User Manual

Android™ 12 v3.01 for DLT-V73A

ADVANTECH

IMPORTANT:
For safe and proper use, follow the instructions in this manual.
Keep the manual for future reference.

Manual version

Manual version: V1.50
Completed on: November 26, 2024

Revision history:

Version	Date	Manual modifications
V1.00	February 12, 2024	Initial document Android™ 12 v3.01 release.
V1.10	March 11, 2024	MDevice v2024.2.4 release
V1.20	June 10, 2024	Power Settings: Charge battery (UPS) removed GOTA description added USB (Type-C) function – no plug-in of USB sticks or keyboards Power Settings: 3 seconds delay Defroster option removed No switch from AOSP version to GMS version possible SOTI description added MDevice v2024.5.3 release Fastboot information added on OTA DeviceON link updated
V1.30	July 8, 2024	Android Enterprise installation added
V1.31	August 1, 2024	SOTI-OTA description added
V1.40	October 15, 2024	MWedge description added MBlank description added ADB commands added
V1.50	November 26, 2024	Kiosk Mode / Advantech MFocus description added External Partner SOTI and StayLinked added

Copyright and Disclaimer

Acknowledgements

Technical customer support

Contact your distributor, sales representative or an Advantech Service Center for technical support. Please have the following information ready:

- Product name
- Serial number
- Description of your peripheral attachments
- Description of your software (operating system, application software, etc.)
- The exact wording of any error messages
- A complete description of the problem

Find the contact data of our Global Advantech Service Centers on our website:

https://erma.advantech.com

Contents

1. Introduction

1.1. Area of applicability

Information and settings described in this manual apply to product Android™ 12 v3.01 for Advantech DLT-V73A Industrial Computer using AOSP / GMS certified image.

1.2. Target group for this manual / loss of warranty

Android installation and configuration should only be performed by qualified, skilled personnel, such as IT administrators.

Incorrect installation and configuration can compromise the function of your DLT-V73A Industrial Computer.

Incorrect installation and/or configuration of Android by the user, releases Advantech Co., Ltd. from all liability for warranty claims.

1.3. Current manual versions

NOTE

The latest versions of our manuals are available at our websites:

www.advantech.com

1.4. Abbreviations in this manual

Complete term	Abbreviation
Advantech DLT-V73A (Industrial Computer)	DLT-V73A
Android™ Debug Bridge	ADB
Android™ 12 v3.01 for Advantech DLT-V73A	Android
Android™ Open-Source Project	AOSP
Android™ MDevice for Advantech DLT-V73A	MDevice
Android™ MTouch for Advantech DLT-V73A	MTouch
Uninterruptible power supply	Battery (UPS)
Ambient light sensor	ALS
General Packet Radio Service	GPRS
Global Navigation Satellite System	GNSS
Google® Mobile Services	GMS

1.5. Design elements in this manual

1.5.1. Safety notes and other notices

<Signal word> ***Damage to persons**:*

*Signal word **DANGER** means that death or severe bodily injury will occur if this information is not observed.*

*Signal word **WARNING** means that death or severe bodily injury can occur if this information is not observed.*

*Signal word **CAUTION** means that slight bodily injury can occur if this information is not observed.*

NOTICE ***Prevent system malfunction and property damage.***

Information about possible property damage to avoid damaging hardware or losing data.

NOTE *Notes provide optional additional information.*

1.5.2. Text formatting conventions

Subject	Formatting	Example
Lists	Bullet points	• Part 1 • Part 2
Instructions	Numbers	1. Copy file … 2. Rename file …
Product names	Normal, not highlighted	Software MDevice is a setup tool for …
Buttons in software dialogues	**Bold**	With button **Next** …
Texts, parameters in software dialogues	**Bold**	Parameter setting **ID-Test** should …
Placeholder for a variable	<x> value in angle brackets	Value <x> depends on …
Syntax, Strings	`Courier New Size 11`	The `AT` prefix must be set.
Keyboard keys	In capital letters, sequence with +	CTRL + ALT + DEL
Cross reference to other manual chapters	Text in *italics, underlined*	Please refer to manual section *1.1 Examples*
Program files File names Directories	In quotation marks	File “quectel.exe“ … In directory “C:/Program Files” ….
Links	Underlined, blue	Website https://www.advantech.com

2. Functional description

2.1. Supported hardware and peripherals

Android is running on DLT-V73A model variants. Android is supporting following peripherals:

- USB keyboards / mass storage (USB-Sticks)
- Mini Bluetooth adapter
- Internal / external GNSS receiver
- USB / Serial handheld scanners
- Battery (UPS)

2.2. Android for DLT-V73A - Overview

Android is based on android-x86.org Android open-source and built for enterprise environment.

- Kernel Version: 4.19.157
- Android security patch level: March 1, 2024
- Android Version: 12
- CPU Type: Quectel® SC66 SOC (Qualcomm® SDM 660)
- Processor Configuration and ABI (Application Binary Interface): ARMv8

Android is delivered as a User Build Image signed with Advantech certificates.

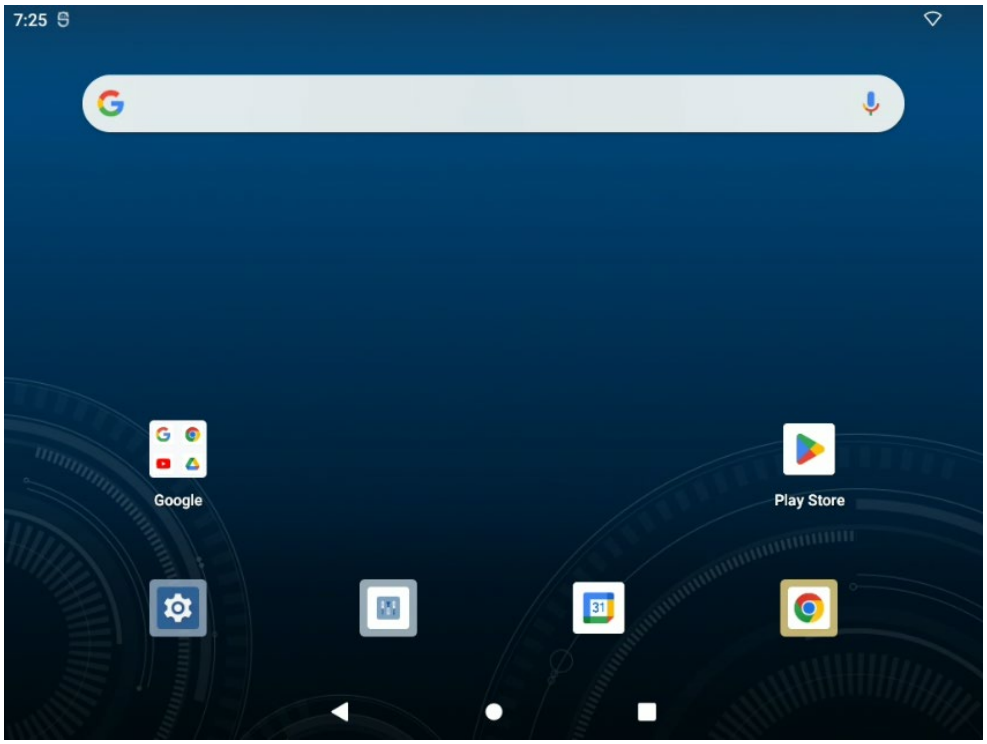


Figure 2-1: Android for DLT-V73A – Advantech home screen (GMS)

2.2.1. Main applications integrated with Android

The following table provides an overview of the main applications integrated with Android:

Application	Source	Description
Advantech MFocus	Advantech	Allows Kiosk Mode operation of the device
Android Agent	Advantech	DeviceOn IService Android Agent
Calculator	Google®	Standard Android Calculator application
Calendar	Google®	Standard Android calendar application
Clock	Google®	Standard Android clock application
Files	Google®	Standard Android file manager application
Gallery	Google®	Standard Android gallery application
MDevice	Advantech	Configuration utility
Music	Google®	Music Player
MBlank	Advantech	Prevent display content view and terminal access by the user while the vehicle is in motion
MFocus Configuration	Advantech	Application to configure the Advantech MFocus (Kiosk Mode)
MTouch	Advantech	User can increase the sensitivity of the PCAP touchscreen to facilitate operation with gloves.
Search	Google®	Standard Android search application
Secure Policy Setting	Google®	Installation pack of OS Setting function for DeviceOn Android Agent.
Settings	Google®	Menu used to configure system, including roaming behavior.
Sound Recorder	Google®	Sound Recorder
Videos	Google®	Video Player
WebView Browser Tester	Google®	Standard Android web browser application

2.2.2. Optimized for enterprise use

For enhanced security and guaranteed system stability, Android for DLT-V73A is optimized for enterprise use. Some applications commonly found on Android based consumer devices are removed:

Application	Reason of removal	Description
Phone	Not supported on device	Telephony services
Camera	Not supported on device	Camera app
Contacts	Not relevant for device	An app to handle personal contacts
Torch	Not supported on device	Torch application using a camera's flash light
MMS	Not supported on device	Multimedia Messaging Service

2.2.3. Google® Mobile Services (GMS)

When using the DLT-V73A GMS certified image, you can use the following additional applications:

Application	Source	Description
Gmail	Google®	Standard Google® Mail application
Play Store	Google®	Store to download Google® certified applications
Chrome	Google®	Standard Google® Web Browser
Drive	Google®	Google® Workspace
Google	Google®	Google® Search Engine
Google TV	Google®	Google® TV application
Maps	Google®	Google® Maps
Meet	Google®	Google® application for online meetings
Photos	Google®	Google® application for Photos Please note that an external connected USB camera is required (not integrated).
YouTube	Google®	Online video sharing platform owned by Google®

2.2.4. Optimized for on-vehicle use

The DLT-V73A Industrial Computer has been optimized for on-vehicle, industrial use. This optimization results in a different behavior from consumer grade Android devices:

Aspect	Difference to consumer grade Android	Description
System Shutdown	No shutdown via soft buttons and menu.	Device shutdown is only possible via the power button integrated on the front panel to avoid unintended shutdowns caused by erroneous touch screen activity from operators.
Display brightness	None	Brightness is controlled using buttons on the front panel or by activating ALS (ambient light sensor) for “automatic” brightness control.
Battery (UPS)	DLT-V73A terminal’s battery (UPS) support	Android indicates the battery (UPS) level of the DLT-V73A terminal’s integrated UPS (UPS is optional available), but it doesn’t measure the vehicle’s battery status.
Integrated peripherals	No handheld / consumer peripherals	Certain HW components and related system applications are not supported because they are not suitable for the type of device, including: • Notifications via vibration • No camera support • No integrated phone support • No microphone
WLAN Support	None	DLT-V73A supports WLAN next to Bluetooth (no additional hardware is required).
Bluetooth Support	None	DLT-V73A supports Bluetooth next to WLAN (no additional hardware is required).
Optional GNSS Support	None	DLT-V73A supports GPRS / GNSS in case optional extension has been placed.
Support for legacy Scanners	Integrated	Serial port no.1 (COM1) has an optional 5/12V power supply, which can be enabled using MDevice to power external legacy scanners.

2.2.5. Licensing

By using Android, you implicitly accept the license terms of the Android Open-Source Project.

Detailed information on the related licenses and legal terms are available on **Android under Settings -> About tablet -> Legal information**.

Please note that specific applications from third parties may have individual license terms and may prompt you to accept these when first launching the app.

3. Getting Started

3.1. Native Mode and Kiosk Mode

Android has been optimized for enterprise use in the logistic industry. This and the following sections of this document describes how administrators can integrate the DLT-V73A Industrial Computer into their enterprise environment. This includes configuring the system, adding enterprise applications and creating new user profiles.

Android supports two basic options to set up the system:

- Native Mode
- Kiosk Mode

Native Mode

In this mode, the native launcher, called Quickstep, is used as home app. Administrators need to use Android 12 multi user support and additional Enterprise Mobility Management (EMM) software to configure and set up the device.

Configuration of multiple user profiles is described in section *7.8 Multiple Users.*

NOTICE ***Prevent system malfunction.***

Please note that there are some restrictions on multiple user profiles under Android 12 and that the use of an EMM suite is highly recommended.

Some features have been built into the device, which allow enhancing system startup behavior. These features can be configured using MDevice (refer to section *5.5 Startup Settings*).

Kiosk Mode

In this mode, Advantech MFocus will be used as home app. Administrators can define which applications are available to operators and/or auto-launched on the MFocus home screen.

Advantech provides a dedicated application for configuring Kiosk Mode (refer to section *3.6 Kiosk Mode / Advantech MFocus Configuration).*

3.2. Recommendations for configuring the system

Here are some additional hints / recommendations for administrators to configure the system for best performance:

System Power Management:

Android has been enriched with special features to manage the device's power up and down behavior for integration in industrial environments.

You can configure these features using the MDevice application as described in section *5.4 Power Settings.*

Installing Apps:

Android AOSP does not include Google Mobile Services to protect your enterprise's privacy.

For support, please use GMS image for DLT-V73A industrial terminal instead.

Chapter *7.5.1 APK Installation* describes how to install applications on Android.

Android is an ARMv8 64bit based system.

Please make sure that the applications you wish to install have been compiled for this configuration.

3.3. System startup (Power button / Ignition)

By default, the DLT-V73A industrial terminal can be switched on using two different ways:

1. By pressing the Power button

   OR

2. By enabling Ignition signal

If one condition is available the system will perform the OS startup.

NOTE *How the unit should handle switch-off situation can be configured using MDevice utility. See chapter 5.4 Power Settings for further information.*

3.4. Kiosk Mode / Advantech MFocus

When set up for Kiosk Mode, the system runs a single, pre-configured application in foreground thereby restricting the user's access to other apps and underlying system services.

NOTICE ***Prevent system malfunction and property damage.***

It is highly recommended that administrators set up limited access rights for users by configuring Advantech MFocus accordingly.

The Kiosk Mode can be configured using the **Advantech MFocus Configuration** app.

The Advantech MFocus default screen is shown below:

Figure 3-1: Kiosk Mode – Advantech MFocus Screen

By default, no applications are enabled and need to be configured first.

Administrators can configure the Advantech MFocus Screen by terminating Kiosk Mode and opening the Advantech MFocus Configuration app as described in the section below.

3.5. Accessing the Android Home Screen

Administrators can access the Android home screen by terminating Kiosk mode:

1. To exit Kiosk Mode, press and hold the background Advantech logo until the password dialog appears.

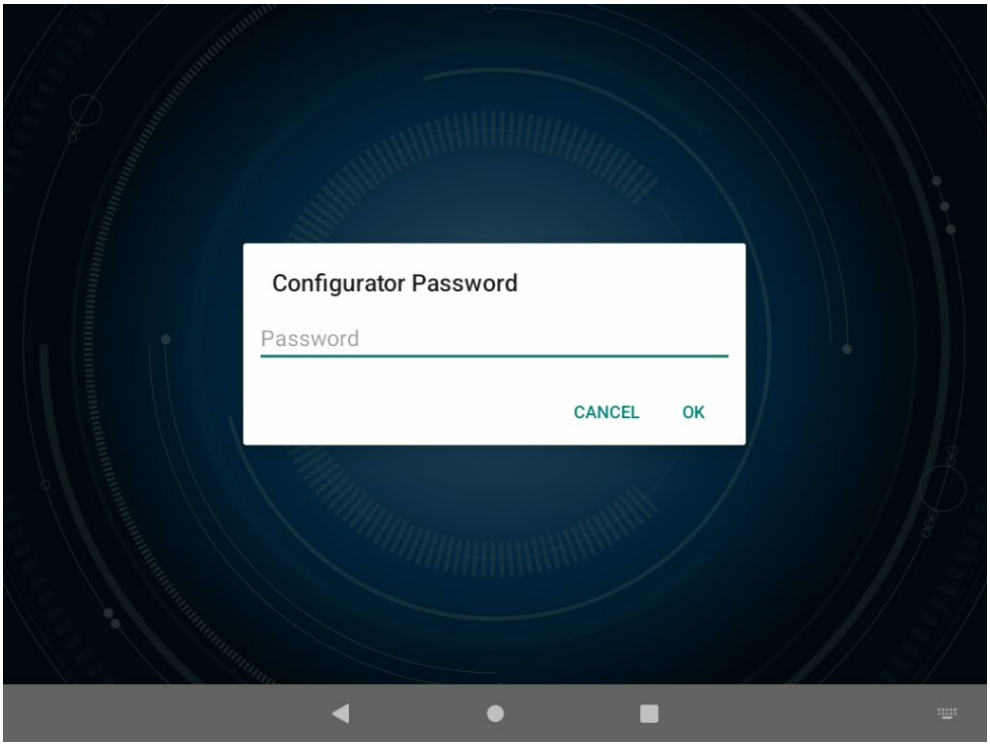


Figure 3-2: Exit Kiosk Mode

2. Input the **Advantech MFocus** password.

The factory setting for this password reads **“gold”** (Use USB or SW virtual keyboard).

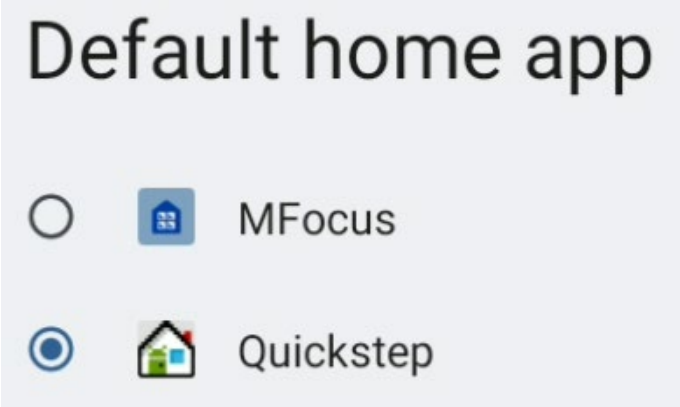


Figure 3-3: Default home screen app selection

3. Change option to **Quickstep** home screen app.

The administrator will now have access to the Android home screen.

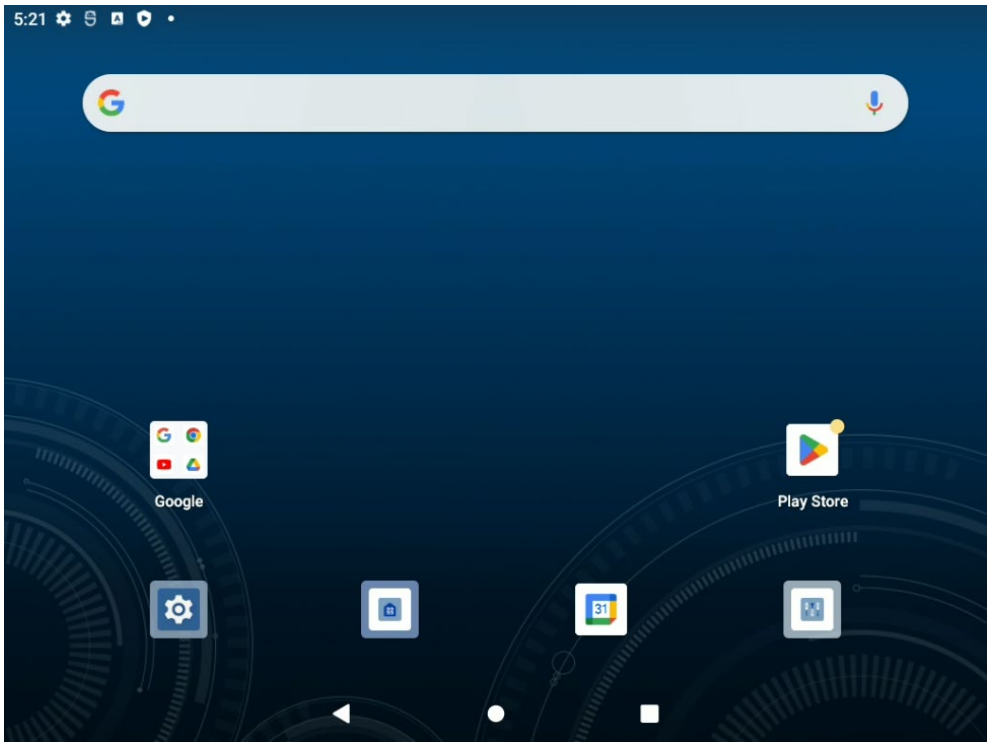


Figure 3-4: Android Home Screen

Scrolling up the main screen you can find all standard applications:

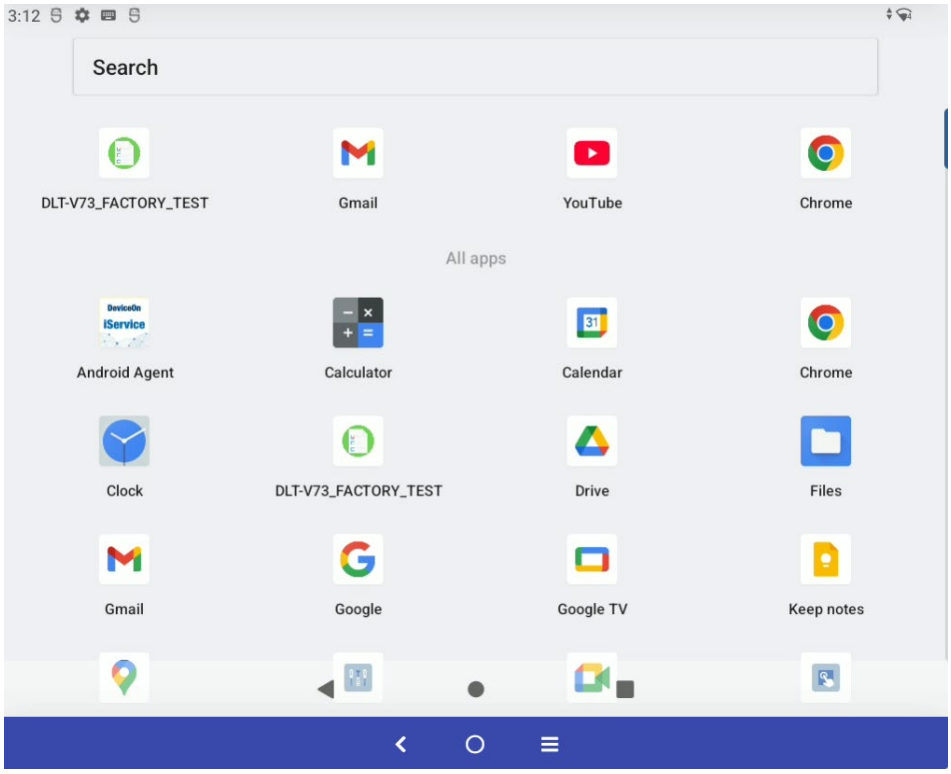


Figure 3-5: Android Home Screen

4. Scroll up until the end of applications listed to see all the features present.

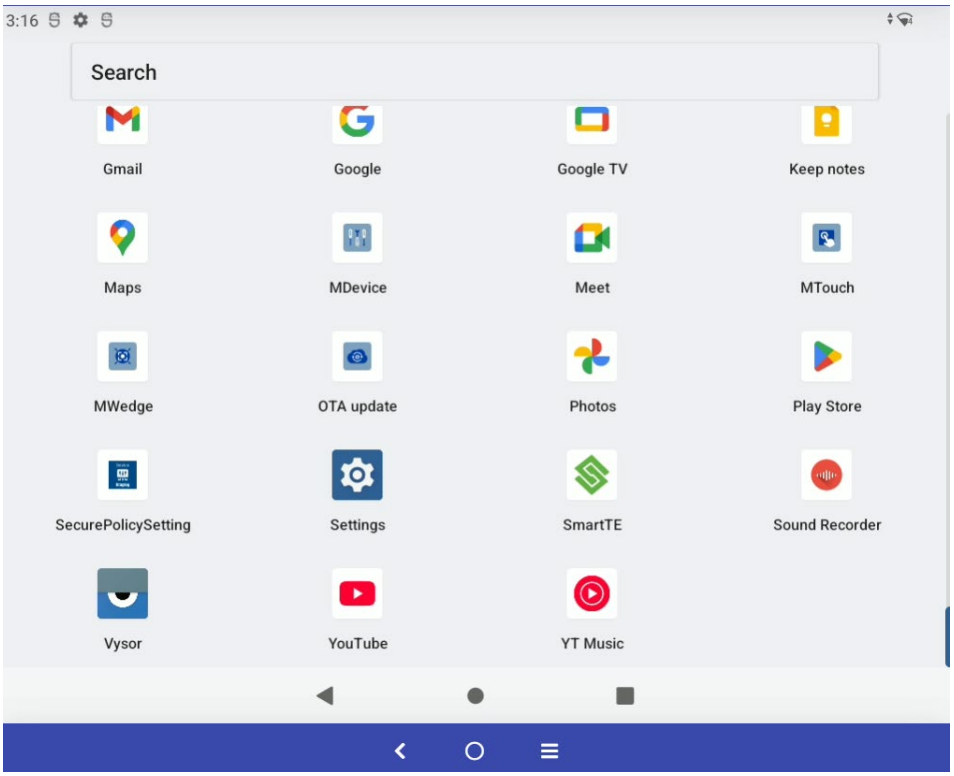


Figure 3-6: Android Home Screen

3.6. Kiosk Mode / Advantech MFocus Configuration

The Advantech MFocus Configuration app can be used to set the configuration parameters for Kiosk Mode.

