Middle East, and Africa.
- Frequency Range: 865.6 - 867.6 Mhz

FCC (Federal Communications Commission):

- Region: Primarily used in the United States, Canada, and some parts of the Americas.
- Frequency Range: 902–928 MHz

China:

- Frequency Range: 920.5 - 924.5 MHz

Vietnam

- Frequency Range: 918–923 MHz

Bangladesh

- Frequency Range: 918–923 MHz

The regions operate within their specific frequency ranges and power limits, ensuring optimal device performance and legal compliance. Based on the selected region, the device will function within the designated frequency range and adhere to regional regulations.

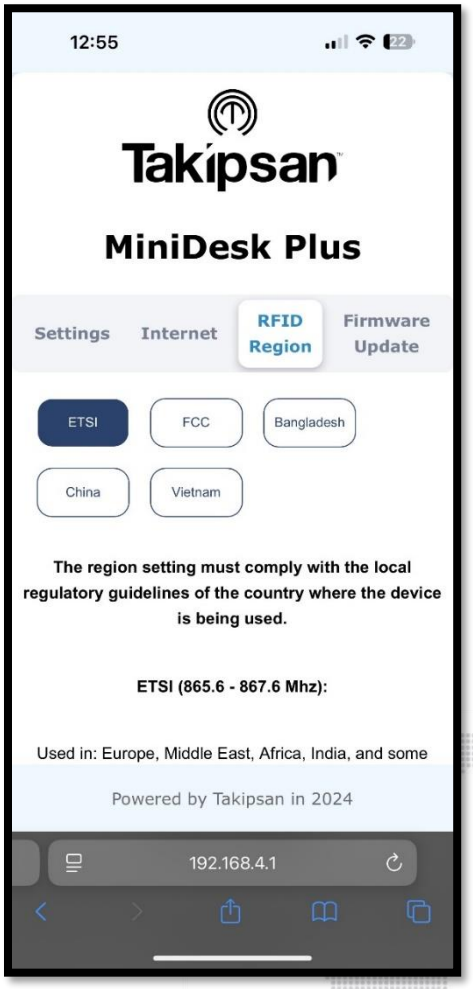

Figure-14 ETSI Region

Figure-15 Region Page

Device Interface Connection

Users can remotely adjust RFID power, configure Wi-Fi settings, and upload firmware files through the interface.

The device's SSID and password are located underneath it, allowing users to connect to the device's interface via Wi-Fi.

- By using a Smart Phone, Tablet or Computer; user needs to open the Wi-Fi List, choose the MiniDesk Plus in that list, and connect to it with the password given on the label under the MiniDesk Plus.
- 2- After the Wi-Fi connection is established, the user needs to open a Web Browser and type the link: **192.168.4.1** to Access the interface page of the MiniDesk Plus. (Figure-16)
- If the device has already an internet connection, users can see MAC and IP addresses. (Figure-17)

Users can adjust RFID Region, set Wi-Fi, and upload firmware files remotely in the interface.

Figure-16

Figure-17

When the device is connected to the interface, it will not perform any scans, and if the user is on the main menu, a warning message will appear as shown in Figure-18**.** *(Available in version v4.0.11 or higher)*

Once the necessary operations are completed, close the tab; the warning message will disappear, and the device will be ready to scan again.

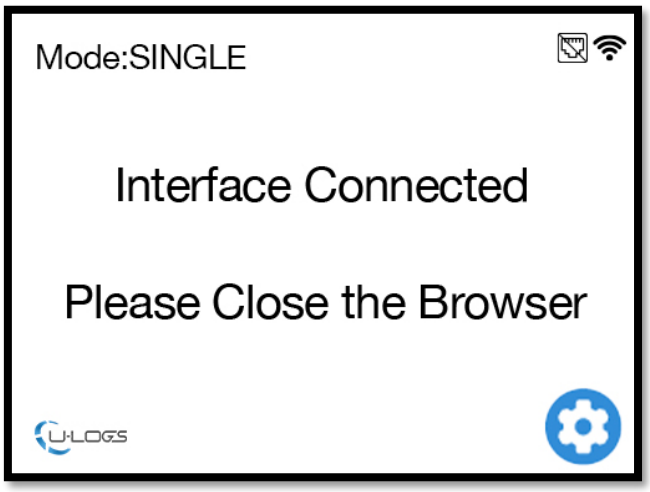

Figure-18 Warning Message on Main Menu When Interface is Connected

System Information

When the "Info" icon is pressed in the settings menu which is on bottom right, it navigates to the system information page. This page contains information about the device such as Serial Number, Device ID, Wi-Fi interface connection information, interface IP, IP to which it is connected to the internet. See Figure -19.