The screen below shows the Advantech MFocus configuration mask:

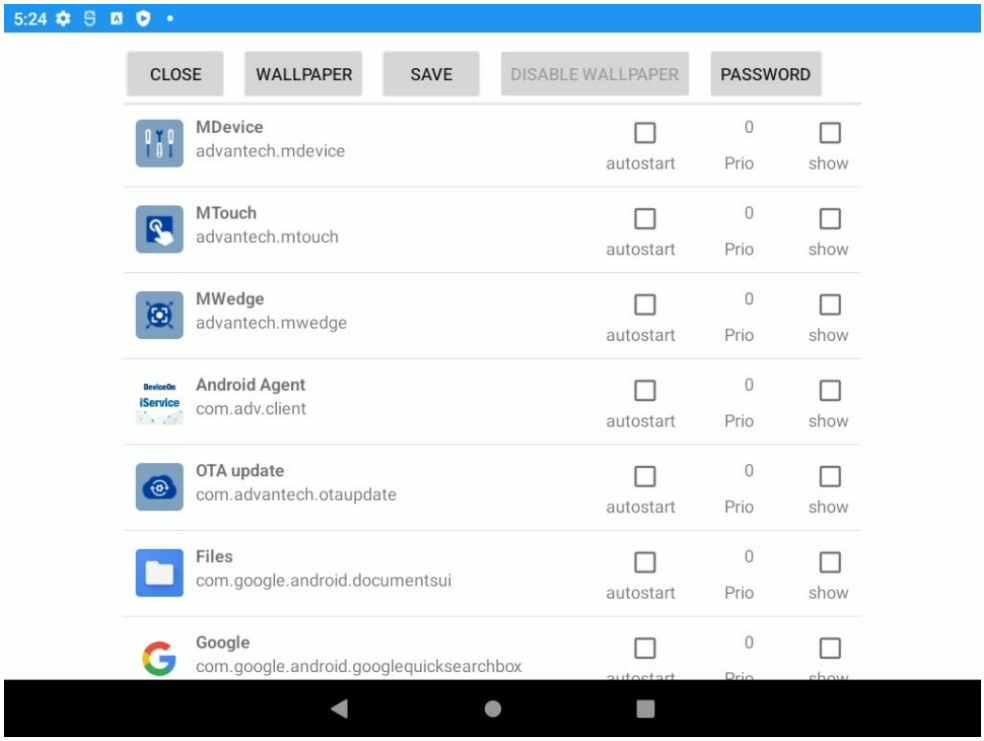
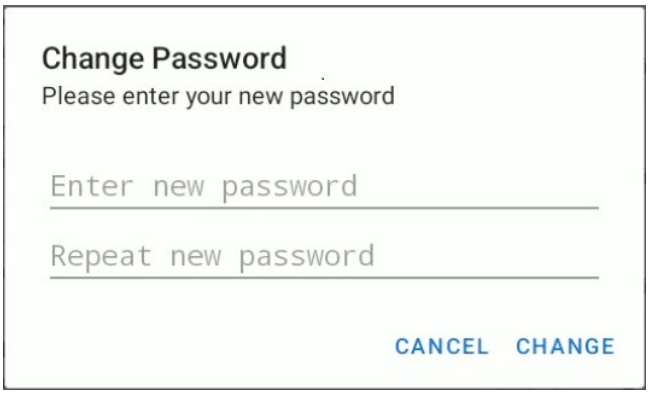


Figure 3-7: Advantech MFocus Configuration

The following options can be selected on a per app basis:

Autostart	If checked, the application will be started automatically on each boot. If an application has been selected for **Autostart**, it will implicitly be whitelisted (cf. show below).
Prio	Sets the priority when multiple applications are to be started. Applications with the lowest priority will be started last. ***NOTE:*** *Please define ascending priority numbers when more than one application should be started (Prio 0, 1, 2, etc.).*
Show	Whitelists applications in kiosk mode. The application's icon will be shown on the Kiosk Mode Home Screen.

General options as follows:

Close	Close the application.
Wallpaper	To exchange default wallpaper with customized one.
Save	Save the settings. ***NOTE:*** *The application is not auto-saving the parameters on exit.*
Disable Wallpaper	To remove customized wallpaper.
Password	To change password (standard reads "**gold**").  Figure 3-8: Advantech MFocus Configuration – change Password

3.6.1. Set customized Wallpaper

To exchange default Wallpaper with customized one follow the next instruction:

1. Copy a new Wallpaper to the DLT-V73A terminal using a standard USB-Stick or by USB ADB connection.

2. For more details please refer to chapter *7.4 USB-Stick (file transfer)* / *7.9 ADB over USB (Type-C)*.

3. Open Advantech MFocus Configuration and press icon WALLPAPER.

4. Press icon ☰ at left upper corner.

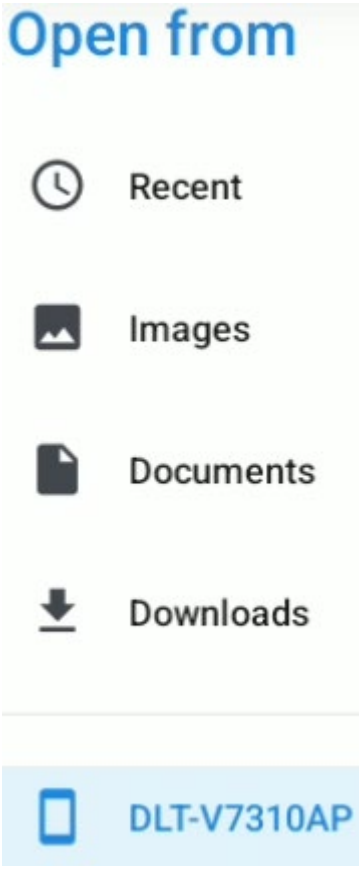


Figure 3-9: Advantech MFocus – Internal Memory Storage

5. Select from list item called **DLT-V7310AP.**

6. Change to subfolder containing the Wallpaper.

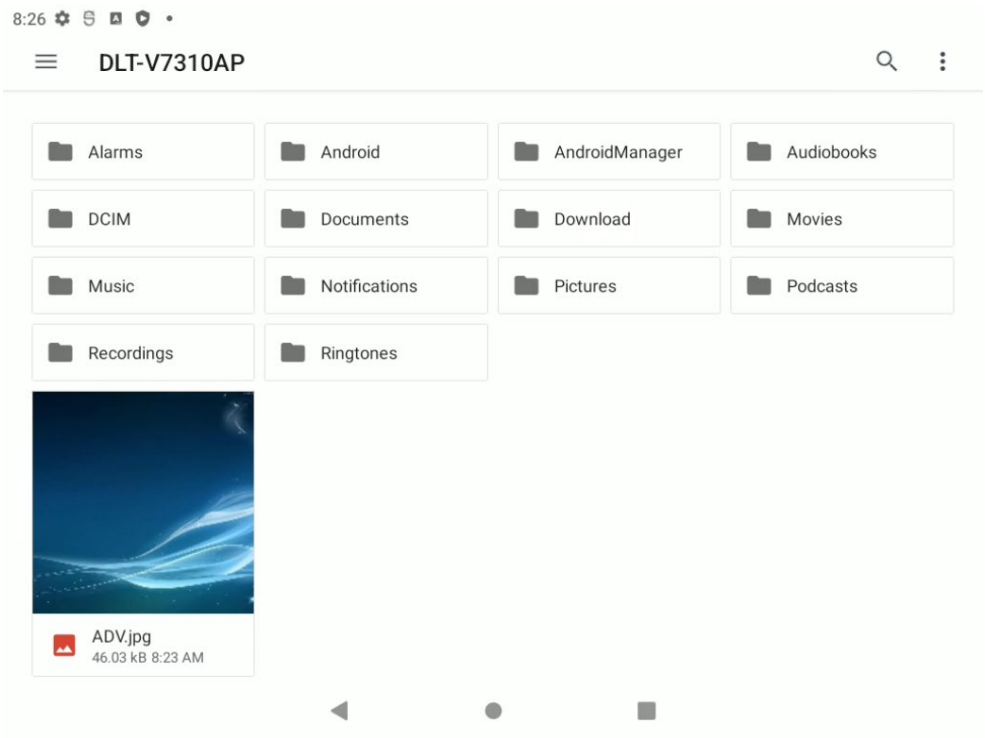


Figure 3-10: Advantech MFocus – Wallpaper Location

7. Select the Wallpaper image (Example ADV.jpg).

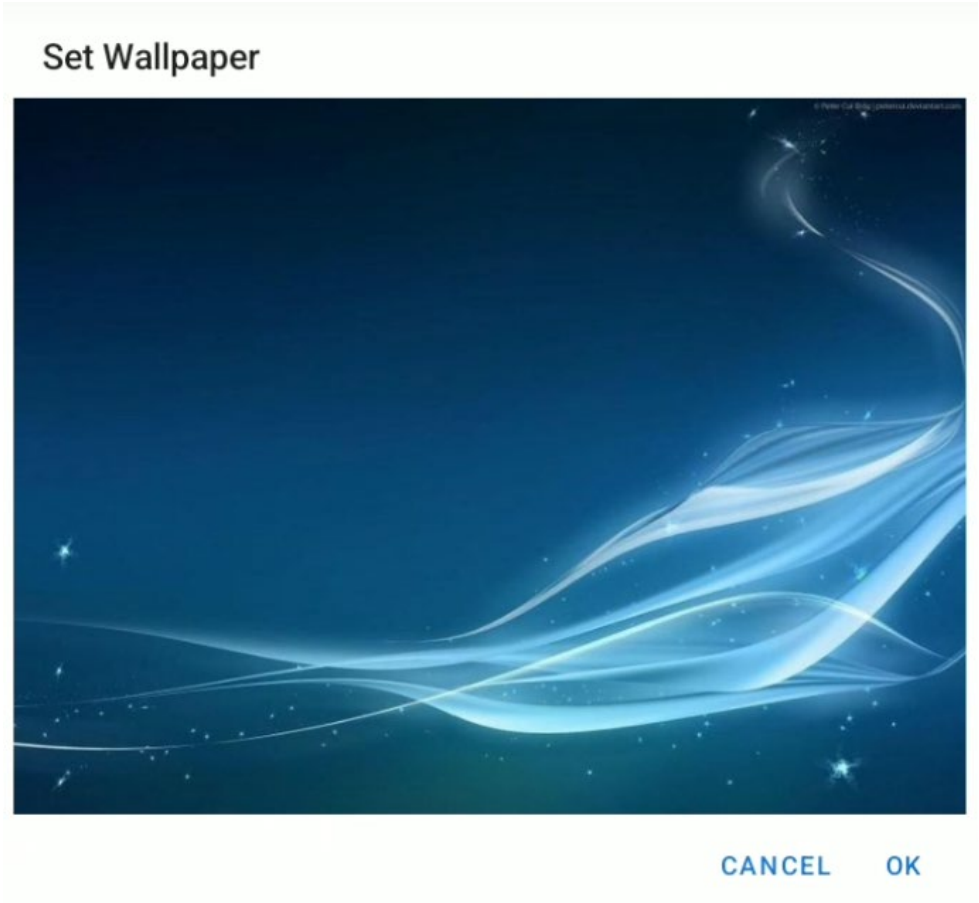


Figure 3-11: Advantech Launcher – Customized Wallpaper example

8. Press button **OK,** the following status dialog will be shown during save progress.

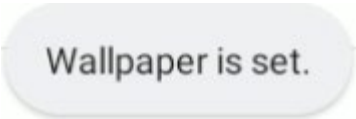


Figure 3-12: Advantech MFocus – Wallpaper save progress

Example view of updated Wallpaper (Kiosk Mode):

Figure 3-13: Advantech MFocus – Customized Wallpaper example

3.6.2. Switch default Home app (Advantech MFocus / Quickstep)

To activate the Kiosk Mode / Advantech MFocus or to restore the default Android Quickstep Home application, follow the instructions below.

1. Open **Settings.apk** (Option **Apps**).

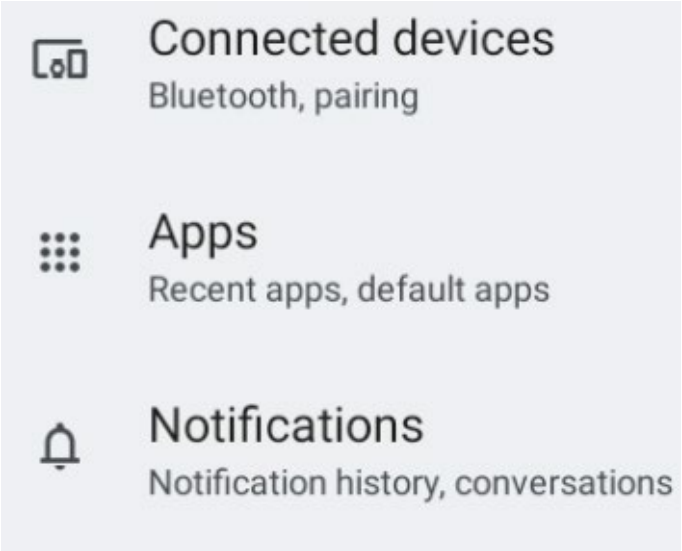


Figure 3-14: Switch default Home app, open Settings.apk

2. Select MFocus app and scroll down until option **Home app** is visible.

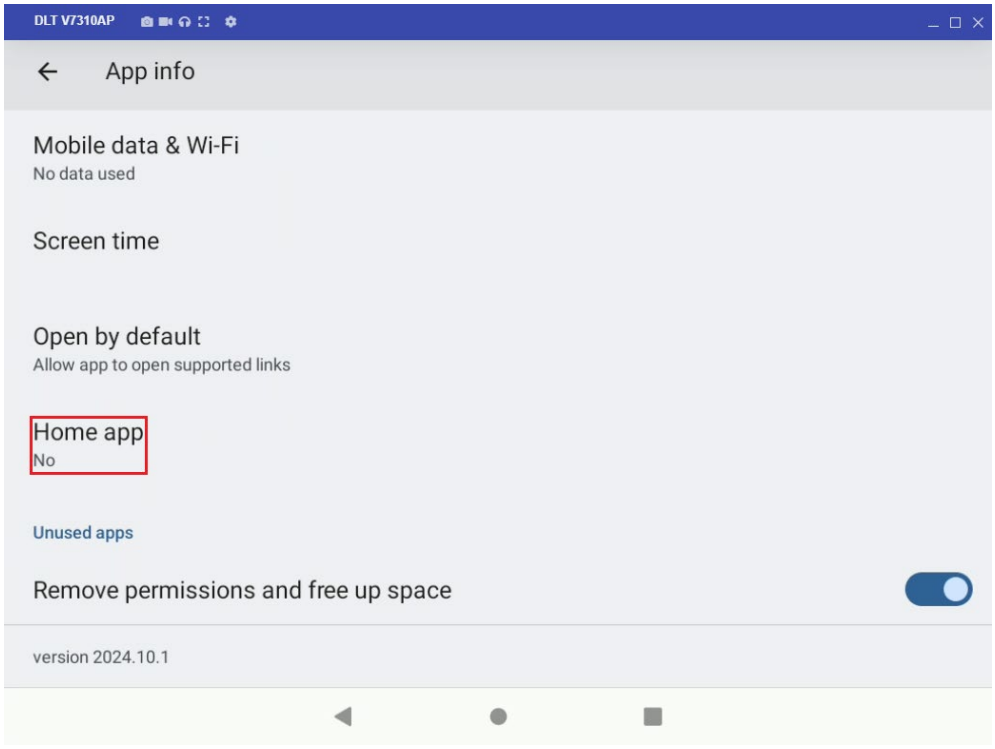


Figure 3-15: Switch default Home app

3. Press item **Home app,** the following sub dialog will be shown:

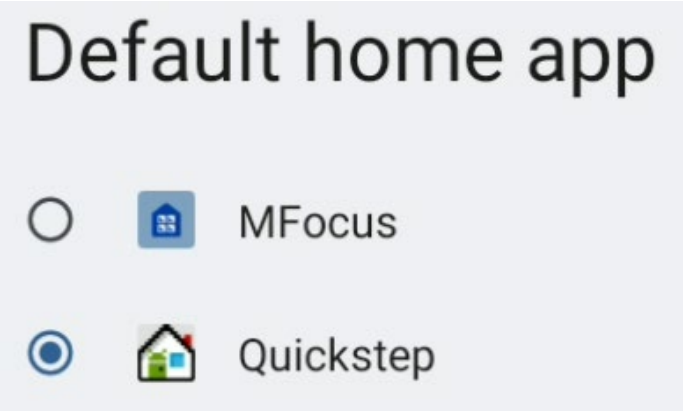


Figure 3-16: Switch default Home app, select Home app

4. Select between Advantech **MFocus** and **Quickstep**.

The selected home app will be started automatically.

NOTE *The home app will also be automatically restored after a performed system reboot until it is being changed again using the **Settings.apk** option as described above.*

NOTE *Once Advantech MFocus mode has started, please make sure that there are no open applications in background by pressing*  *icon.*

Figure 3-17: Scroll up MFocus Window and check the applications in background

If the mask you have created contains applications to AUTOSTART, close only the additional applications in the background, otherwise select CLEAR ALL.

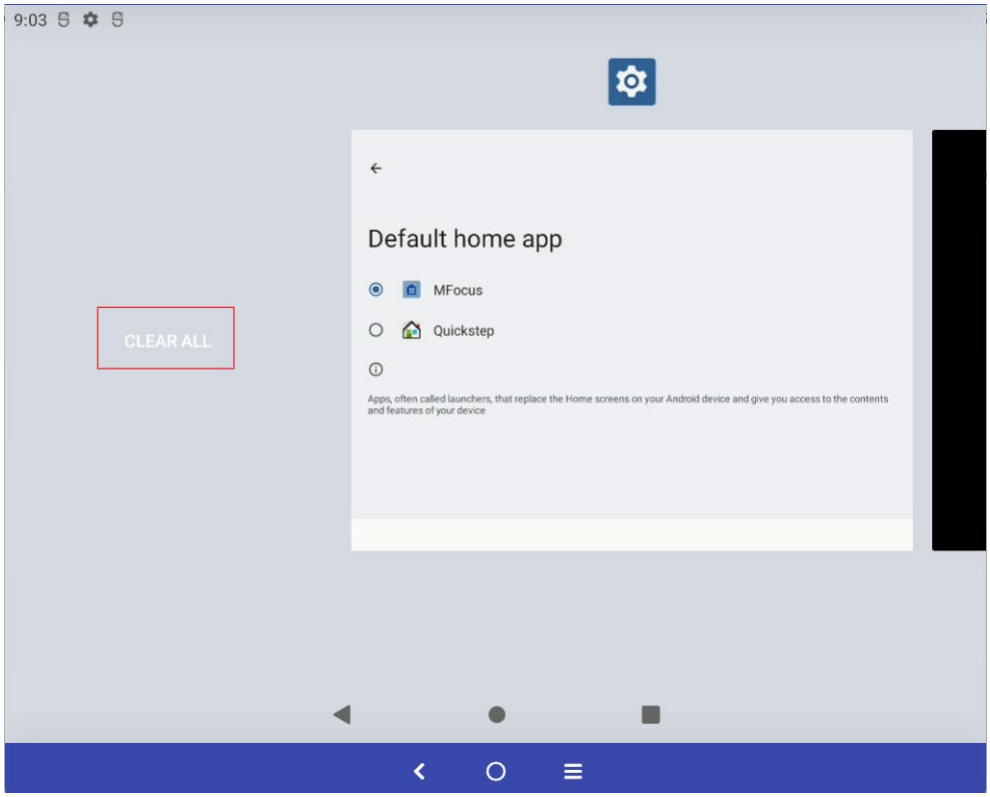


Figure 3-18: Select CLEAR ALL to close all background applications

5. Close the windows in addition the apps you chose in your mask.

Now MFocus is ready to be used by the operator. The administrator can easily change the mask by going to default Home and entering the Password (for more info read the section *3.5 Accessing the Android Home Screen*).

4. Settings Menu

4.1. Common Settings

Android can be configured using the **Settings** menu as found on commercial Android devices.

NOTE *Please refer to documentation available on the Internet for common Android settings and features.*

The following section provides an overview and addresses aspects, which are specific to **Android**.

Additionally, special features of **Android** and the DLT-V73A can be configured using MDevice as described in chapter *5 MDevice Utility*.

4.2. Suggestions

This section contains suggestions created automatically by the Android system.

4.2.1. Network & Internet

WLAN

The menu item shows you the current enablement and connection status. Clicking on the item is taking to the wireless settings menu, which is described in greater detail in manual section *7.1 WLAN Roaming*.

Ethernet

The menu item shows you the current enablement and connection status. Clicking on the item is taking to the Ethernet settings menu, which is described in greater detail in manual section *7.2 Ethernet settings*.

Mobile network

This item takes you to a submenu containing additional GPRS related configuration item, which is described in greater detail in manual section *7.3 GPRS / GNSS Settings.*

4.2.2. Connected Devices

Bluetooth

This menu item shows the current status of the Bluetooth connection. This item can be used to enable/disable Bluetooth support as well as perform pairing with Bluetooth devices.

NFC

This menu item shows the current status of the NFC connection. This item can be used to enable/disable NFC support as well as perform pairing with NFC devices.

NFC uses frequency 13.56MHz specified by ISO/IEC 18000-3.
NFCIP-1 and NFCIP-2, ISO/IEC 14443, ISO/IEC 15693, MIFARE.

NOTE

For further information please see the DLT-V73A manual on our websites.

www.advantech.com

4.2.3. General Settings

Apps & Notifications

The menu item allows managing the apps installed on your device. Please note that apps, which have been pre-integrated into Android, cannot be uninstalled. To deactivate such an app, choose **Disable** in the related submenu. The submenu Notifications can be used to manage which type of notification privileges individual apps have on the system.

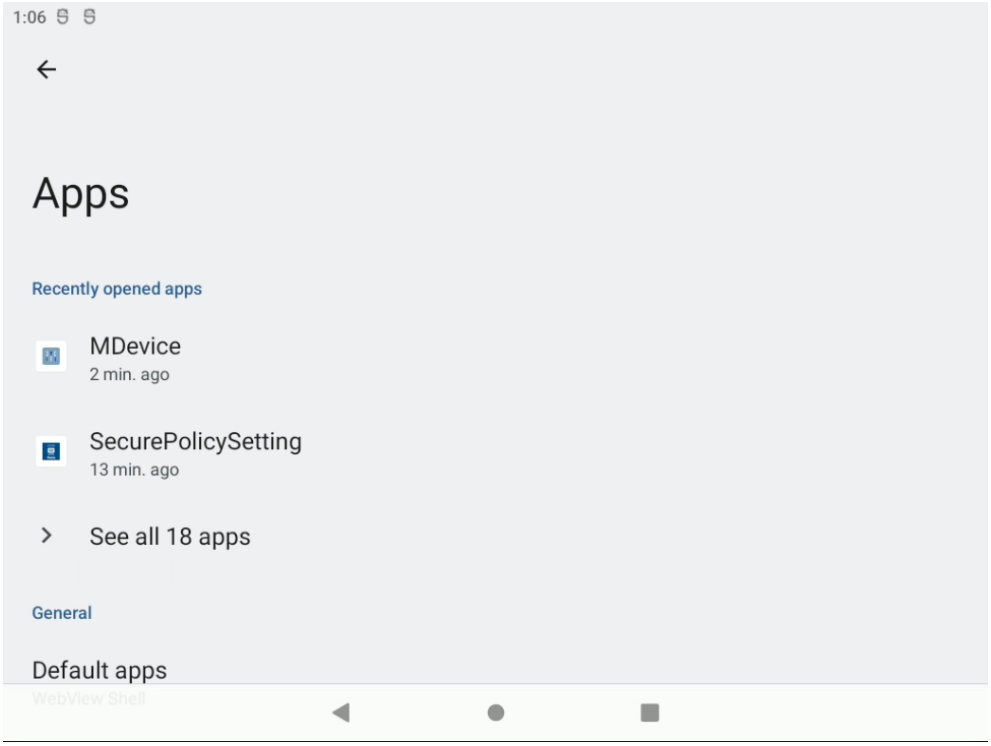


Figure 4-1: General Settings – Apps & Notifications

Storage

This menu item shows you the current internal storage usage.

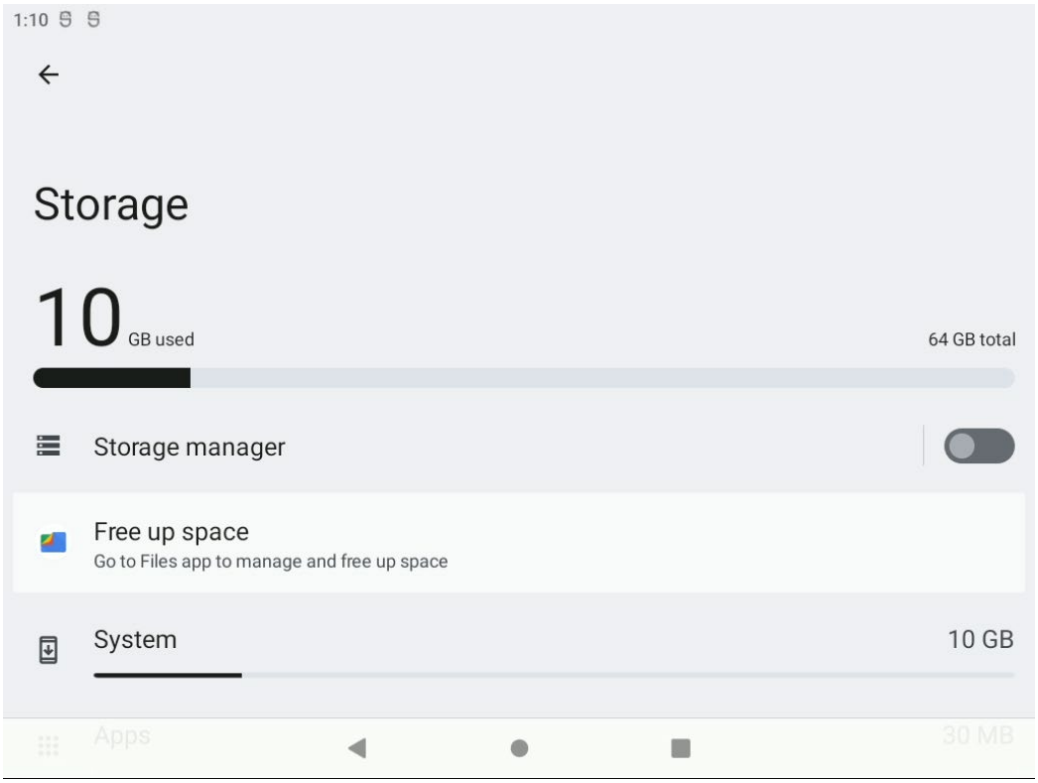


Figure 4-2: General Settings – Storage

NOTE *If required, the internal storage can be enhanced with an optional SD card.*

Sound

This item takes you to a submenu that allows tweaking the volume for different type of system sounds as well as select the related ringtones.

Figure 4-3: General Settings – Sound

Display

This item takes you to a submenu that provides configuration options for the user interface such as selecting a wallpaper or defining font sizes. Please note that display brightness is managed by the related buttons on the front panel or by activating the ALS (ambient light sensor) “automatic” brightness control.

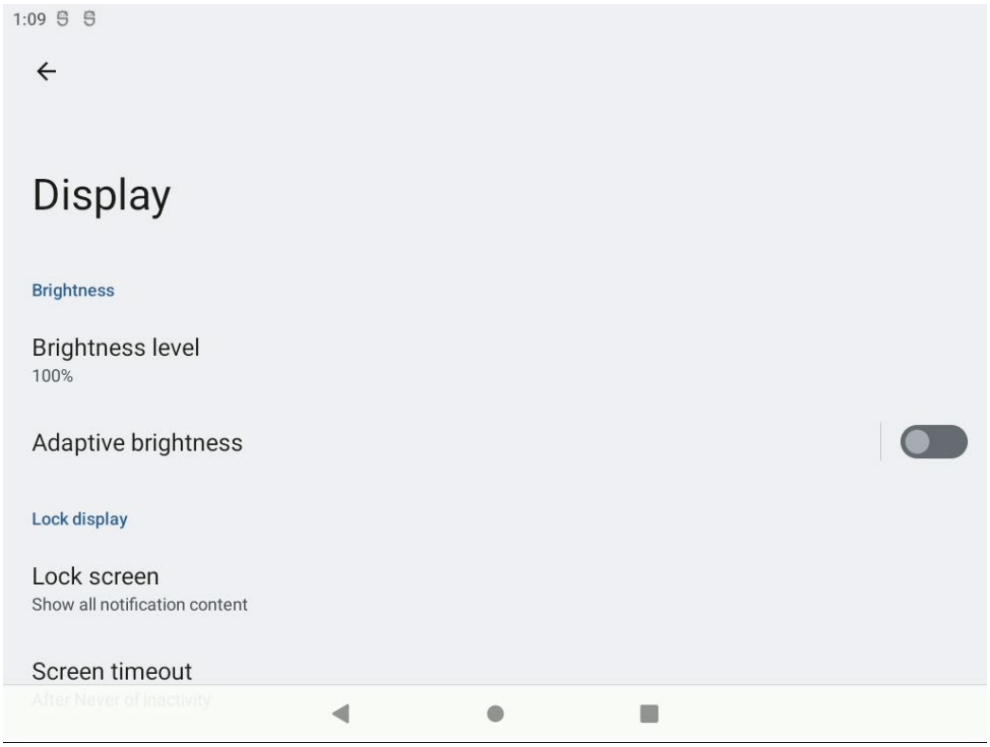


Figure 4-4: General Settings – Display

Accessibility

Accessibility allows configuring various aspects of the user interface of your device. A submenu opens when you click on this item.

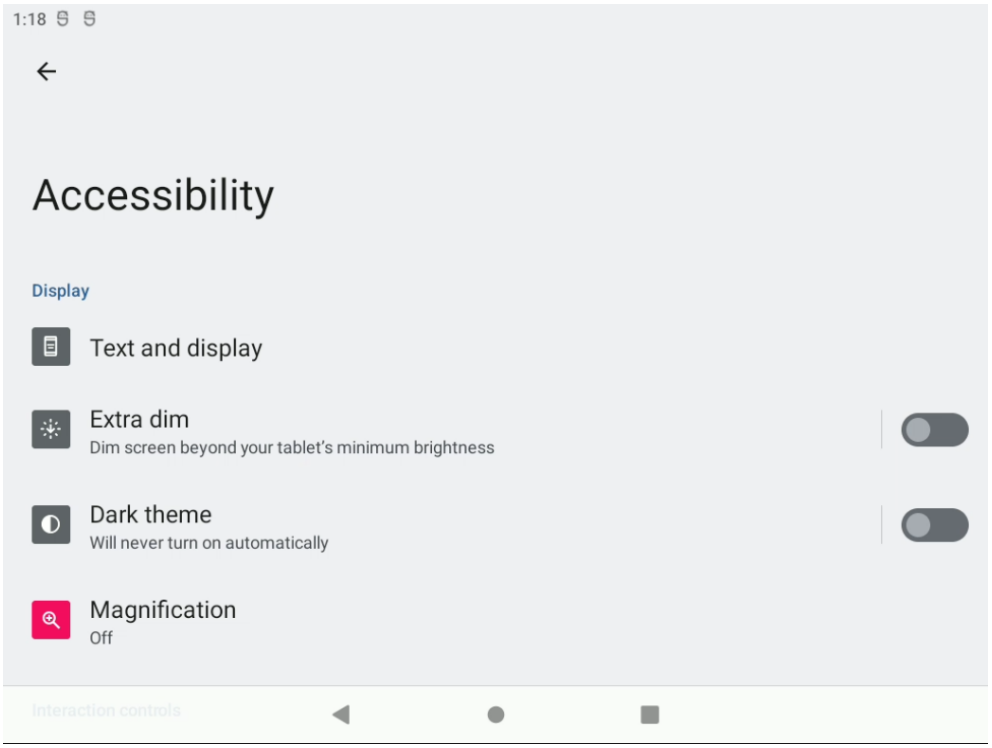


Figure 4-5: Security and location – Accessibility

System - Multiple Users

This item allows you to add multiple users to the device. Details are described in section *7.8 Multiple Users*.

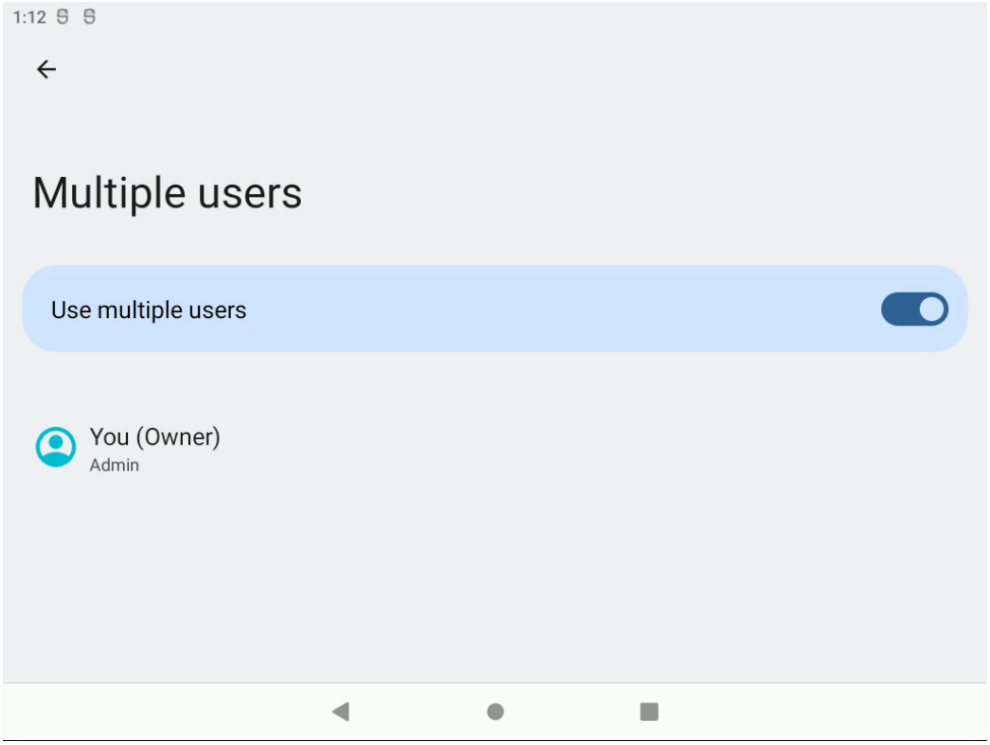


Figure 4-6: General Settings – Multiple users

4.2.4. Security & location

Device Security

This item takes you to a submenu for managing the system's security settings.

Screen lock provides the option to enable and configure the timeout for a lock screen. This option is disabled by default.

Location allows you to enable device location.

Show passwords defines if password characters are visible on screen when typing passwords or not.

Device admin apps allows managing the privileges for device administration.

SIM card lock (option only available at DLT-V73A GPRS enabled device).

Encryption & credentials allows you to encrypt the device completely.

Trusted Credentials contains a list of certificate authorities, which are regarded trusted by the Android Open-Source Project. If you wish to install applications that have been signed, the certificates used for signing the apps need to be rooted back into one of the Trusted CAs listed.

User credentials allows managing user passwords.

Install certificates from storage allows installing certificates via storage devices or via downloading from a web site.

Clear credentials perform a wipe of all certificates installed.

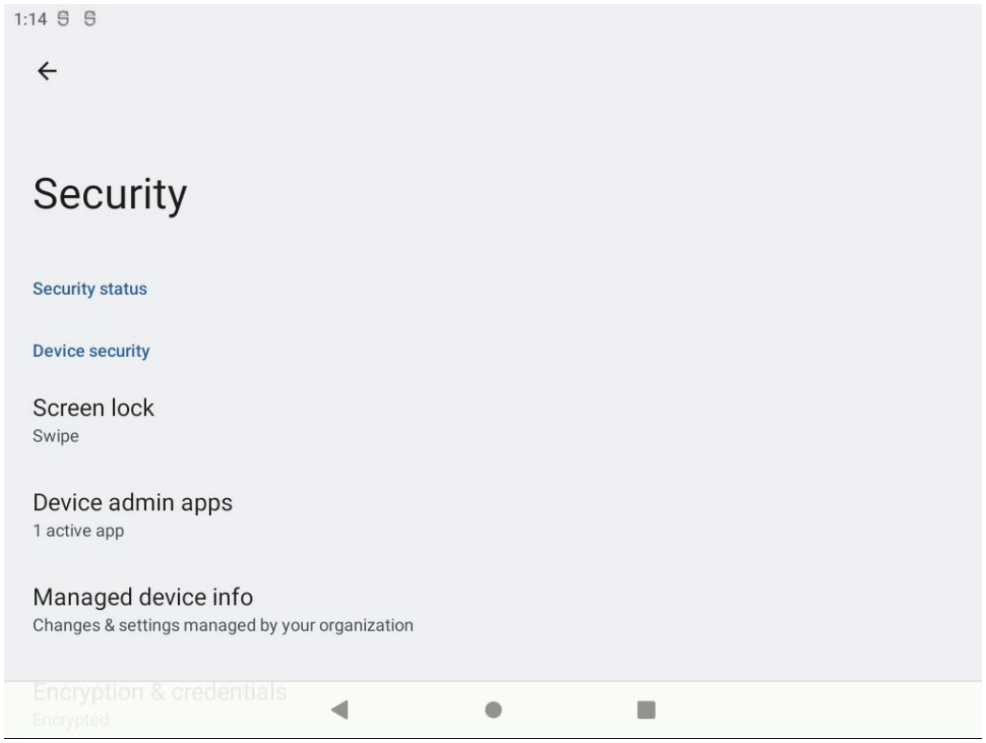


Figure 4-7: Security and location – Device Security

Passwords & accounts

This item allows managing accounts on your device.

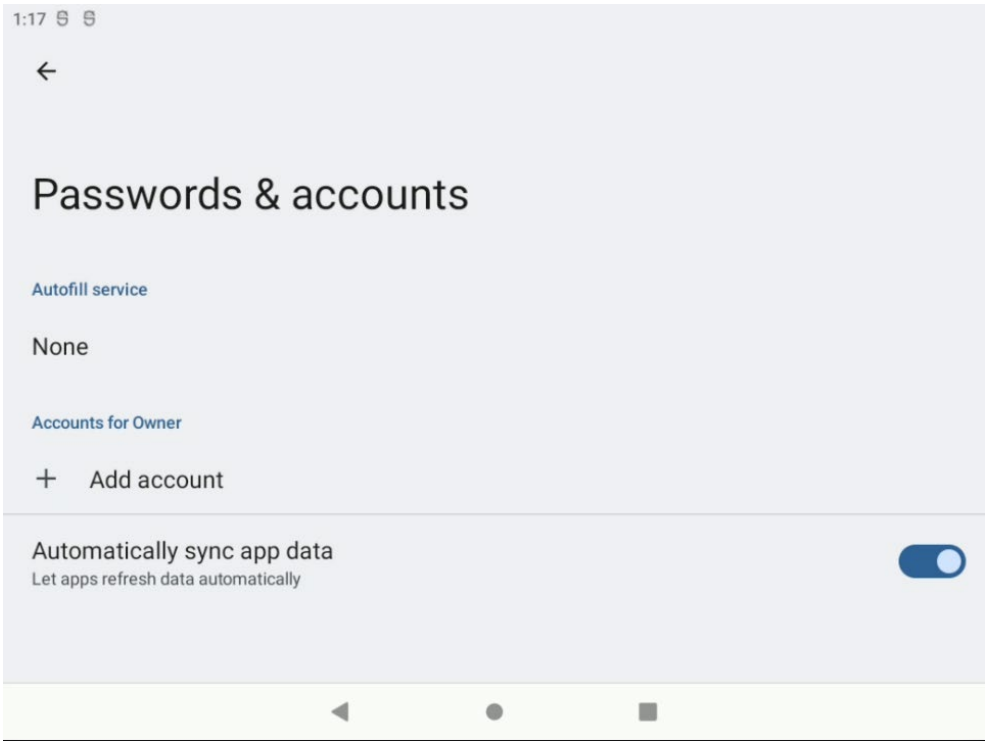


Figure 4-8: Security and location – Passwords & accounts (AOSP)

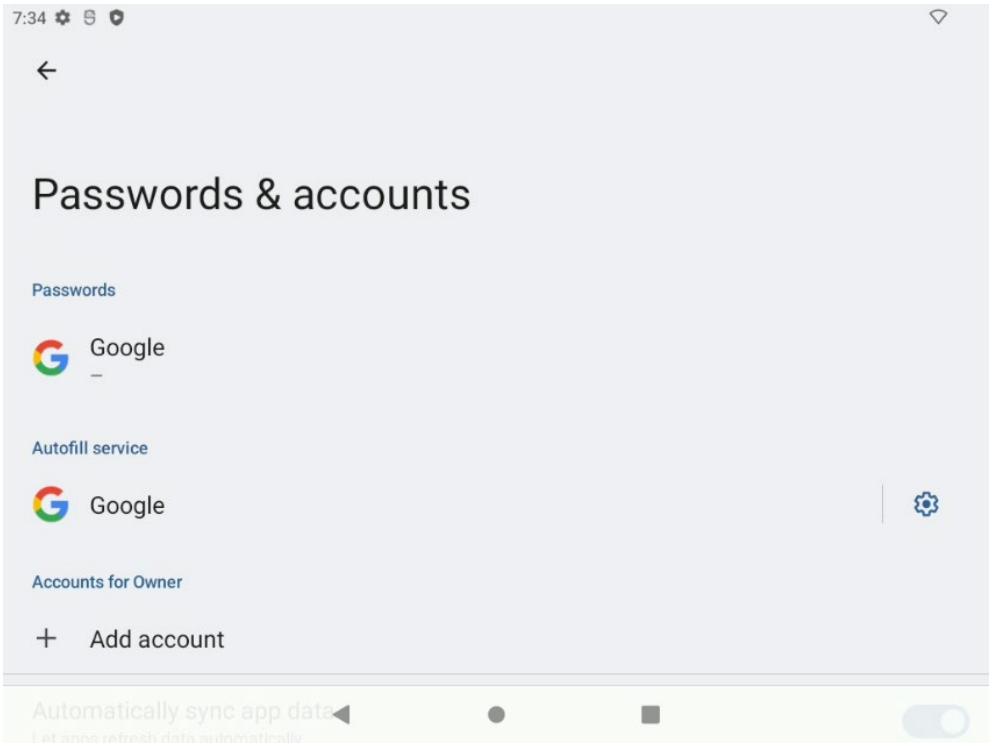


Figure 4-9: Security and location – Passwords & accounts (GMS)

4.2.5. System

About Tablet: Obtaining information about your device

About Tablet provides you with a wealth of information about your device.

Legal Information provide details about the licenses of the Android system as well as any 3rd party applications.

Model is the DLT-V73A.

Android Version provides Google's Version number for the Android installed on your system.

Android security update represents the information, which is the last security update that has been integrated into Android. Clicking on this item will open a hyperlink and guide you to the related Android security bulletin.

Kernel Version provides detailed version information on the underlying Linux Kernel of Android.

Advantech Version provided Advantech's Version number for the Android installed on your system.

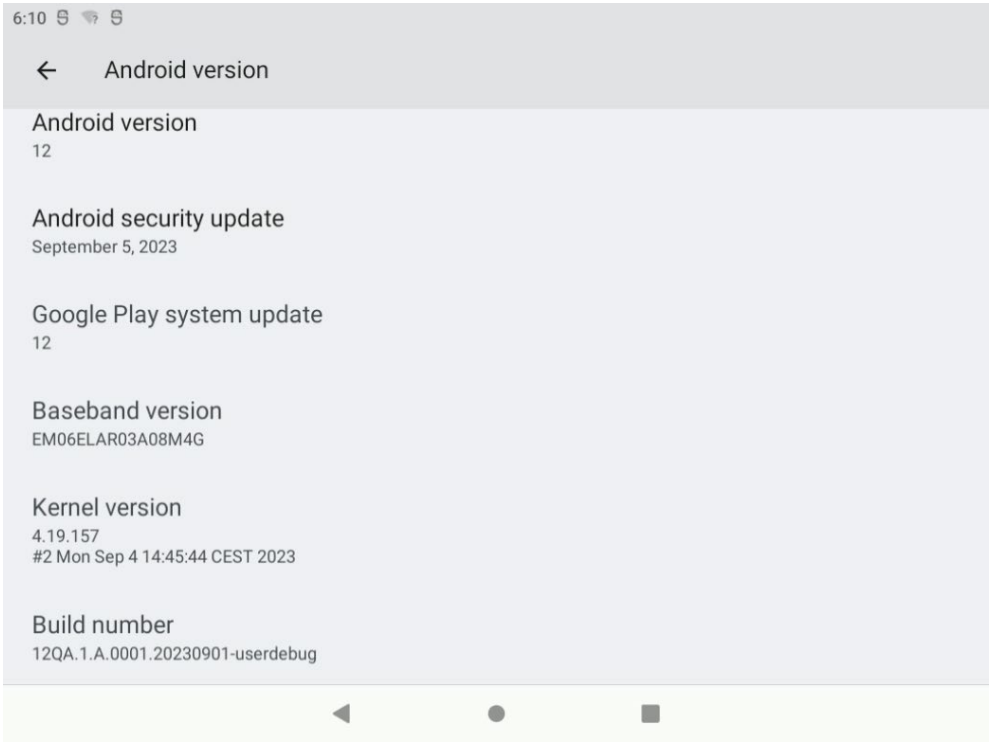


Figure 4-10: System – About tablet

Languages & input

This item allows configuring various input options such as the keyboard language and layouts as well as spelling checking and user dictionaries.