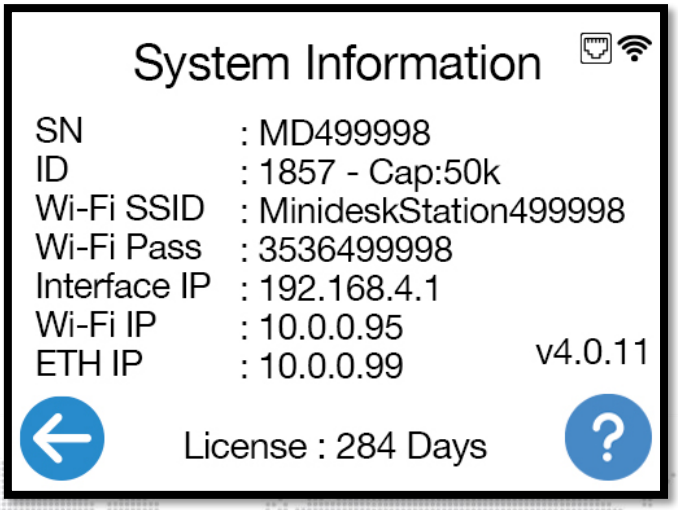

Figure-19. System Information Page

SN: Device Serial Number

ID: Device ID

Cap: Total number of operations that can be stored in the device memory

Wi-Fi SSID: Device Wi-Fi SSID for connecting the Interface

Wi-Fi Pass: Device Wi-Fi password for connecting the Interface

Interface IP: Device Interface IP Address

ETH IP – Wi-Fi IP: The IP address where the device is connected to the internet

License: Shows the remaining days of licensed devices

Version: Shows the current version of the device

Resetting The Local Database

The device's external memory where the EPC information is stored can be erased by pressing and holding the Reset button located on the front of the device. When the button is pressed, a pop-up appears (Figure-20). Pressing “YES” resets the local database and the device restarts.

There is a maximum number of operations that can be stored in the device's external memory. When this number of operations is reached, a warning will appear as shown in Figure-21.

After this warning, the device will not perform any new readings, and it must be reset by pressing and holding the button.

This Action does not delete the data stored in the Takipsan Portal. However, if there are offline EPCs stored in the device, they will be deleted.

Figure-20. Pop-Up Screen

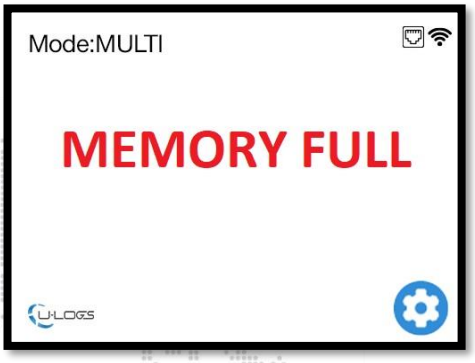

Figure-21. Memory Full Warning

Firmware Update

Device can be updated remotely and manually.

Manual Update

1. Wireless Update

    - Users need to follow up the path and click FIRMWARE UPDATE button.
    - The user should click on the 'Choose File' button and select the 'Update File' in their operating system.
    - Once the 'Update File' is selected, the user should then click on the 'Update' button and ensure that the MiniDesk Plus and its accompanying smartphone, tablet, or computer are kept in proximity. See Figure-22.
    - Upon completion of the update, feedback will be provided via the interface, and the device will reset itself, commencing operation with the new software.

2. Update With Cable

- In line with the documents to be sent from Takipsan software support team, Minidesk Plus can be updated from outside with Micro-USB cable without the need to open it and programming kit.

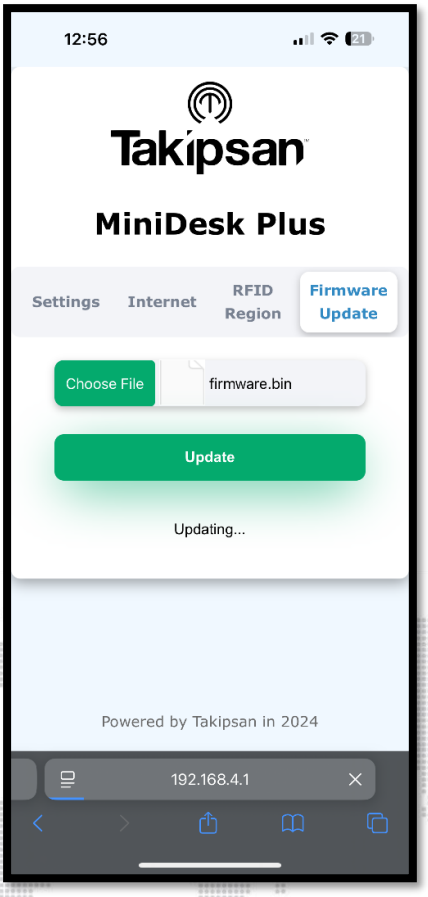

Figure-22 Updating Firmware

Remote Update

MiniDesk Plus can get a remote version update. It checks for a new update the first time it connects to the internet even without having 0a license. If there is a new update available, the Updating Page will be shown on the screen. See Figure-22.

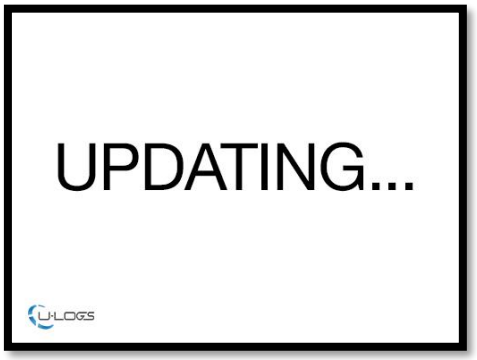

Figure-23. Updating Screen

Technical Support Request

For all technical questions and support requests related to the device, please send an email to swsupport@takipsan.com. Takipsan software support team will assist you as soon as possible.