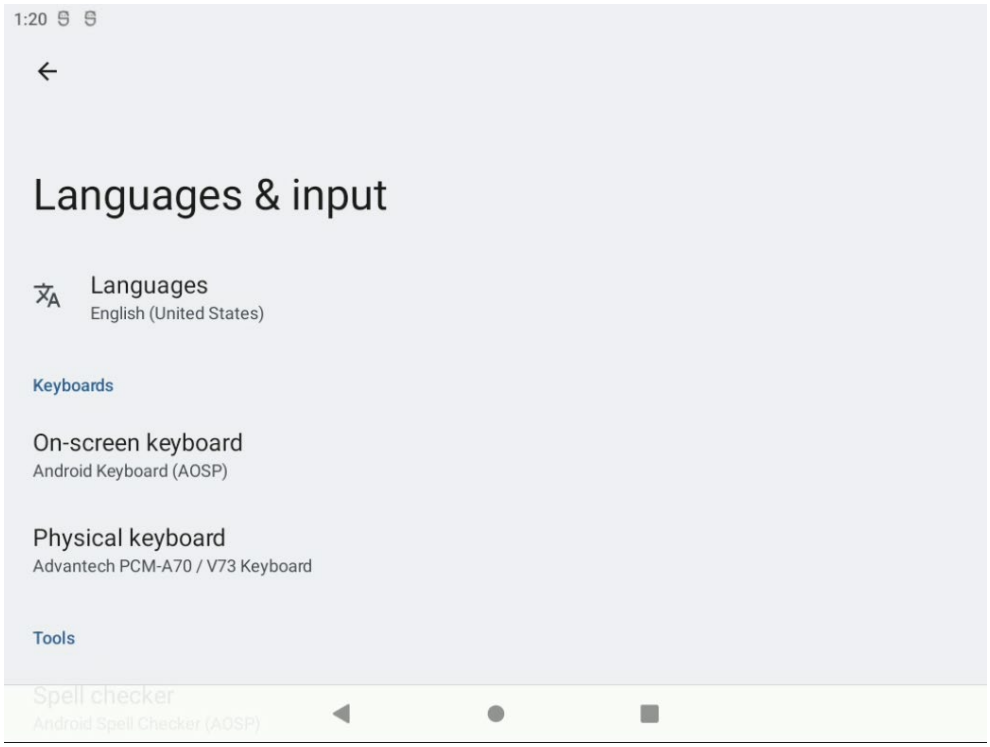


Figure 4-11: System – Languages & input

Date & time

This item displays the current time zone that is set on this device and allows you to adjust the time zone.

Please note that the option to update the time zone via a mobile network is not functional, as Android and the DLT-V73A do not have mobile network support.

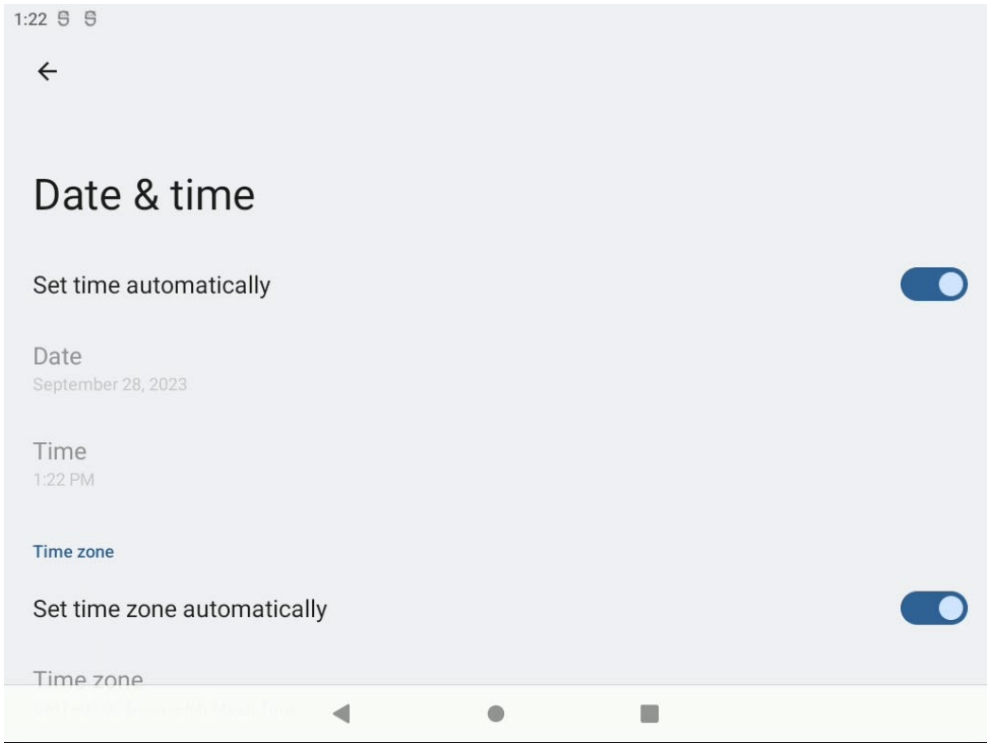


Figure 4-12: System – Date & time

Reset options

This item allows wiping the device via a factory reset. Details are described in section *7.7 Factory Reset.*

5. MDevice Utility

5.1. Basic safety notes

The MDevice Utility allows changing the configuration of your DLT-V73A device.

NOTICE ***Prevent system malfunction and property damage.***

Only IT skilled persons (qualified personnel) with a good knowledge of PCs, operating systems and wireless networks are permitted to configure the DLT-V73A with MDevice.

If improper changes of MDevice are performed by the customer, the releases Advantech Co., Ltd. from all liability for warranty claim.

MDevice should not be whitelisted for all users. It should be only accessible for administrators.

5.2. Start MDevice Utility

By clicking the MDevice icon from the Apps screen, the user can launch the utility.

Figure 5-1: Apps screen → MDevice utility

5.2.1. User and Admin modes

The MDevice Utility differentiates two privilege levels: **User** and **Admin**.

In **User mode**, MDevice can only be used to review system configuration, retrieve device specific information (e.g., serial number, software versions, etc.) and check system health status (e.g., system temperature).

In **Admin Mode**, MDevice provides full access to modifying the configuration and settings of your DLT-V73A.

When launched, the login screen of MDevice pops up:

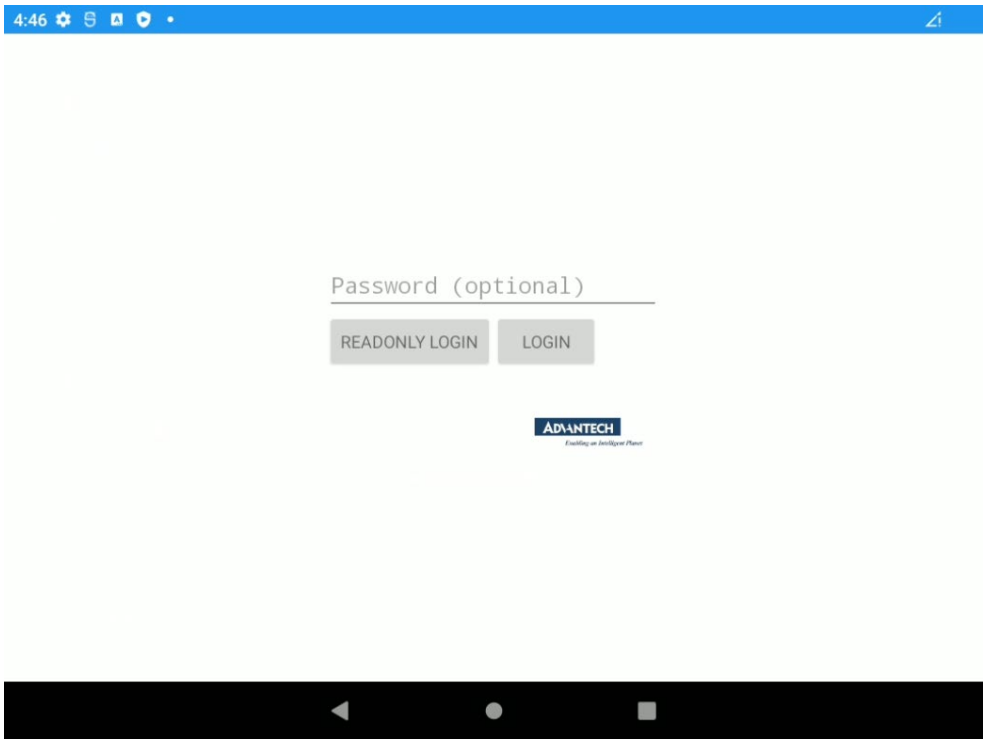


Figure 5-2: MDevice login screen

If you want to login in **User mode**, simply click **READONLY LOGIN.** A password is not required.

To launch in **Admin mode**, enter the MDevice password and click **LOGIN**.

The default MDevice password: **gold**

NOTICE ***Prevent system malfunction and property damage.***

For security reasons it is highly recommend to change the MDevice password when you first login.

To change the password, use the **MDevice Settings** menu on the left side of the MDevice screen:

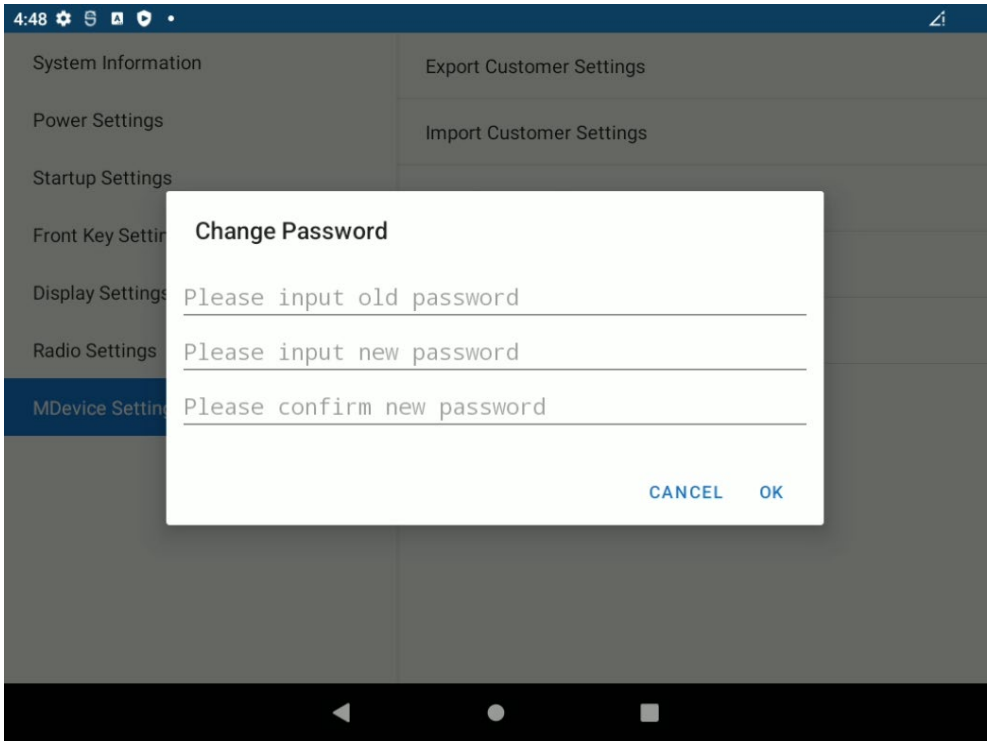


Figure 5-3: MDevice Settings – Change Password

5.3. MDevice Functional overview

NOTE

You need to perform a power cycle of the device to activate the new device settings of MDevice.

Please wait at least 10 seconds after last settings change before power cycle is being initiated.

The MDevice menu is on the left side of the MDevice screen.

Click one of the menu items to switch to the corresponding menu.

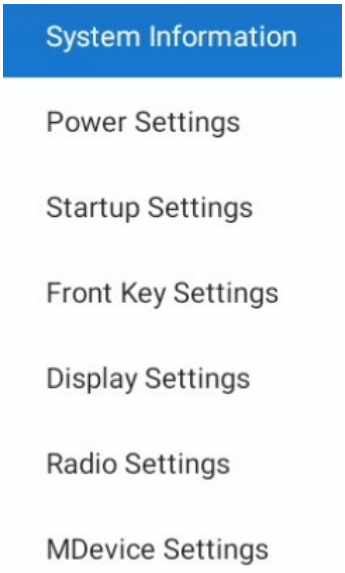


Figure 5-4: MDevice Functional overview

System Information	Displays system specific information and health status (e.g., serial number, system temperature, etc.)
Power Settings	Configures the automatic start and shutdown behavior including related parameters
Startup Settings	Configures how the system starts up and which programs are automatically started when booting the device
Front Key Settings	Allows assigning function keys to the physical special keys on the DLT-V73A front panel
Display Settings	Configures the touch panel, e.g., touch sensitivity and calibration (calibration only available at resistive touch front)
Radio Settings	To configure (WLAN \ Bluetooth) modules including “internal/external” antenna feature
MDevice Settings	Configuration of MDevice

5.3.1. System Information

In the **System Information** menu, device system information is displayed. All the items are read-only. Multiple sections are provided. You may need to scroll down and up accordingly.

HARDWARE section:

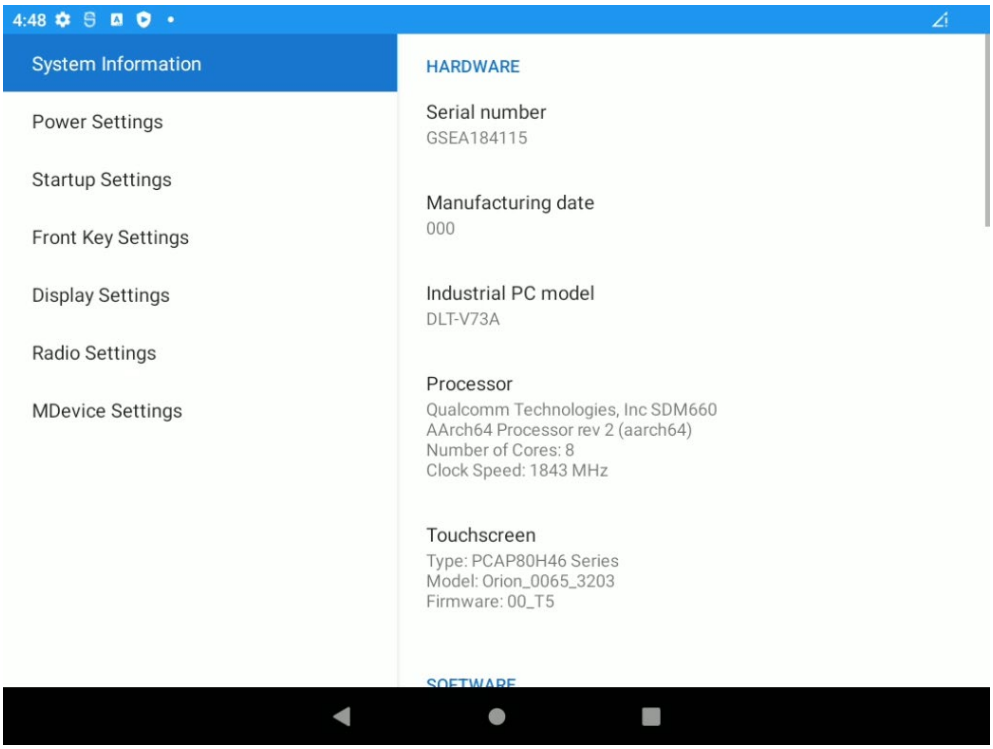


Figure 5-5: MDevice – System Information, HARDWARE

This section summarizes key system HARDWARE information:

Serial number	Serial number of your DLT-V73A
Manufacturing date	Calendar week and year
Industrial PC model	Model number of your DLT-V73A
Processor	Shows CPU manufacture and type
Touchscreen	Shows type, model and firmware

BATTERY (UPS) section: (optional)

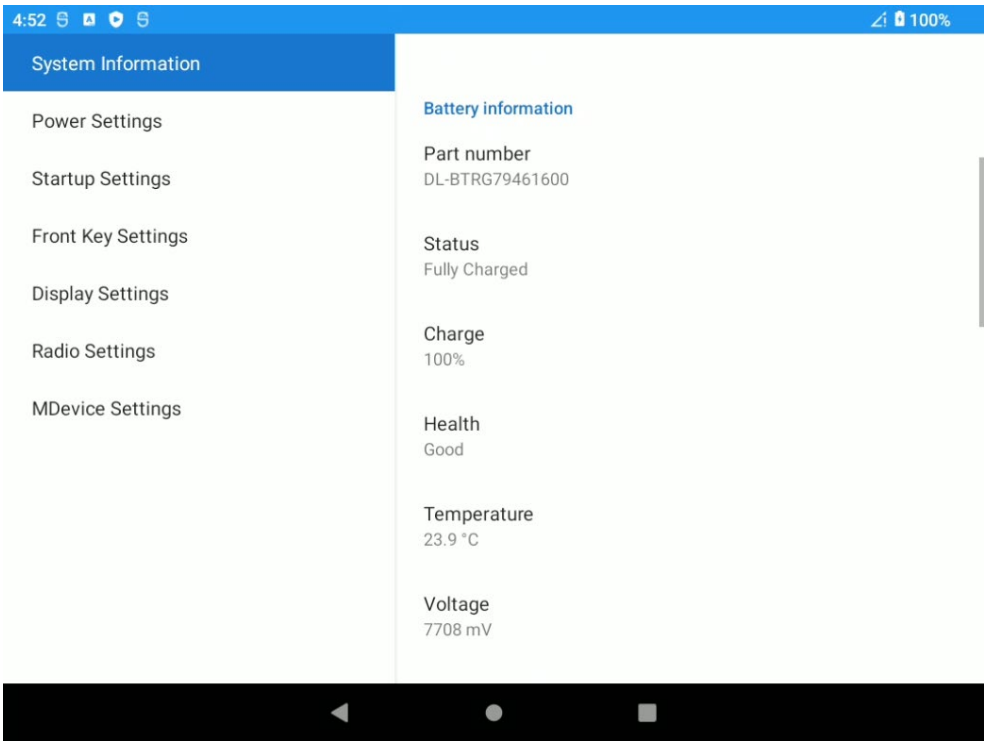


Figure 5-6: MDevice – System Information, Battery information

This section displays battery (UPS) information.

Part number	Advantech part number of battery (UPS)
Status	Displays current status (Charging, Discharging)
Charge	Current remaining battery (UPS) capacity
Health	HW status of battery (UPS) detected
Temperature	Current measured temperature
Voltage	Current measured voltage

NOTE *Battery (UPS) information is only displayed if installed at DLT-V73A terminal (optional).*

SOFTWARE section:

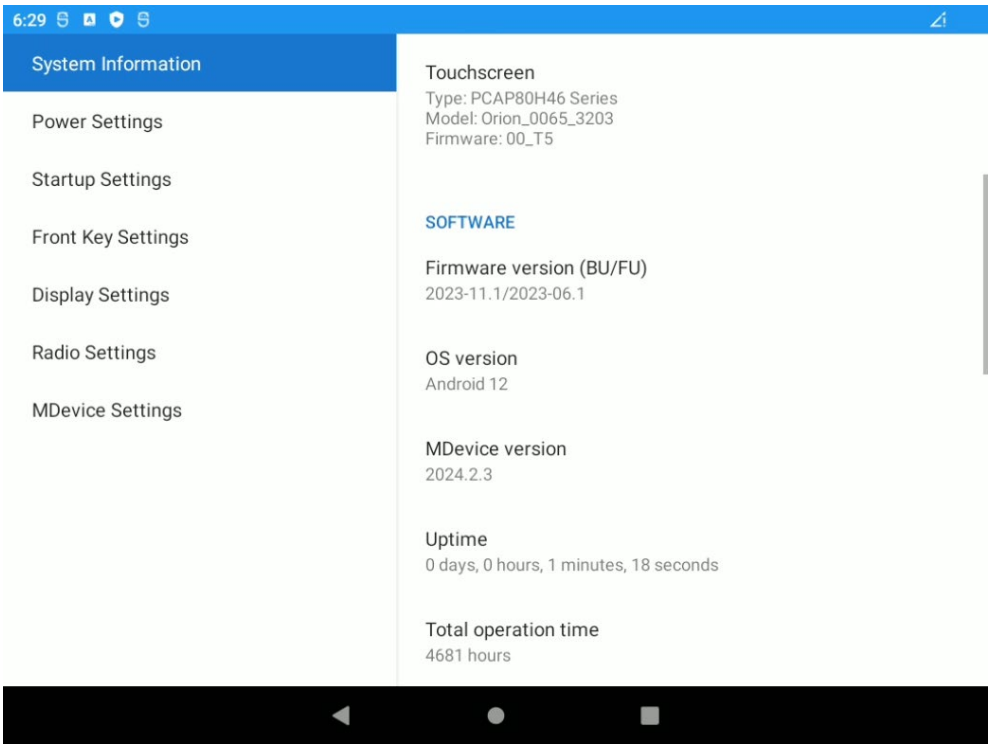


Figure 5-7: MDevice – System Information, SOFTWARE

This section summarizes key system SOFTWARE information:

Firmware version (BU/FU)	Firmware versions of the MDevice microcontrollers (Baseunit / Frontunit)
OS version	Android and versions
MDevice version	Revision of the MDevice utility
Uptime	Current session runtime since last system startup
Total operation time	Aggregate power-on hours of your DLT-V73A

TEMPERATURE section:

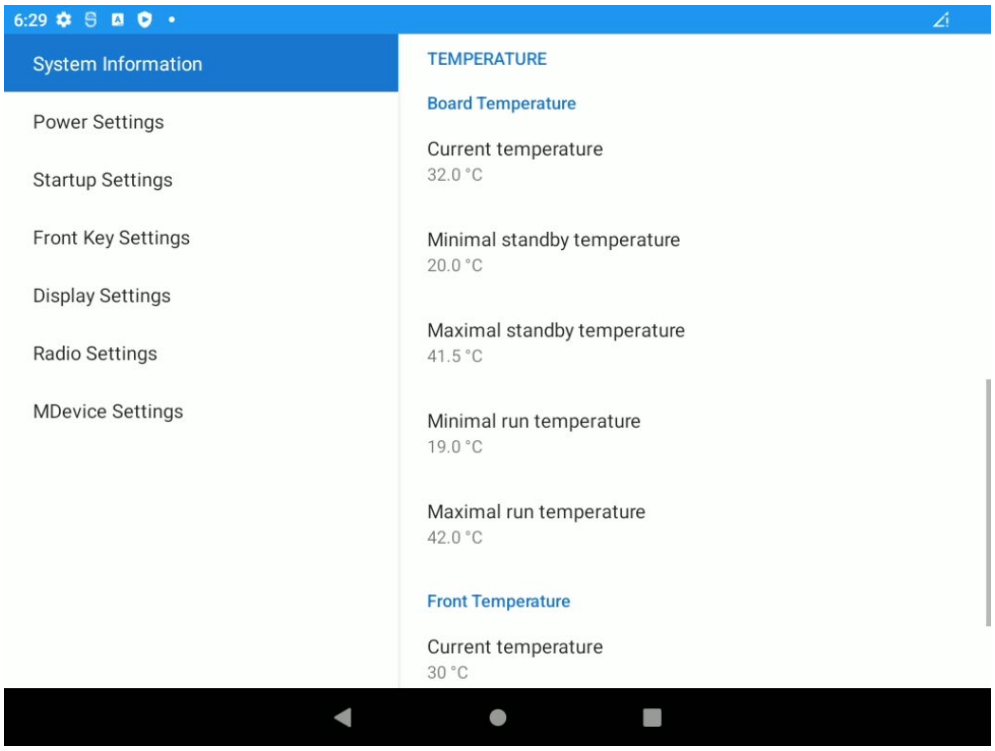


Figure 5-8: MDevice – System Information, Board Temperature

This section displays TEMPERATURE information of the board.

Board temperature	The current board temperature of your DLT-V73A
Minimal standby temperature	The lowest board temperature that was logged while your DLT-V73A was switched off
Maximal standby temperature	The highest board temperature that was logged while your DLT-V73A was switched off
Minimal run temperature	The lowest board temperature that was logged while your DLT-V73A was switched on
Maximal run temperature	The highest board temperature that was logged while your DLT-V73A was switched on

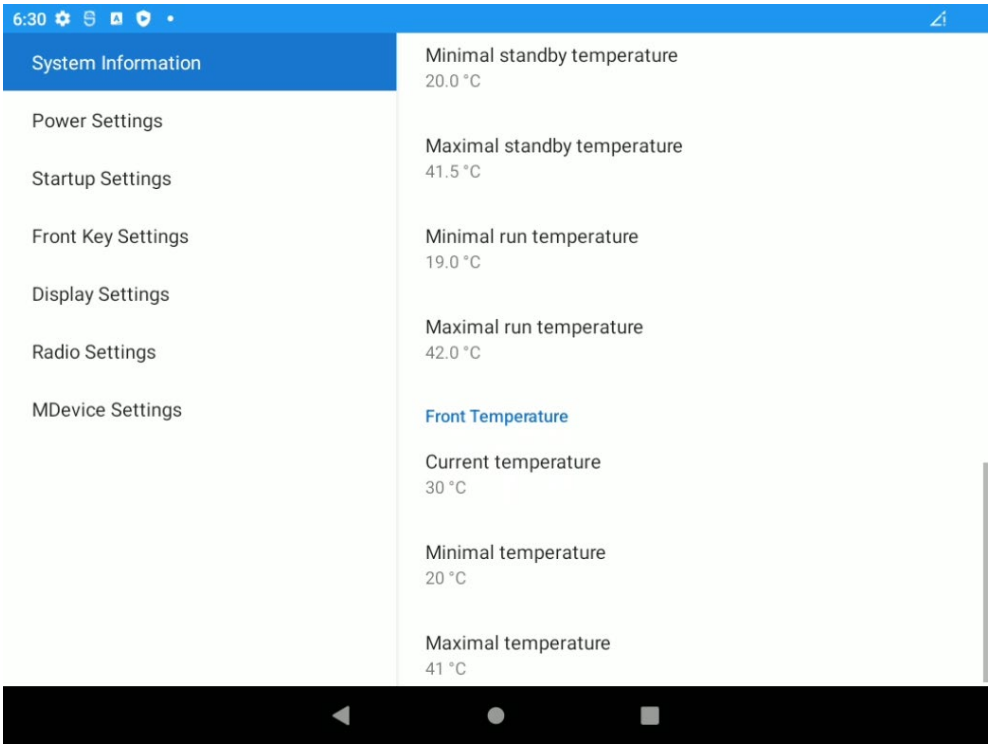


Figure 5-9: MDevice – System Information, Front Temperature

This section displays TEMPERATURE information of the front.

Front temperature	The current front temperature of your DLT-V73A
Minimal temperature	The lowest front temperature that was logged while your DLT-V73A was switched on
Maximal temperature	The highest front temperature that was logged while your DLT-V73A was switched on

5.4. Power Settings

The **Power Settings** menu allows configuring the shutdown behavior of your DLT-V73A and other power related settings.

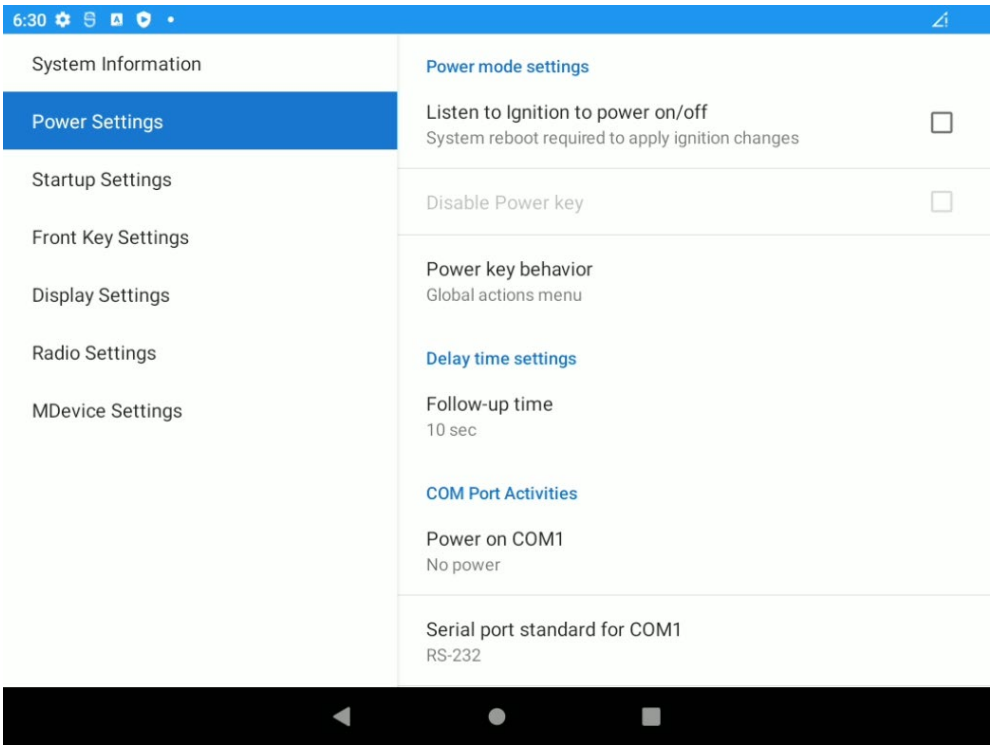
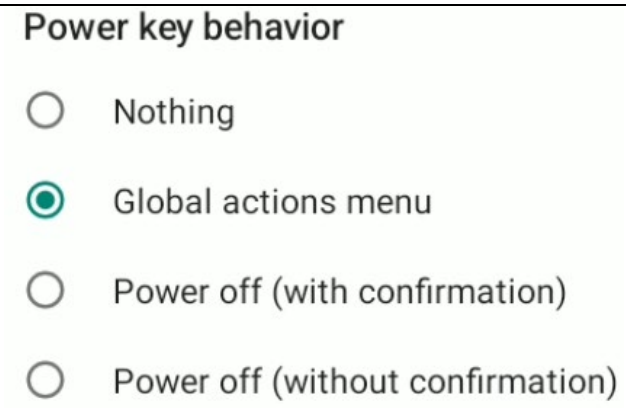


Figure 5-10: MDevice – Power Settings menu

Listen to Ignition to power on/off	Allows listen to Ignition signal for powering on/off the device. If this feature is enabled the **delay time overlay screen** will be displayed when **ignition signal gets lost.** *NOTE:* *A system reboot is required to apply changes to this option.* *If the Ignition signal gets lost, there will be a 3 seconds delay to enter Follow-up time dialog.* *In case UPS battery (optional) is inserted and Ignition / DC signals are dismissed at same time, the Follow-up time dialog will be skipped. In this case, please use the Power key to perform a switch off of the terminal instead.*
Disable Power key	Option is only available when option **Listen to Ignition to power on/off** was **enabled** before. By activating this feature the Power key behavior will be set **automatically** to option **Nothing**.

	NOTE: *To perform a system shutdown without enabled Power button perform a long press at Power button greater than 8 seconds*.
Power key behavior	 Figure 5-11: MDevice – Power Settings menu – Power key behavior • **Nothing** → don't perform any action when pressing at Power key. • **Global actions menu** → show overlay screen after press and hold Power key for at least two seconds and releasing afterwards (Power off / Restart) options can then be selected next by touch. • **Power off (with confirmation)** → show user request to perform shutdown after press and hold Power key for at least two seconds and releasing afterwards. • **Power off** → perform shutdown immediately after press and hold Power key for at least two seconds and releasing afterwards. *NOTE:* *To perform a system shutdown without enabled Power button perform a long press at Power button greater than 8 seconds.*
Follow-up time	Specifies the time until Ignition signal can be re-enabled before system will initiate a system shutdown (after the timer expired).
5/12V on COM1	If enabled, 5 or 12 Volts will be supplied on the COM1 serial port connector for powering peripherals such as a barcode scanner.
Serial port standard for COM1	Allow switch between (Loopback, RS-232)

5.5. Startup Settings

The **Startup Settings** menu is used to define the startup behavior of the device.

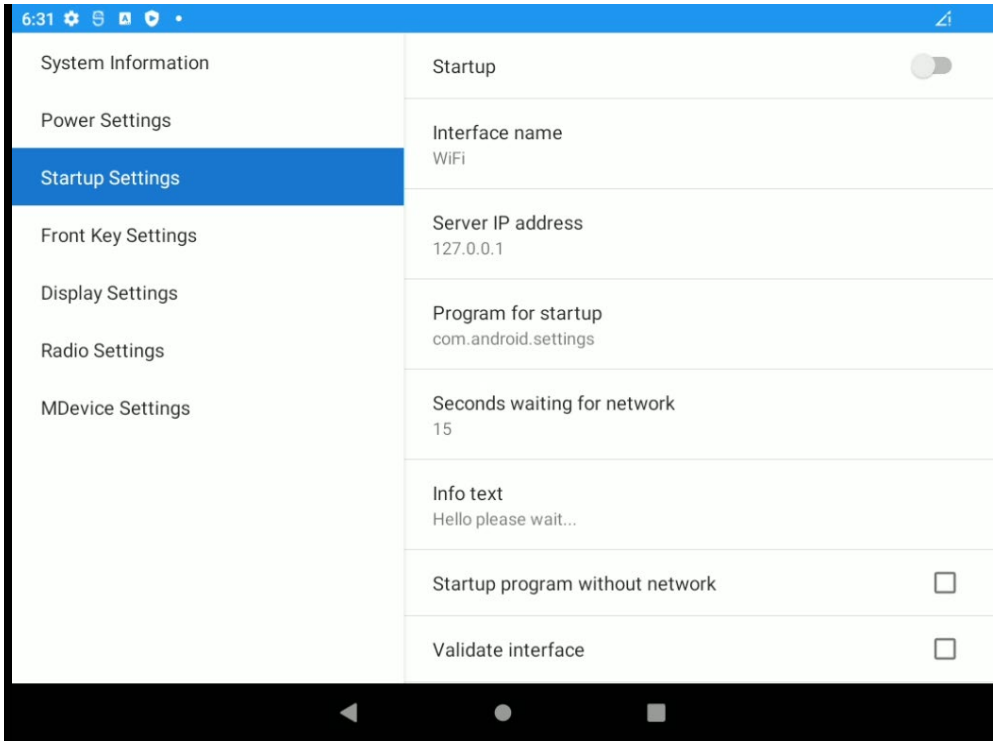


Figure 5-12: MDevice – Startup Settings menu

If **Startup** is switched **ON**, the device will try to establish a connection with the server specified over the specified interface. If the connection is successful, the specified application will be launched automatically. If the feature is enabled (i.e., Startup is switched to **ON**), the system will show a full screen page while the server connection status after boot-up.

Startup	If checked, the Startup feature is enabled.
Interface name	Specifies the network interface for connecting to the specified server.
Server IP address	Specifies the server's IP address.
Program for Startup	Choose one application from list that will be started automatically when defined network IP address becomes available. The list contains all current installed Android apps by default to choose from.
Seconds waiting for network	Timeout in seconds for establishing a connection to the server.
Info text	The string entered here will be displayed while the system is connecting to the server.
Start programs even without network	If checked, the startup programs will be launched regardless of the connection status to the server.
Validate interface	If checked, the network adapter related to the specified network will be validated before connecting to the server.

5.6. Front Key Settings

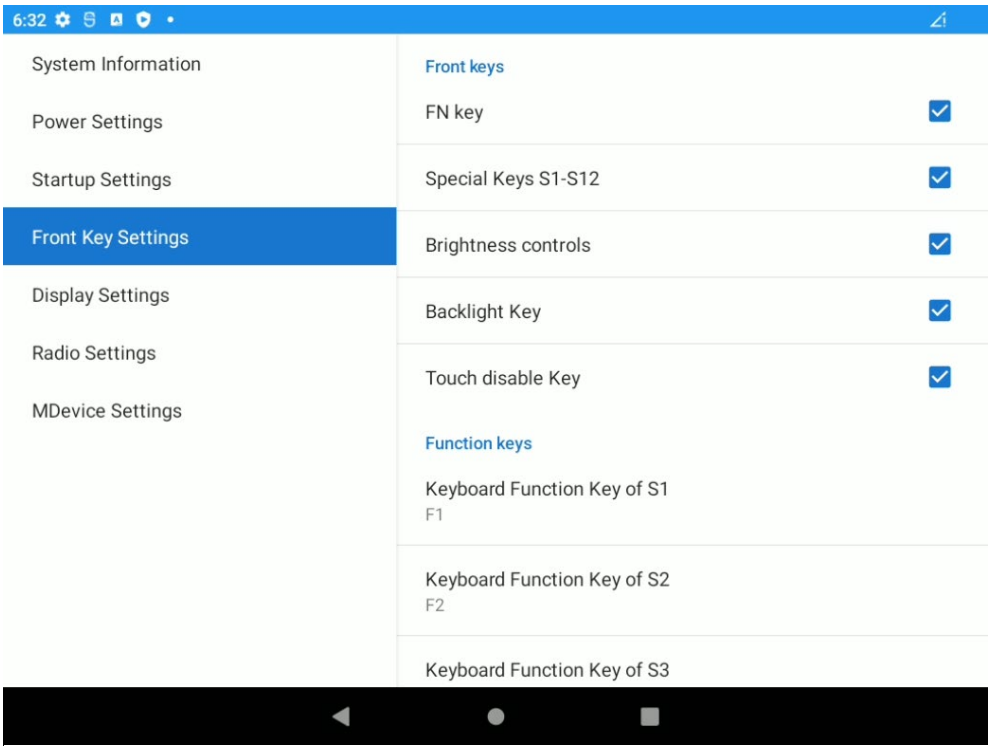


Figure 5-13: MDevice – Function Key Settings menu

In this menu, the physical function keys (also called special function keys) located on the DLT-V73A Industrial Computer's front panel can be programmed.

Each key can be configured as one of the keyboard function keys (F1~F24), special keystroke combination (ALT + TAB), single characters or even keystroke combinations like (SHIFT + a / CTRL + ALT + DEL) for example.

NOTE

*The physical function keys designed on the DLT-V73A front are labeled from **Sx** where "x" equals the key numbers. Different models of the DLT-V73A implement a different number of physical keys. Key labels **Sx** have a 1:1 correspondence with the **Fx** labels used in MDevice, e.g., **S1** physical key is **F1** soft-key in MDevice.*

5.6.1. Assigning special function keys

You can configure the special function keys by the following steps:

1. Click one of the special function keys in this menu, and the configuration dialog will pop-up.

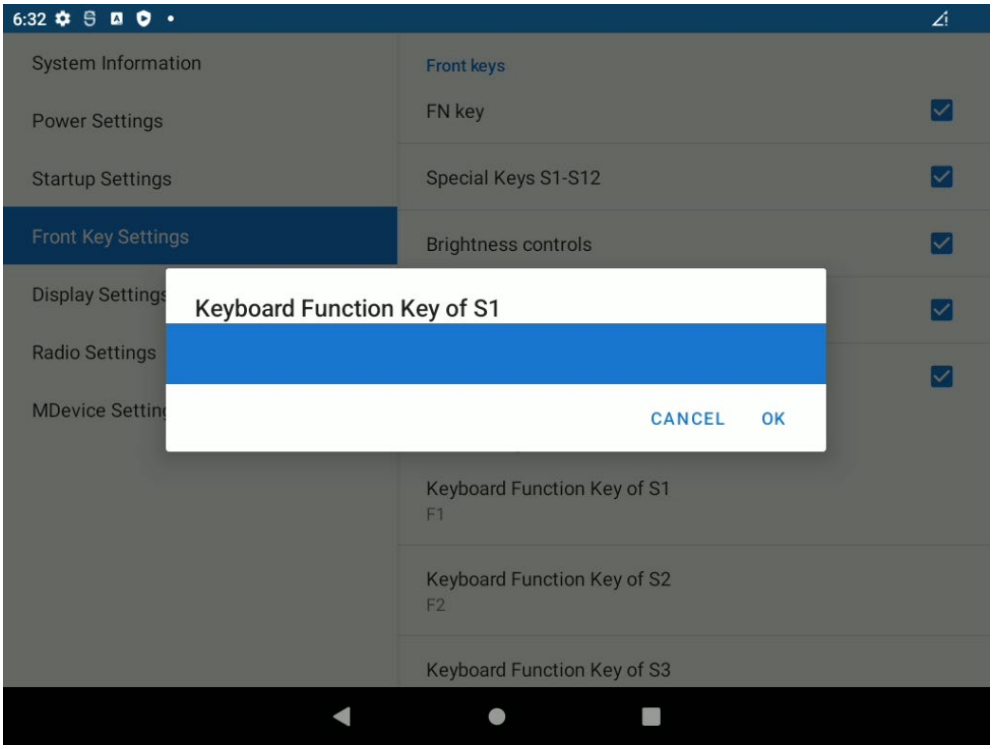


Figure 5-14: MDevice – Assigning special function keys

2. After clicking on the icon select one of keyboard function keys (F1~F24, ALT + TAB) for this special function key from the list or select **Custom** to program any possible key from an attached USB-keyboard or the ASOP integrated software keyboard.

NOTE

The Android™ software keyboard does not contain all standard keys possible to program so it is recommended to use an USB attached keyboard specially for programming key combinations.

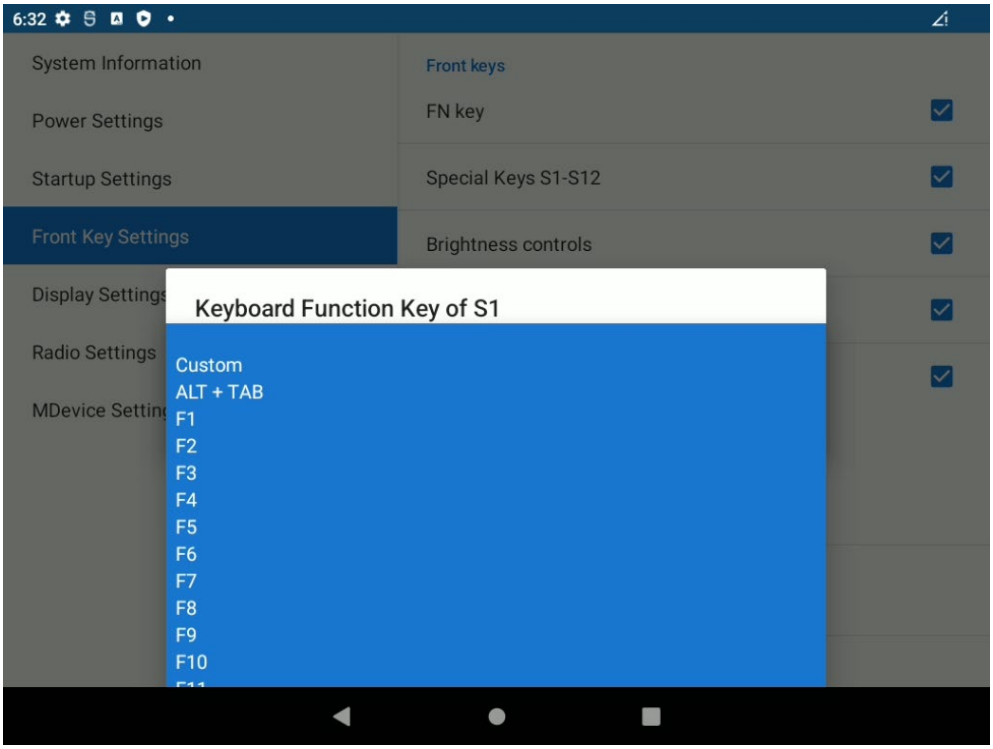


Figure 5-15: MDevice – Assigning special function keys, keyboard function

In case **Custom** was selected, another dialog will open to program the new key assignment:

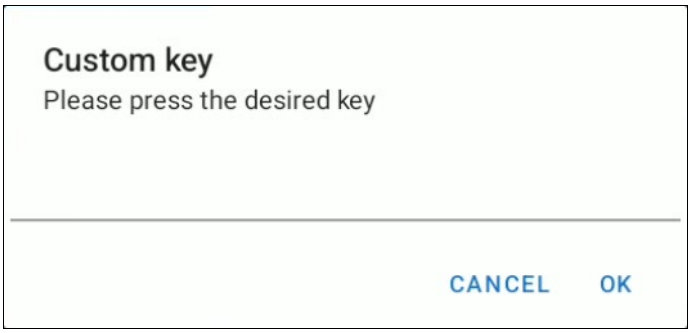


Figure 5-16: MDevice – Assigning special function keys, Custom key

3. Press key or key combination at external connected USB-keyboard for new key assignment (In the following example Shift + a for uppercase output).

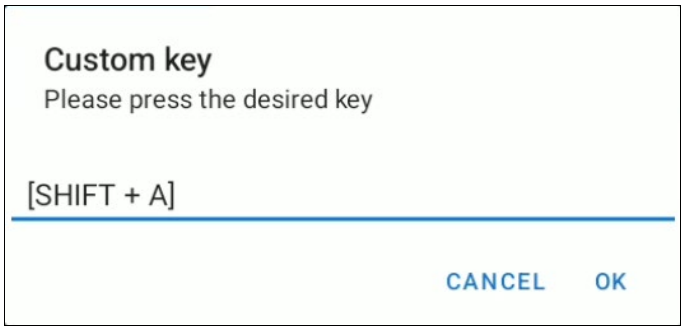


Figure 5-17: MDevice – Assigning special function keys, Custom key

4. Click **OK** to save this change.

The new assignment will be displayed for each function key:

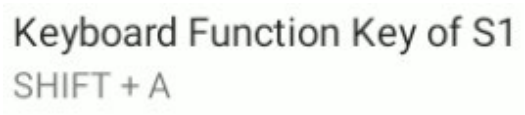


Figure 5-18: MDevice – Assigning special function keys, new assignment

NOTE

With image v3.01, only English US characters are supported to be programmed using this functionality. By changing the keyboard layout to another language, the display / output will change to different selected layout. Special keys only available on specific layouts like (AltGr / German layout) are not supported at all and will be interpreted as AltGr r (right) instead.

5.7. Display Settings

The **Display Settings** menu provides a capability to configure the touch screen.

DLT-V73A has different front types (PCAP / Resistive Touch) available, so screen layout differs as described in detail next.

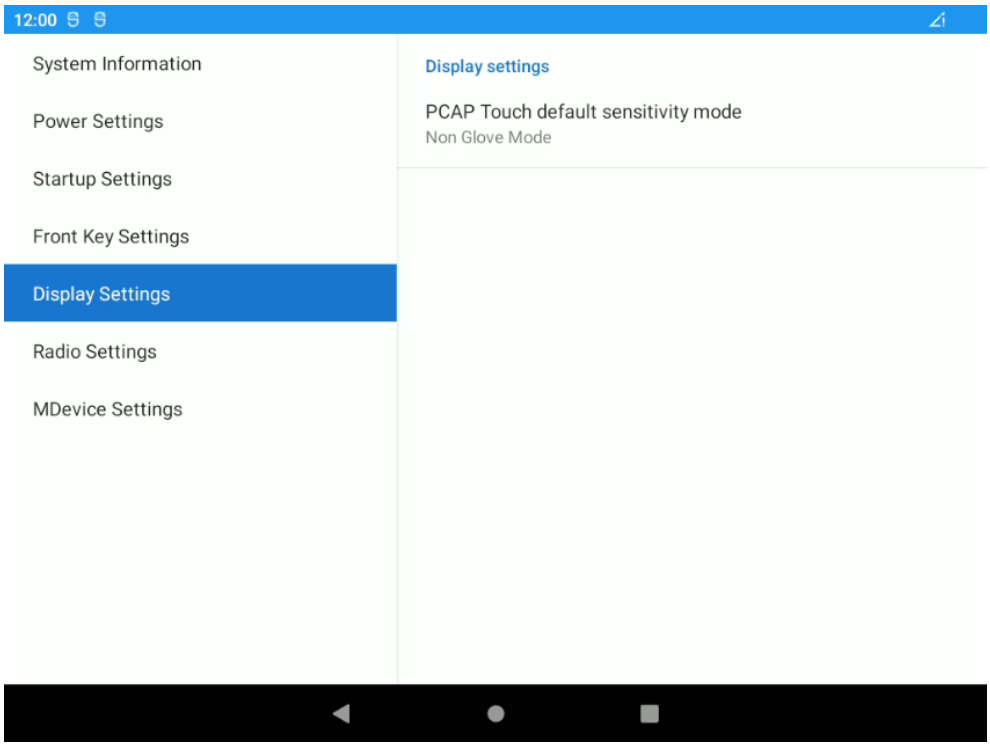


Figure 5-19: MDevice menu Display Settings (PCAP)

PCAP Touch default sensitivity mode	If glove mode is selected, the PCAP touchscreen sensitivity is enhanced. *NOTE:* *This feature needs to be enabled if you want to operate DLT-V73A with gloves.* *At DLT-V73A version there are three options available to switch between **non glove, glove or thick glove** mode.*

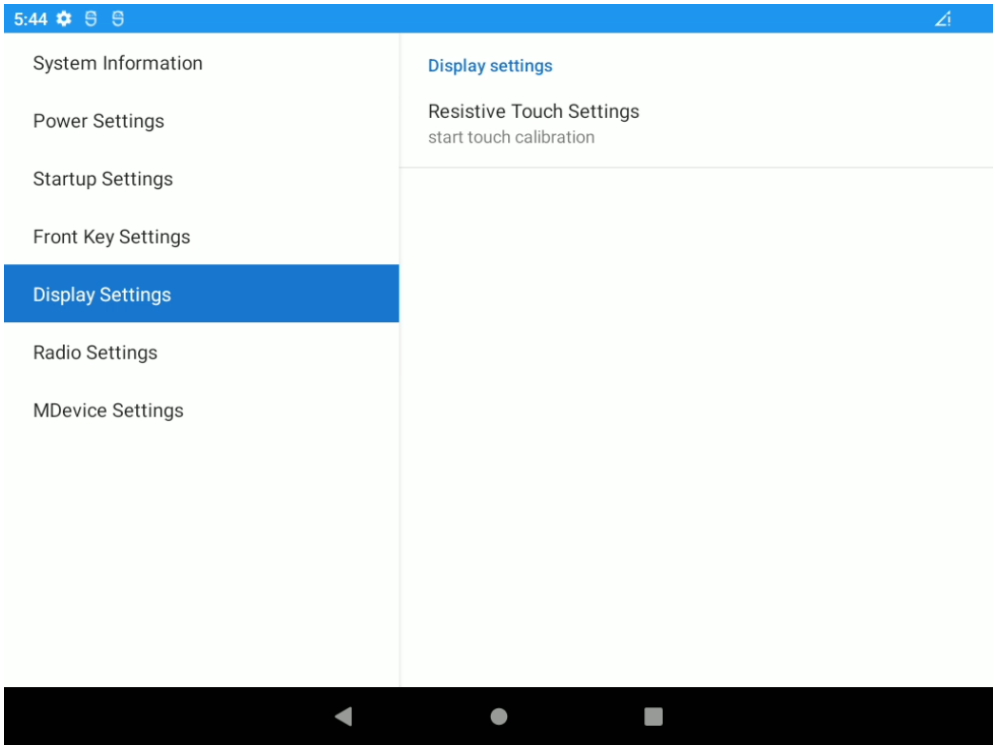


Figure 5-20: MDevice menu Display Settings (Resistive Touch)

Resistive Touch Settings	To start touch calibration process. See chapter *7.13 Resistive touch controller (PenMount)* for further description.

5.8. Radio Settings

This module can be used to change module configuration and (internal / external) antenna configuration.

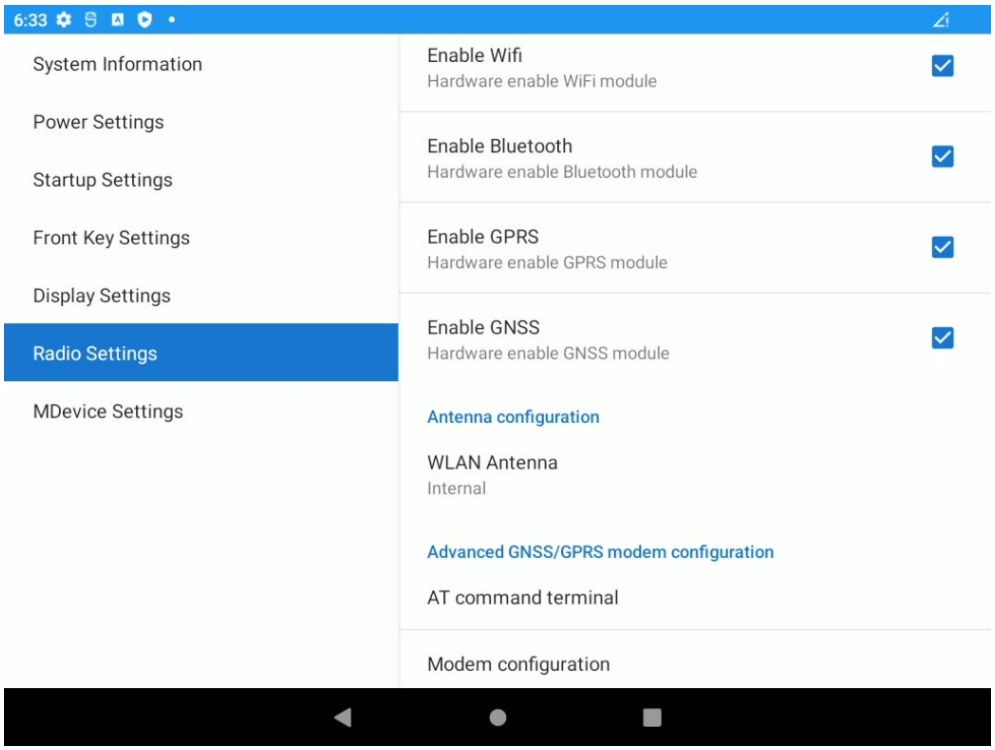
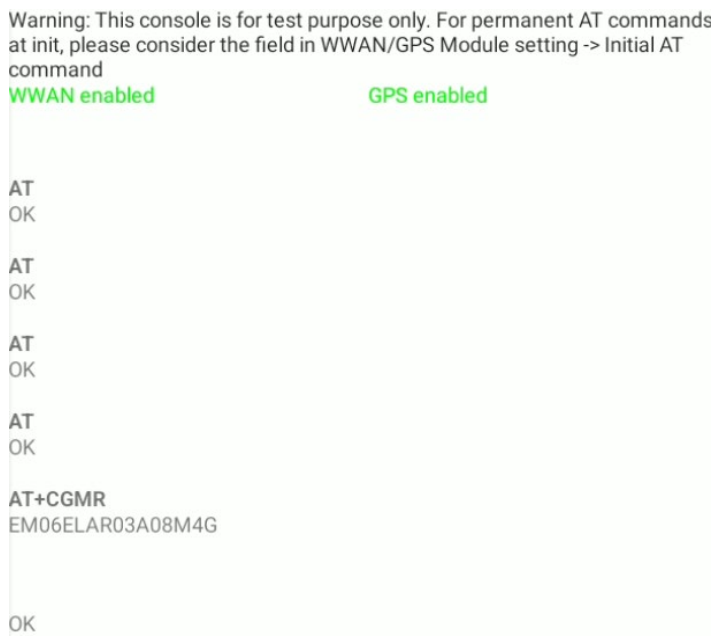


Figure 5-21: MDevice – Radio Settings

Enable WLAN	Enable / Disable WLAN module
Enable Bluetooth	Enable / Disable Bluetooth module
Enable GPRS	Enable / Disable GPRS module *IMPORTANT NOTE:* *This option can only be changed in case a SIM-card is available and inserted using the defined SIM-card slot located under the upper antenna-cap. Additional information can be found in the DLT-V73A Hardware manual.*
Enable GNSS	Enable / Disable GNSS module (optional)
Antenna configuration	Select between **Internal** and **External** WLAN / WWAN antenna support. *IMPORTANT NOTE:* *Due to 802.11n/ac antenna diversity characteristic of the ADV SIoT WLAN WWAN antenna by selecting **External antenna** both functions (WLAN / GPRS) will be affected by this.*
AT command terminal	This feature can be used, to send AT commands to the Quectel module. In the following example, the current installed firmware of the module will be read out (AT+CGMR):  Figure 5-22: MDevice – Modem AT terminal *IMPORTANT NOTE:* *For available AT command list & additional information please refer to the homepage of module manufacture.* *https://www.quectel.com/product/lte-a-em06-series*

Modem configuration

For specific configuration before GPRS / GPS connection is being established this function can be used to send commands to the module at every system startup.

Please note that the above-described command line (AT command terminal) should be used for testing because module is reacting with return answers in case the entered command was not correct about syntax or content.

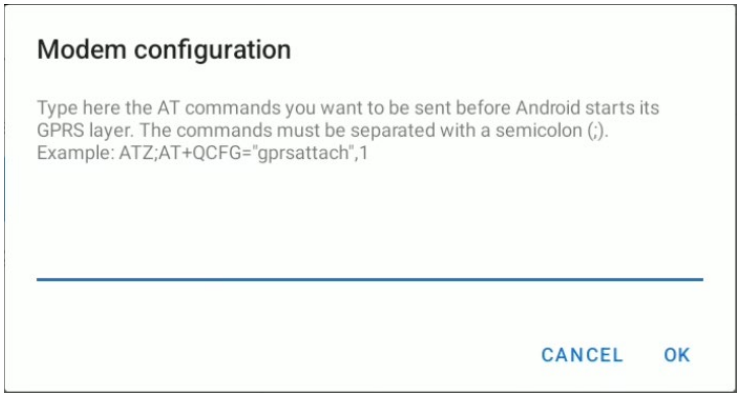


Figure 5-23: MDevice – Modem configuration

As part of the example text inside the dialog entering more than one command to be sent to the module requires a semicolon character as separator in between.

IMPORTANT NOTE:

For available AT command list & additional information please refer to the homepage of module manufacture.

https://www.quectel.com/product/lte-a-em06-series

5.9. MDevice Settings

In the **MDevice Settings** menu, the user can configure the MDevice utility.

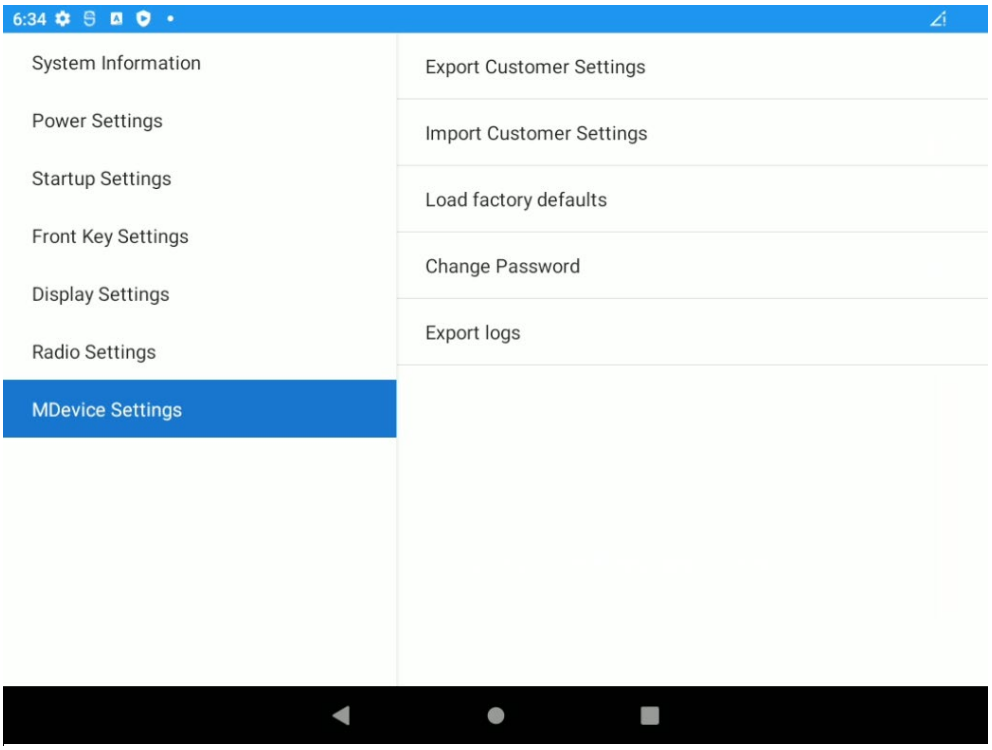


Figure 5-24: MDevice Settings

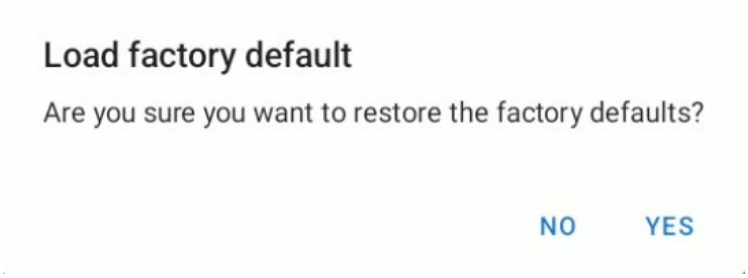
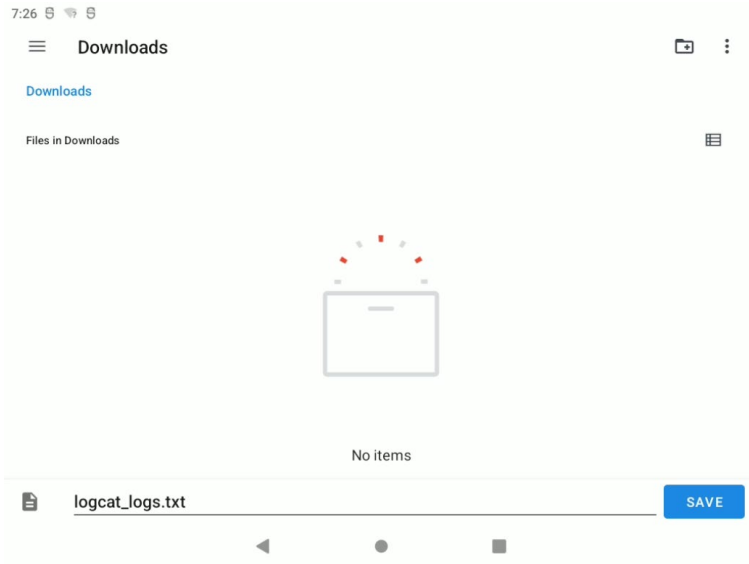
Export Customer Settings …	Export current **MDevice settings** to a file. The exported items include the **Power settings, Startup settings and Function key settings.** See chapter *5.9.1 Export Customer Settings* for further description.
Import Customer Settings …	Import custom **MDevice settings** from a file. The imported items include the **Power settings**, **Startup settings** and **Function key settings.** See chapter *5.9.2 Import Customer Settings* for further description.
Load factory default	Reset the **MDevice Settings** to default factory status after user confirmation. 

Figure 5-25: MDevice Settings – Load factory default

	Affects only the **Power settings** and Front **Function key settings.** Please note that performing this option the key assignment of all front special keys will be reverted to default (F1-F12) depending on available front keys.
Change Password	To change the MDevice password. *NOTE:* *The password will be reset to **gold** in case factory defaults are loaded.*
Export logs	This function will create a ".txt" file that contains system information collected from current session. Please only use this for maintenance purpose requested by engineers from Advantech Service-IoT.  Figure 5-26: MDevice – logfile An USB-Stick or ADB connection can be used to collect this file from the terminal. For USB-Stick file transfer, follow chapter *7.4 USB-Stick (file transfer).* For ADB connection, follow chapter *7.9 ADB over USB (Type-C)*.

5.9.1. Export Customer Settings

The following example shows how to export customer settings of MDevice utility.

1. Press button **Export Customer Settings**.

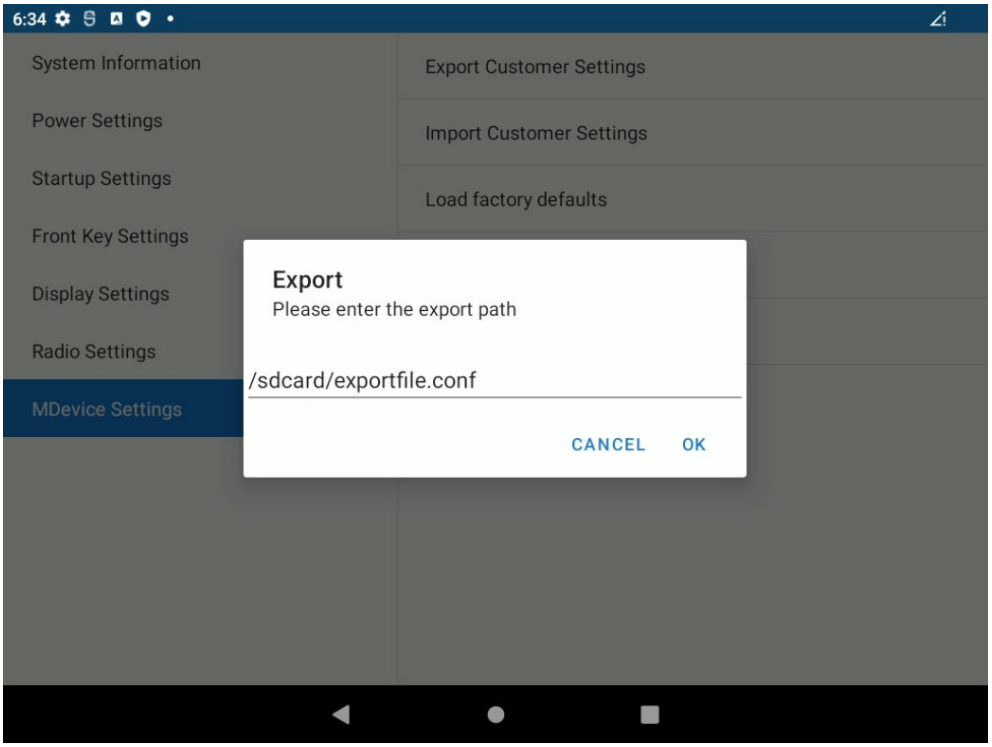


Figure 5-27: MDevice – Export Customer Settings

2. Change name or leave at default description (exportfile.conf).

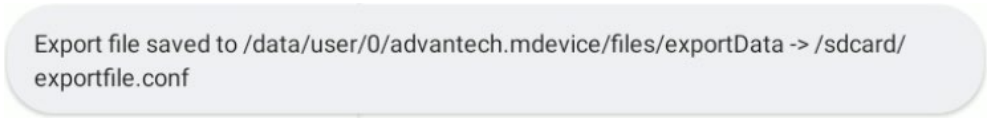


Figure 5-28: MDevice – Export Customer Settings (Information pop-up)

3. An information pop-up will be displayed at lower part of screen.

5.9.2. Import Customer Settings

The following example shows how to import customer settings of MDevice utility.

1. Press button **Import Customer Settings**.

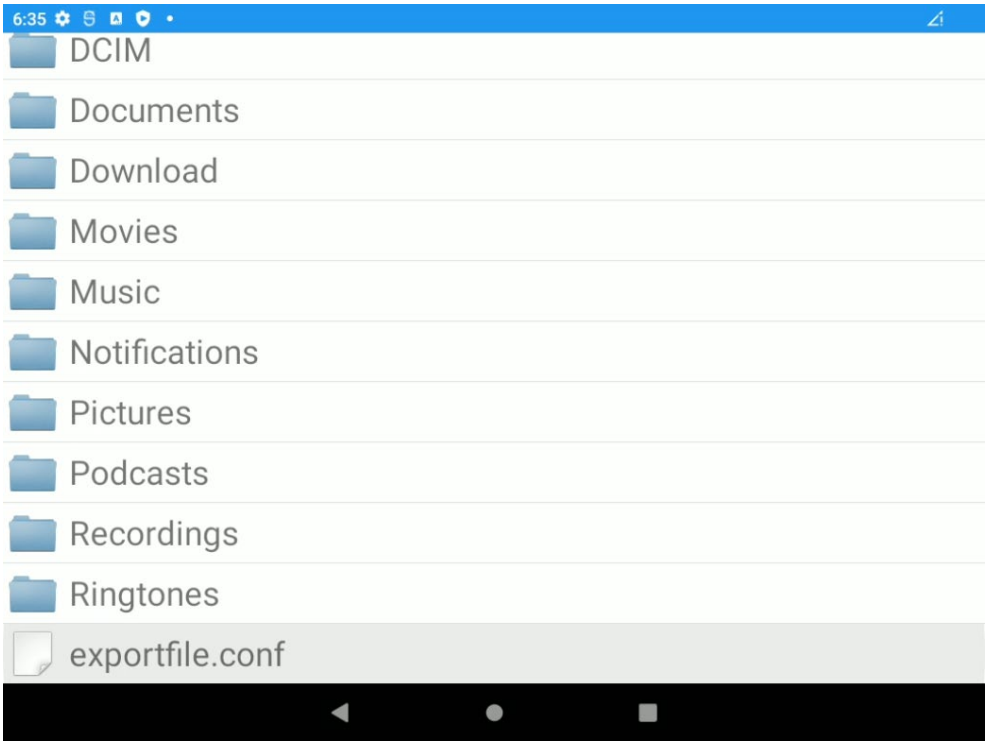


Figure 5-29: MDevice – Import Customer Settings

2. Select file to be imported (example file reads exportfile.conf).

Figure 5-30: MDevice – Import Customer Settings – Importing data…

3. An information pop-up will be displayed at lower part of screen.

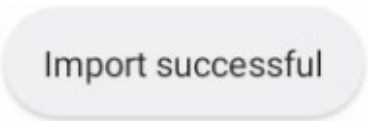


Figure 5-31: MDevice – Import Customer Settings – Import successful

6. MBlank

6.1. MBlank Settings

MBlank option is being used to prevent display content view and terminal access by the user while the vehicle is in motion.

This module can be used to change MBlank configuration and to enable / disable feature.

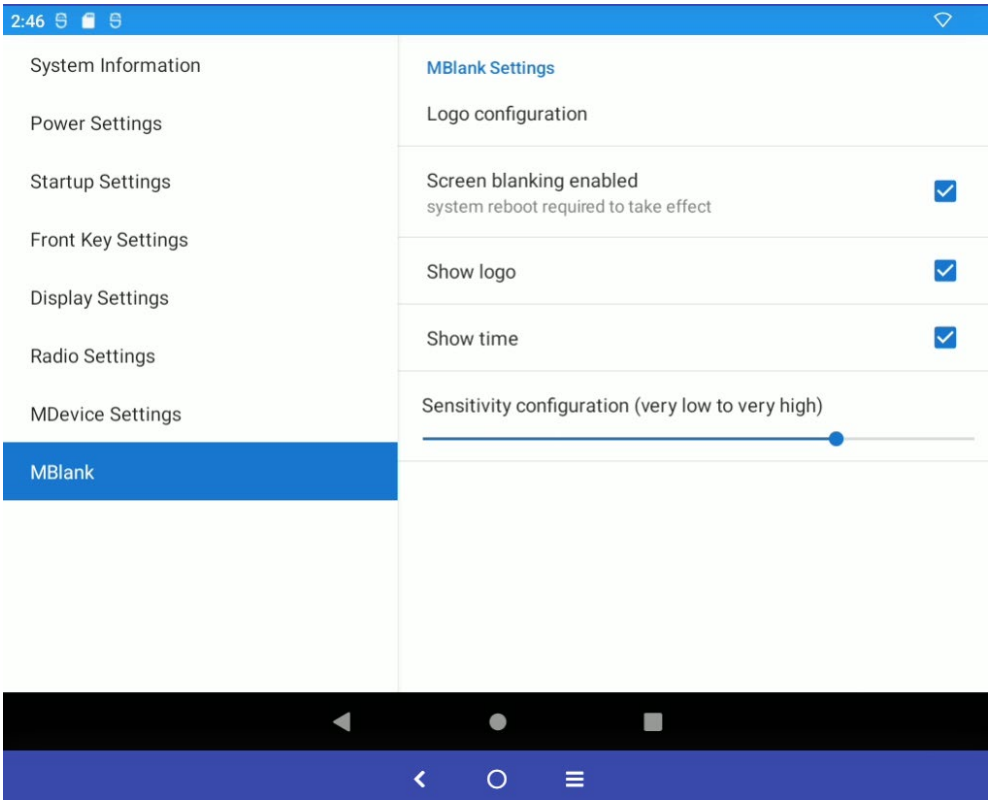


Figure 6-1: MDevice – MBlank

6.1.1. Logo configuration

You can easily set your logo.

1. Click on **Logo configuration**.

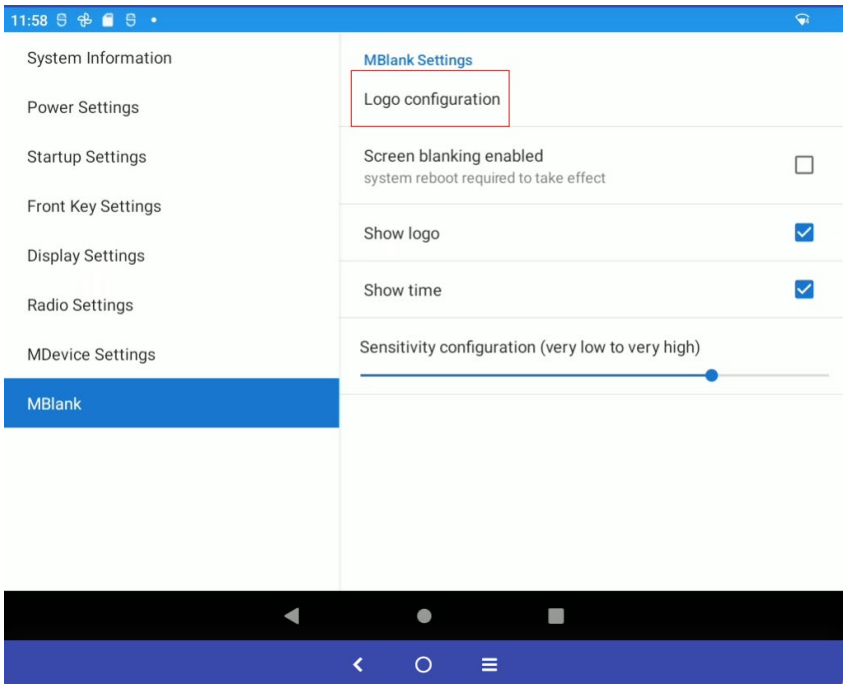


Figure 6-2: MBlank – Logo configuration

By default, the Advantech logo will be displayed.

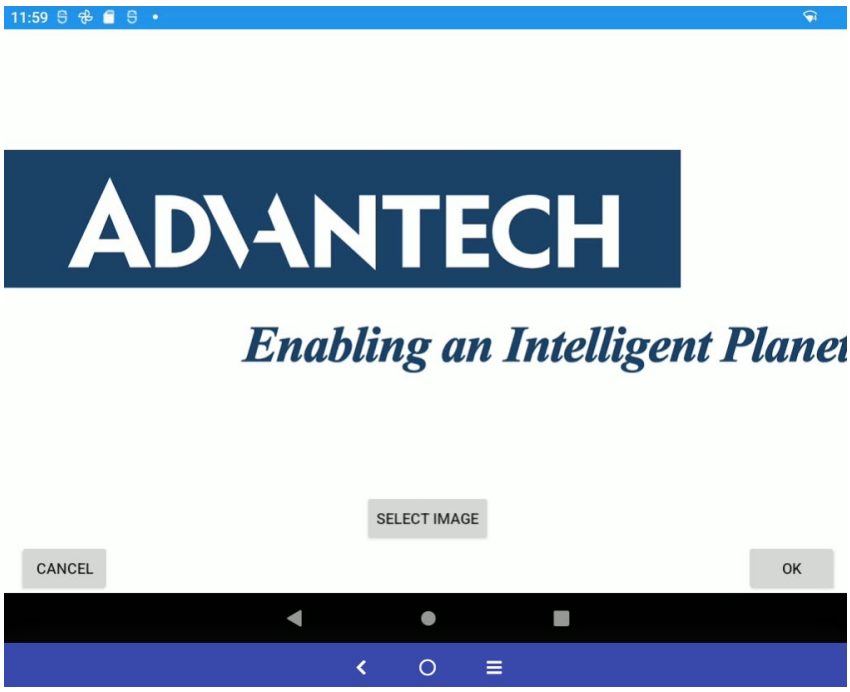


Figure 6-3: MBlank – Default logo

The new logo can be selected by choosing a file that has been copied before to the internal storage (EMMC flash) or from an attached USB-Stick.

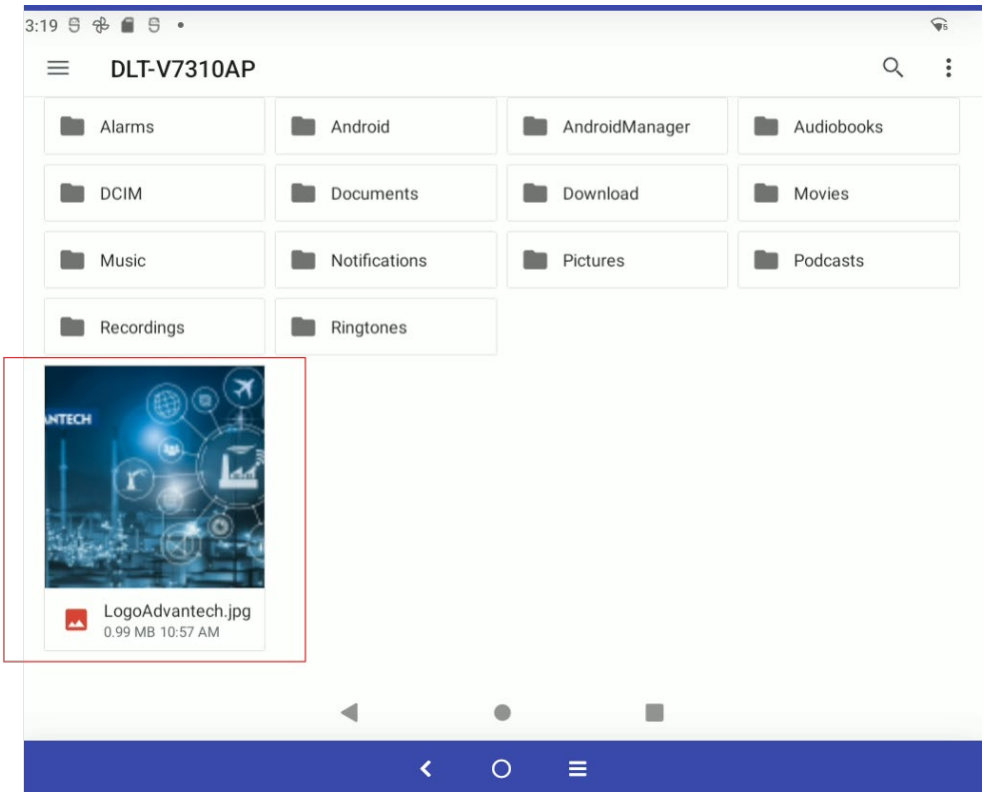


Figure 6-4: MBlank – New custom logo copied to the internal storage

For further information about using file explorer please see section *7.4 USB-Stick (file transfer).*

NOTE

IMPORTANT:

Please once you copied your image to the internal storage, MAKE SURE that is being stored in the section Google PHOTOS. For doing this, please click the image copied at internal storage and choose Photos for opening it. The image will be saved automatically in Google Photos-Library section.

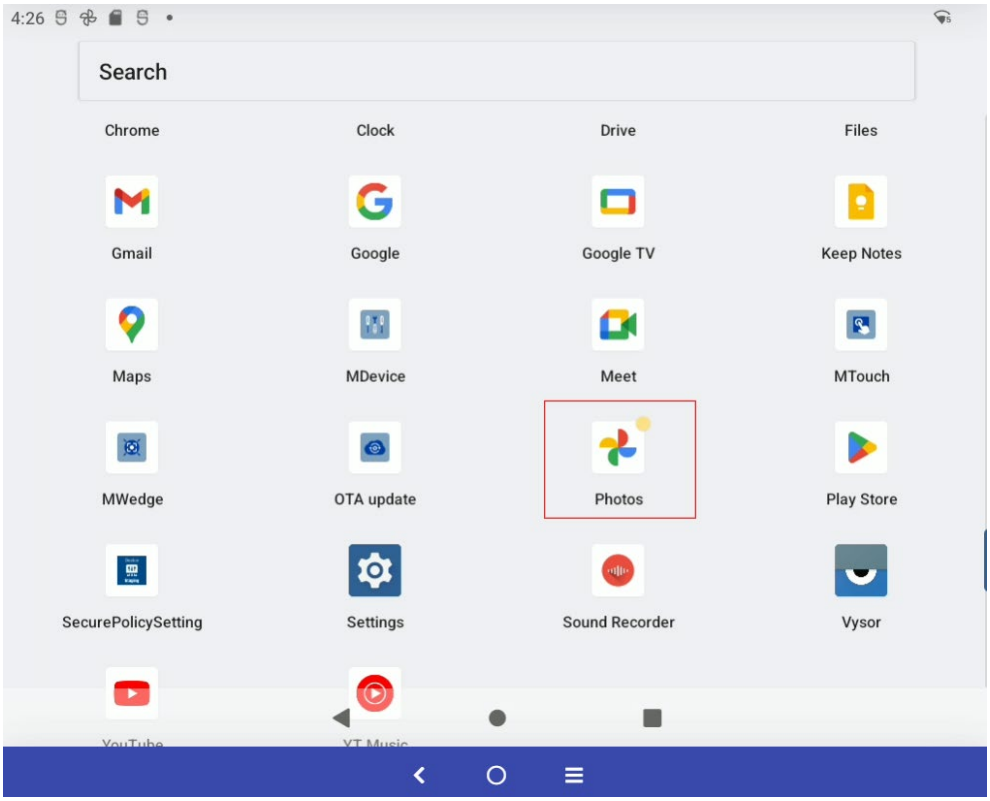


Figure 6-5: MBlank – New custom logo in Google Photos

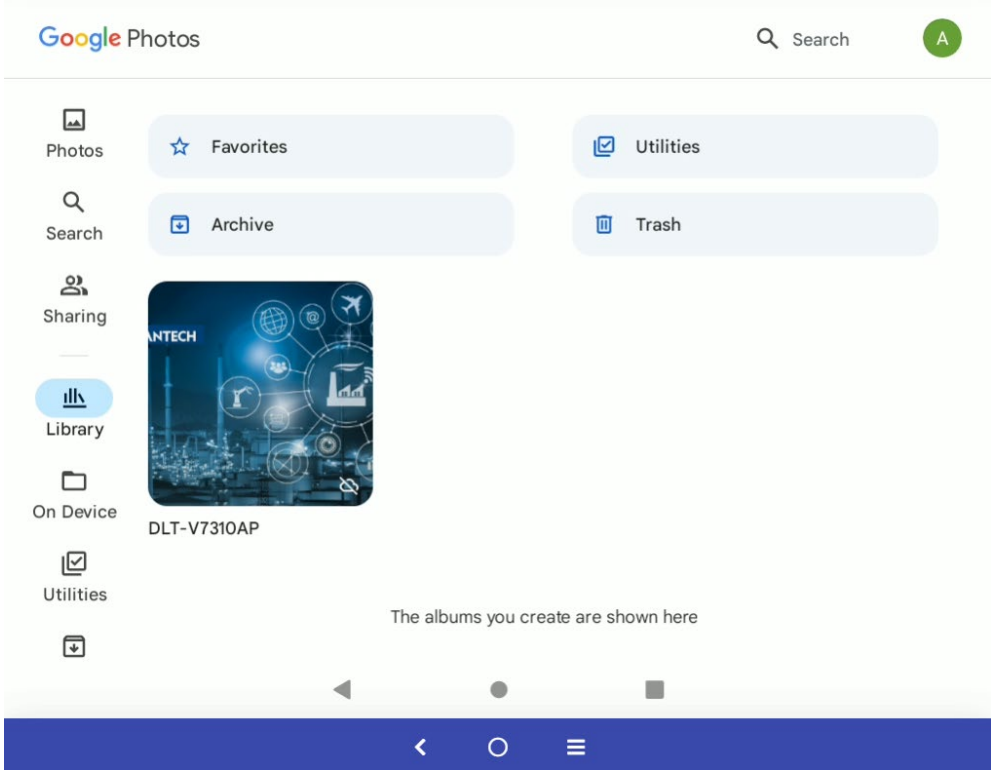


Figure 6-6: MBlank – New custom logo in Google Photos-Library

2. Change back to MDevice-MBlank and click on **SELECT IMAGE**.

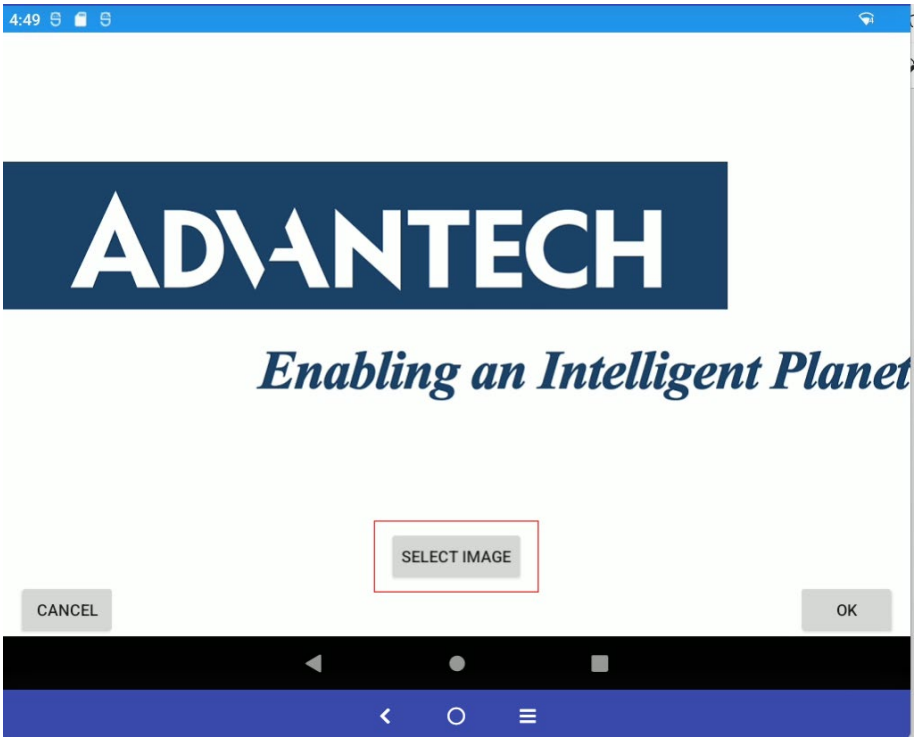


Figure 6-7: New logo to select – Part I

The logo to select will be shown in the following page:

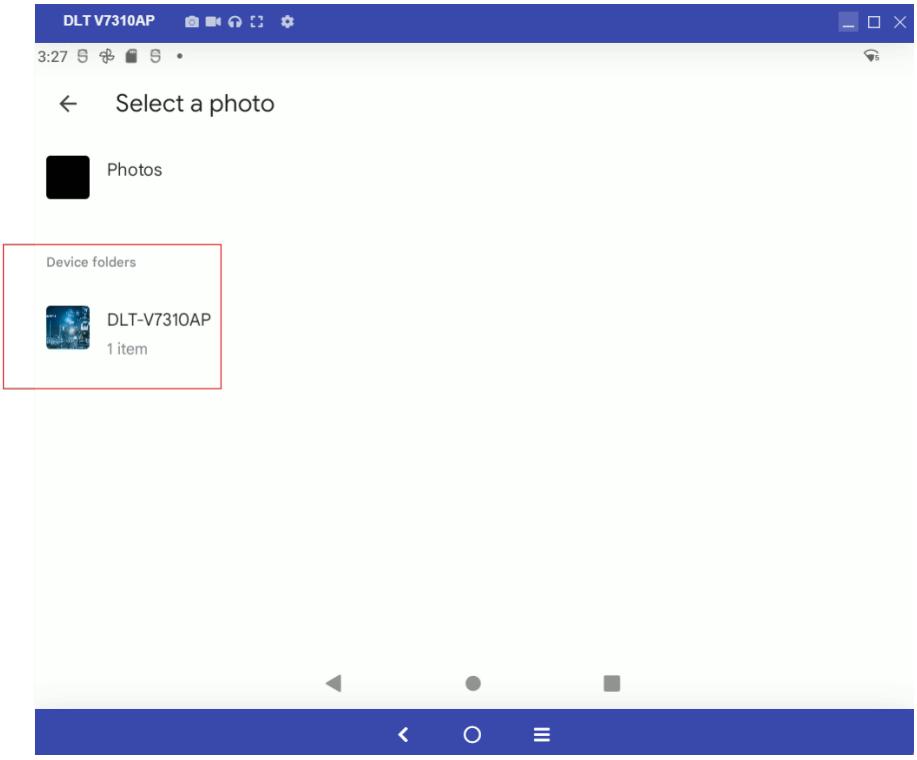


Figure 6-8: New logo to select – Part II

3. Click on the new logo and confirm with **OK**.

Figure 6-9: MBlank – New logo

NOTE

Possible file formats are: png, jpg, gif, bmp. The display size of the logo is automatically adjusted to the display size by the screen blanking software. The logo is scaled – with fixed aspect ratio – so that the available display area is optimally filled. A frame is only left clear for the optional display of the time.

6.1.2. Enable MBlank

Enable the highlighted checkbox and reboot the device.

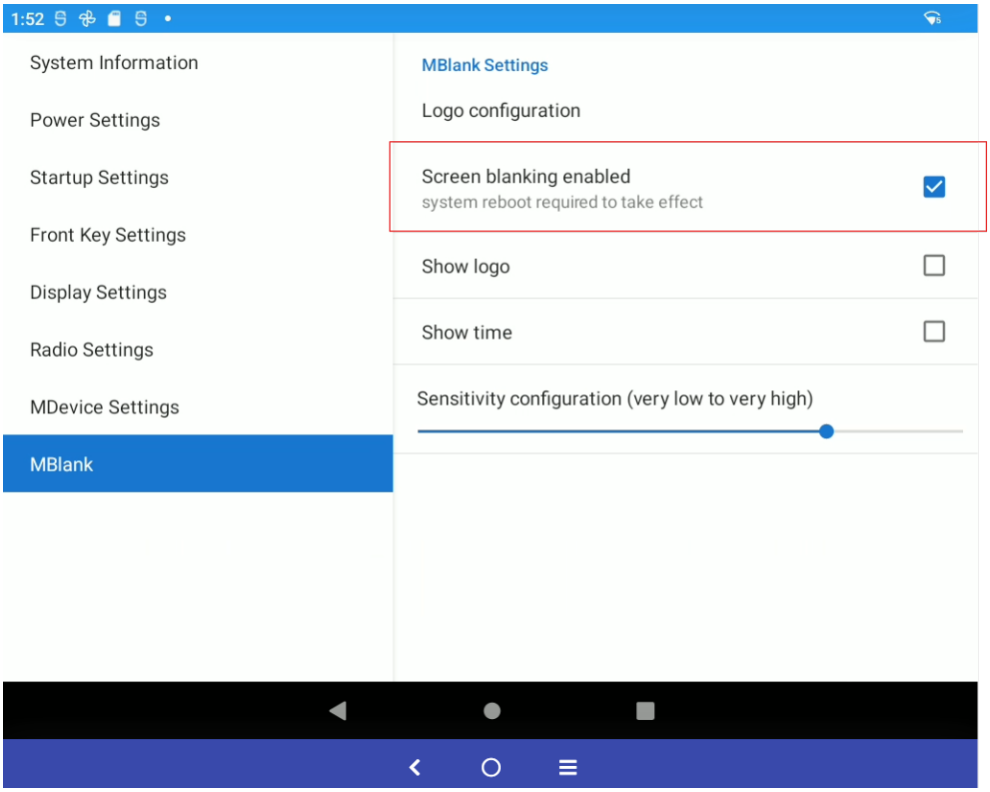


Figure 6-10: MBlank – Screen blanking enabled

6.1.3. Show Logo

To see the logo when the screen is blanked enable the checkbox **Show logo**. If this is disabled, the screen will appear simply black.

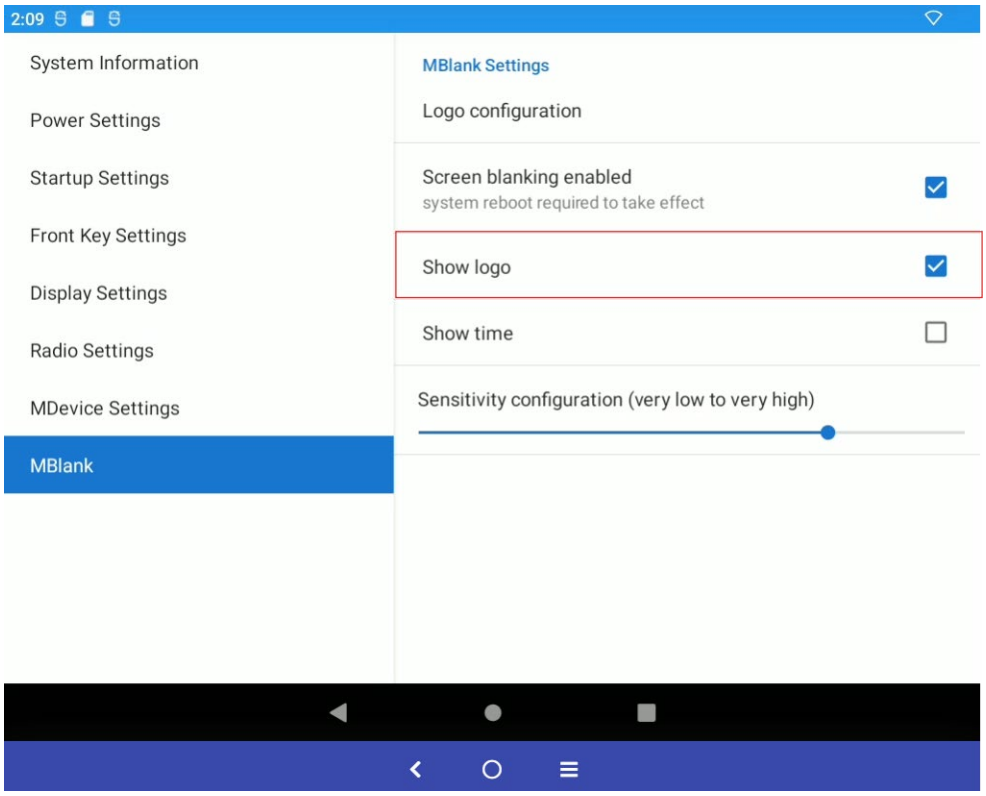


Figure 6-11: MBlank - Show logo

6.1.4. Show Time

This setting specifies whether or not the current time is to be shown on the blanked display. The time format corresponds to the MS Windows country settings for the Advantech VMT in question. Example for the US: hh:mm:ss / AM/PM.

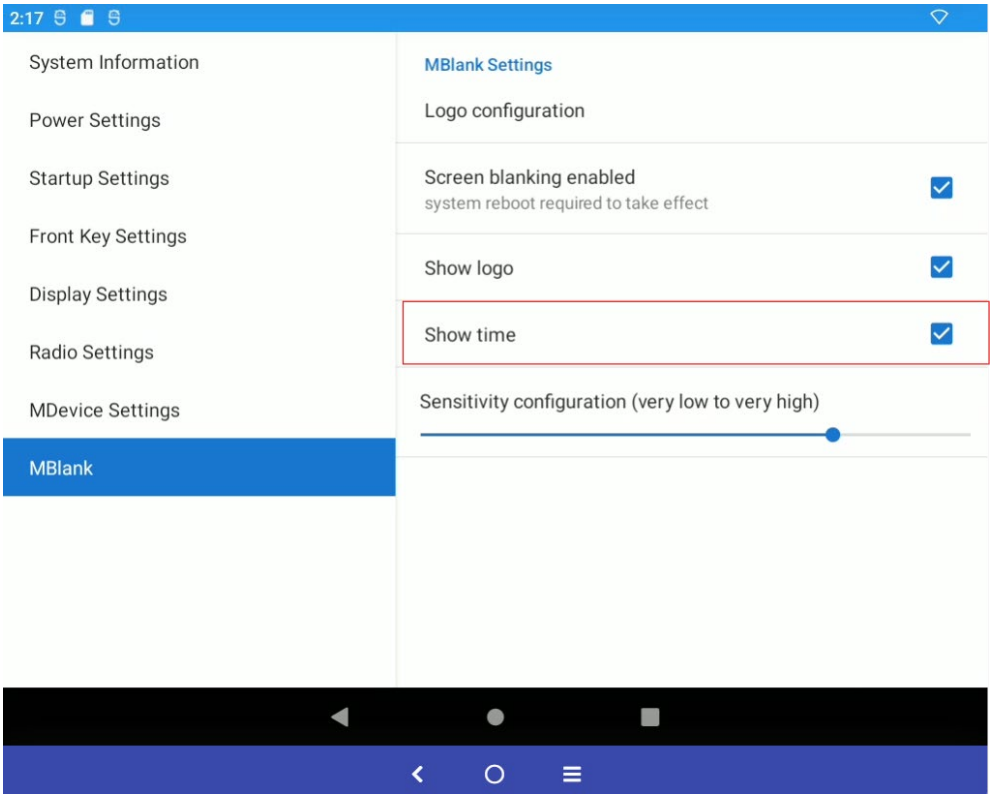


Figure 6-12: MBlank – Show time

6.1.5. Sensitivity Configuration

The sensitivity must be defined here so that the DSMS MBlank Solution detects whether or not the vehicle is in motion or stationery.

The sliding controller provides five sensitivity levels: **high / medium / low** and **two intermediate values** (between high & medium and between medium & low).

That means with a sensitivity set at low a big shock required to blank the screen.

At the same time a sensitivity set at high, a little shock is more than enough to blank the screen. The terminal is really sensitive to any kind of vibration.

The following criteria determine which value should be set:

- Condition and evenness of the ground on which the vehicle is moving.
- Type of vehicle: different vibration strength of electronic vehicles, petrol vehicles, etc.
- Where is the VMT fitted on the vehicle? Vibrations vary depending on the mounting location (console, under the roof, etc.).
- What has been used to mount the VMT to the vehicle? Vibrations vary depending on the mounting type (long or short RAM mounts, Advantech mounting bracket, etc.).

NOTE

The sensitivity level that needs to be set for the VMT depends on a wide range of criteria and must be determined on a case-by-case basis. The following information on the Sensitivity setting can therefore be regarded as non-binding recommendations.

High Mid High Medium	*If the vehicle is smooth running (e.g. electric vehicles) and the ground is relatively level.*
Medium Low Low	

High Mid High	
Medium Medium Low Low	*If the vehicle is vibrating heavily (e.g. petrol vehicles) and the ground is uneven.*

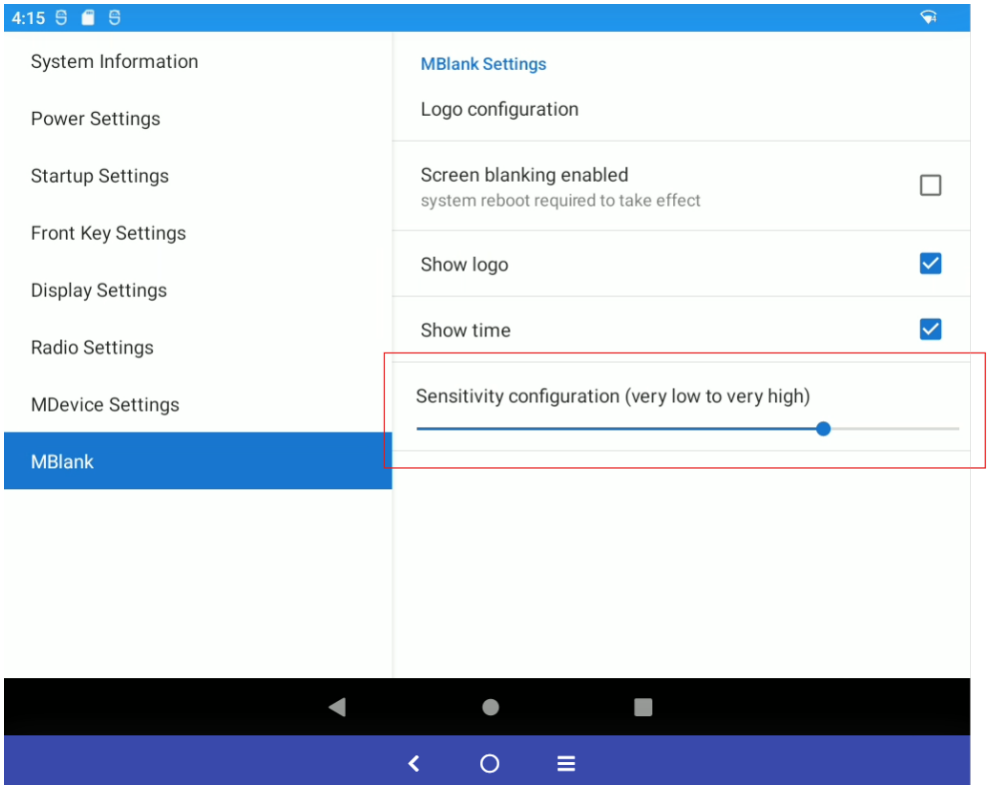


Figure 6-13: MBlank – Sensitivity configuration

7. Advanced

7.1. WLAN Roaming

NOTE *It is mandatory to perform proper configuration of the WLAN parameters under Android to achieve comparable roaming performance to DLT-V73 Industrial Computers running other Operating Systems such as MS-Windows.*

To configure WLAN roaming parameters, follow the instructions below:

1. Go to settings **Network & Internet** -> **WLAN**.
2. Select the target network that the DLT-V73A will be operated in (Advantech-GUEST in this example).

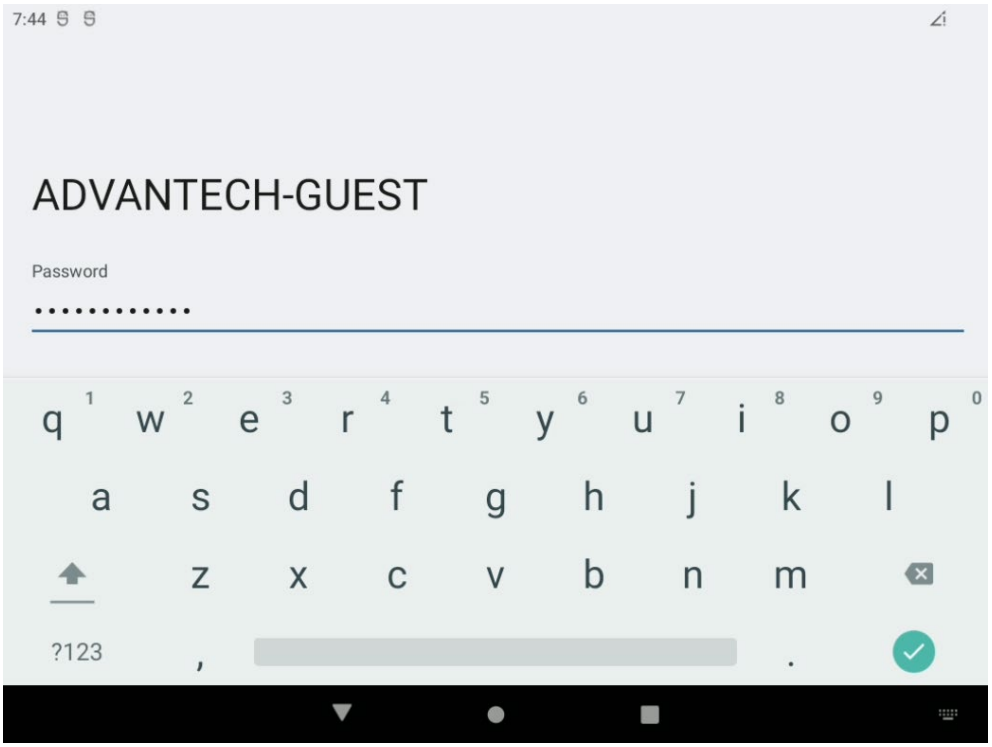


Figure 7-1: WLAN settings network selection

3. Enter required **Password** followed by **Return** key.

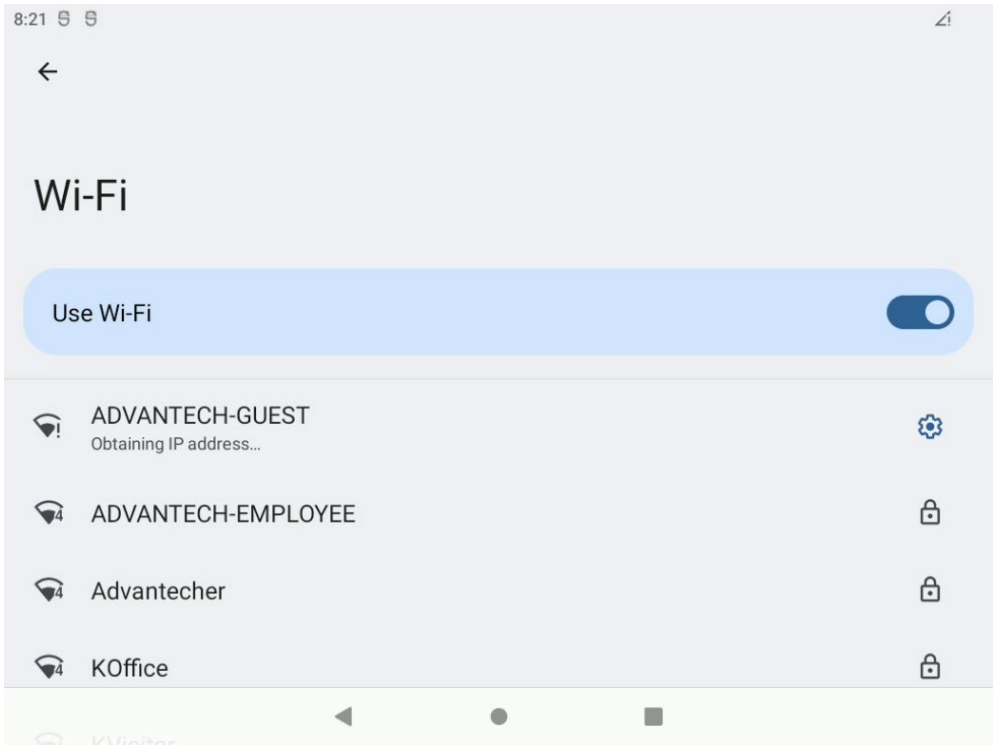


Figure 7-2: WLAN profile connection status

4. To modify or delete the WLAN profile click at icon: 

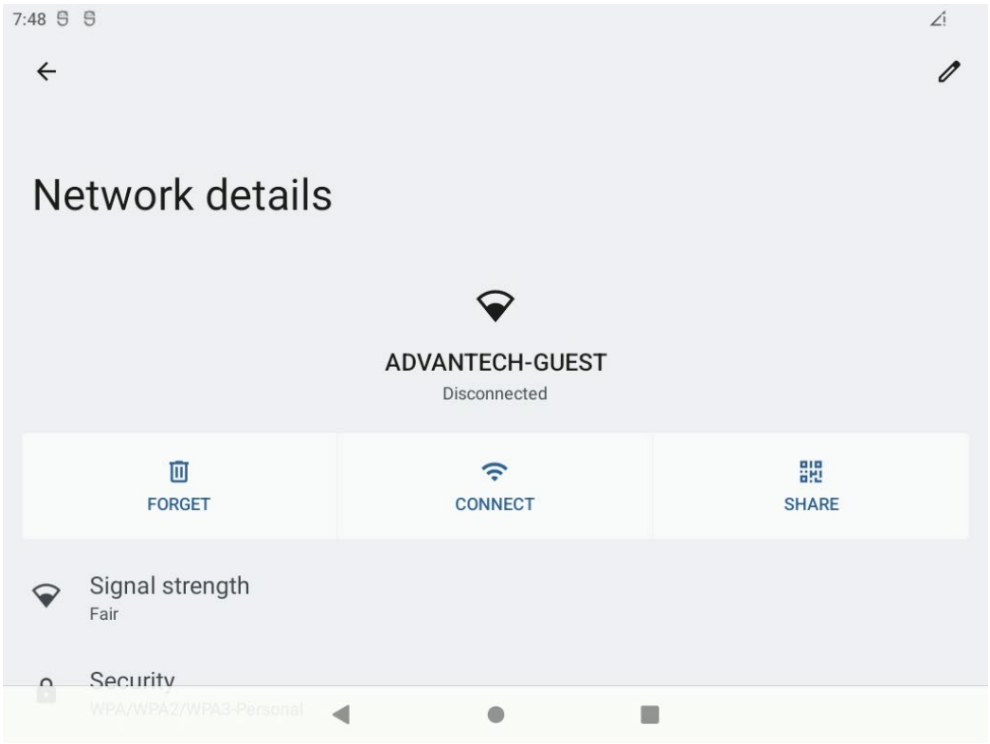


Figure 7-3: WLAN roaming settings (Android image version v2.01.2 or higher)

5. Password can be modified by clicking at icon: 

6. To delete a profile made before use icon: 

7.2. Ethernet Settings

To configure Ethernet parameters, follow the instructions below:

NOTE *By default, Ethernet is configured to DHCP. Ethernet settings dialog is being used to set static IP address configuration including Gateway and DNS server.*

1. Go to settings **Network & internet** -> **Ethernet**.

2. Use **Ethernet IP mode** to switch between **static** and **DHCP**. By activating **static** all other fields (IP address, netmask, etc.) getting active as shown below.

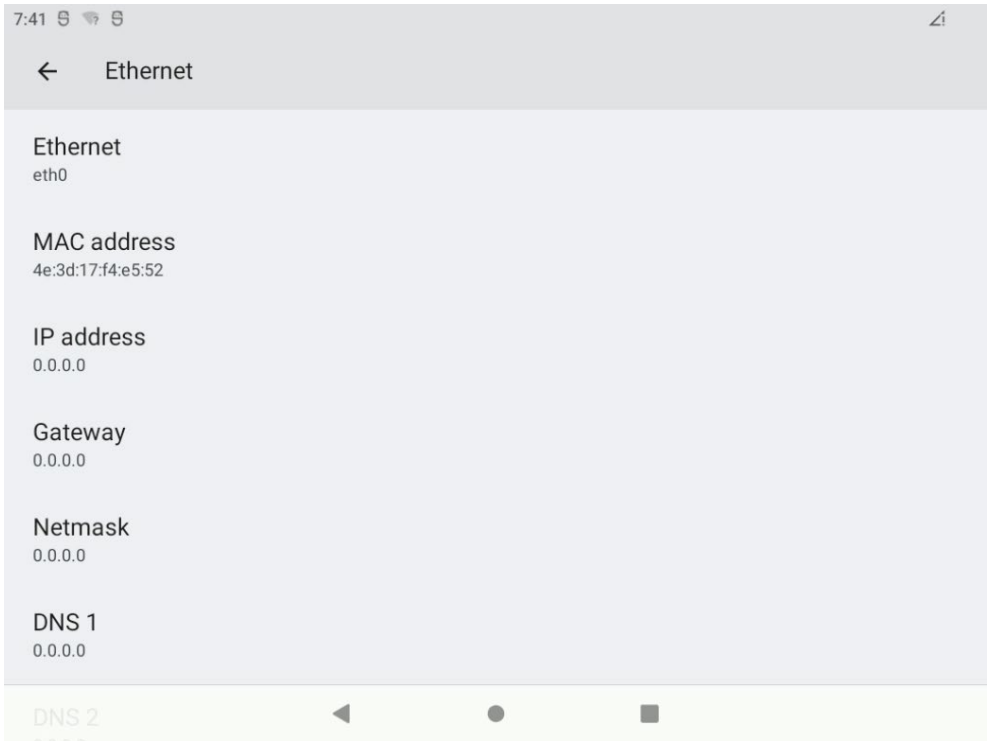


Figure 7-4: Ethernet settings

3. Individual fields can be clicked to be updated.

Figure 7-5: Ethernet settings – Set IP address

7.3. GPRS / GNSS Settings

At DLT-V73A terminals GPRS / GNSS settings are available as optional feature.

For GNSS no additional settings are required.

The GPRS settings can be changed inside settings **Network & internet.**

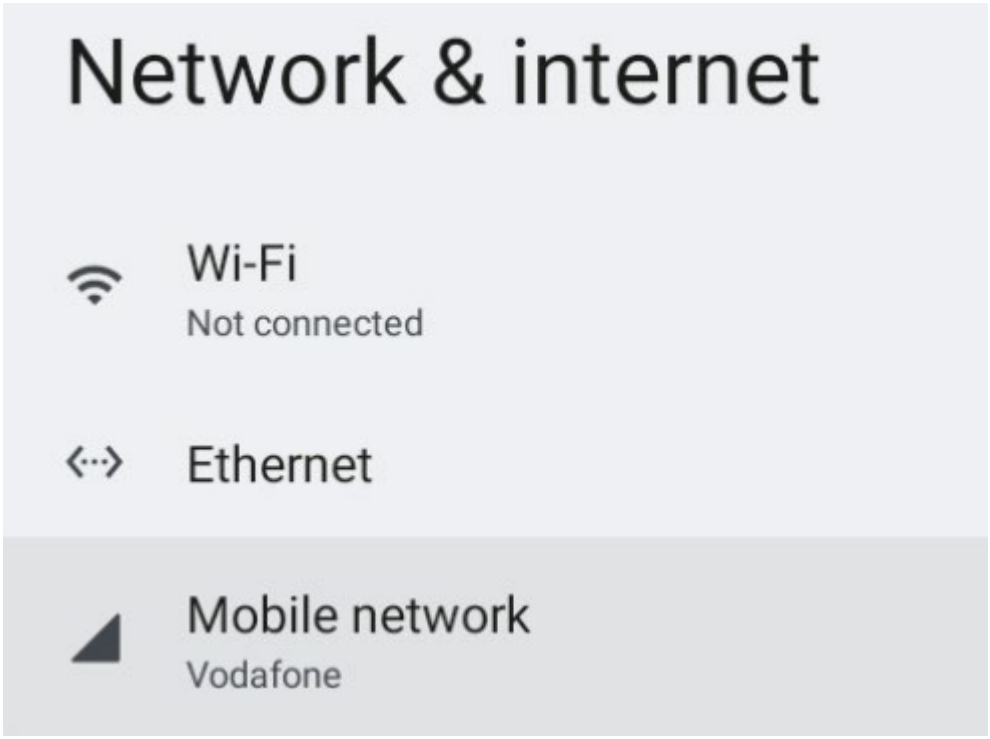


Figure 7-6: GPRS settings

1. Choose option **Mobile network**.

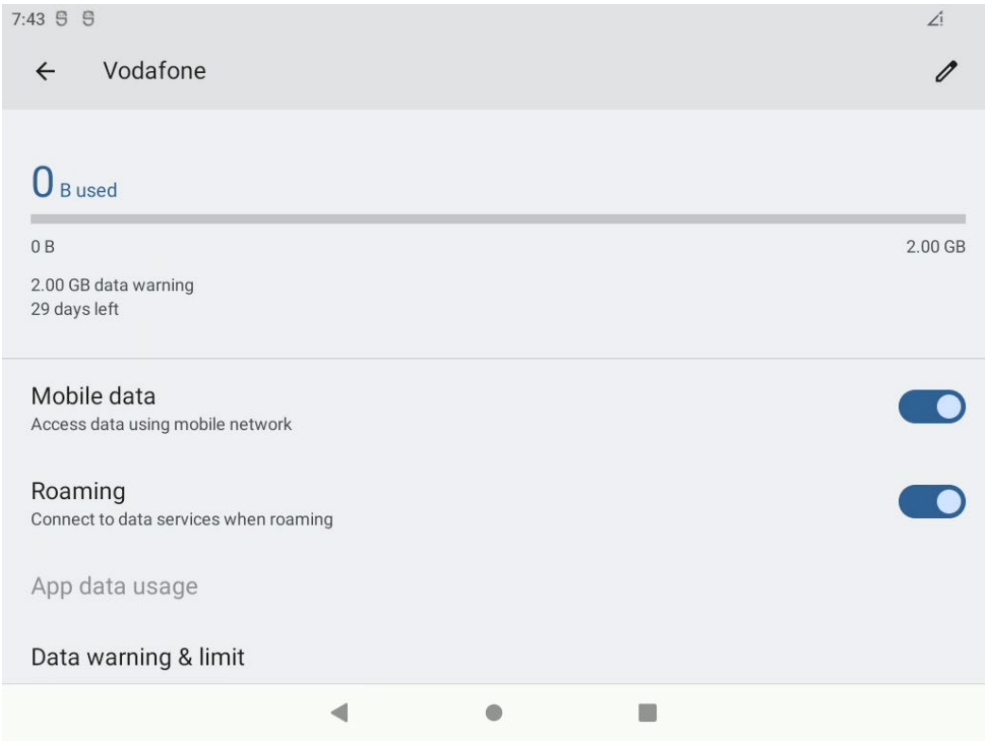


Figure 7-7: GPRS settings – Mobile network settings

Mobile Data	Enable / Disable access data using mobile network (GPRS)
Roaming	Enable / Disable data services when roaming
App data usage	Shows actual mobile date used
Data warning & limit	Enable / Disable Set data warning including Data warning size and limit
Preferred network type	Select one of the following (depends on installed SIM-card) • 4G (recommended) • 3G • 2G • LTE
Automatically select network	While disabled, choose a network operator (Depends on SIM-card attached to the terminal)
Access Point Names	Select provider (depends on installed SIM-card)

Figure 7-8: GPRS connection – Select provider

2. Select the provider by clicking on one of the entries.

7.4. USB-Stick (file transfer)

To use an USB-Stick at Android for file transfer you can follow the next chapter with instructions.

1. Attach an USB-Stick (FAT32 formatted) at DLT-V73A terminal.

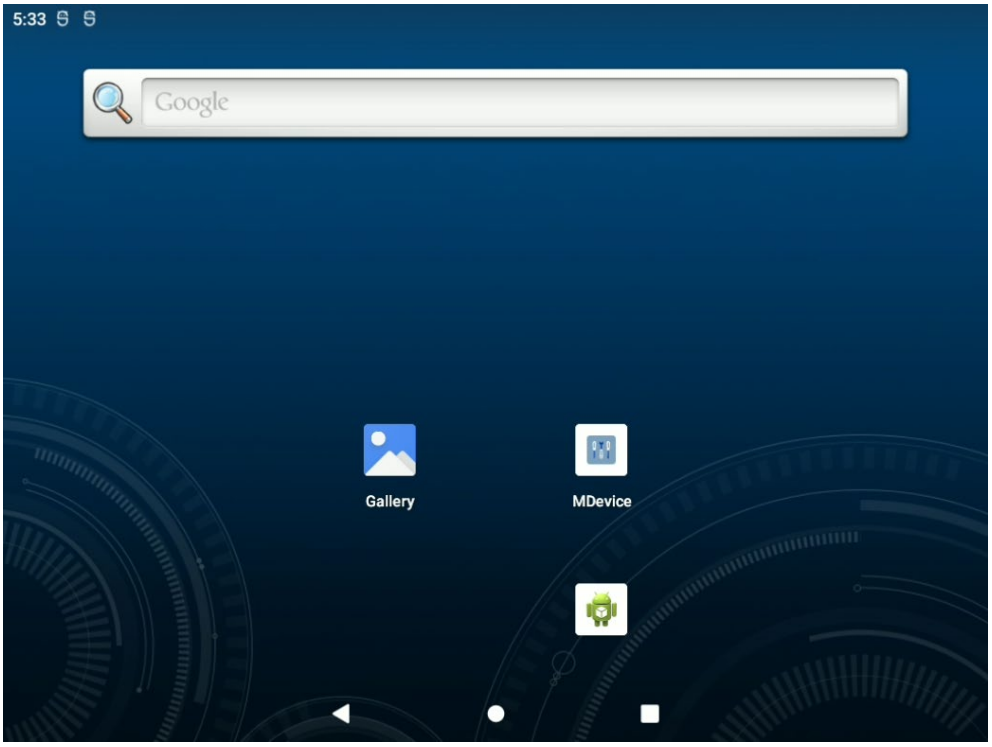


Figure 7-9: Use an USB-Stick at Android for file transfer

2. At home screen, swipe down notification bar.

3. Select as below shown the **Setup** option beneath the **USB-Stick** list entry to configure the attached USB-Stick.

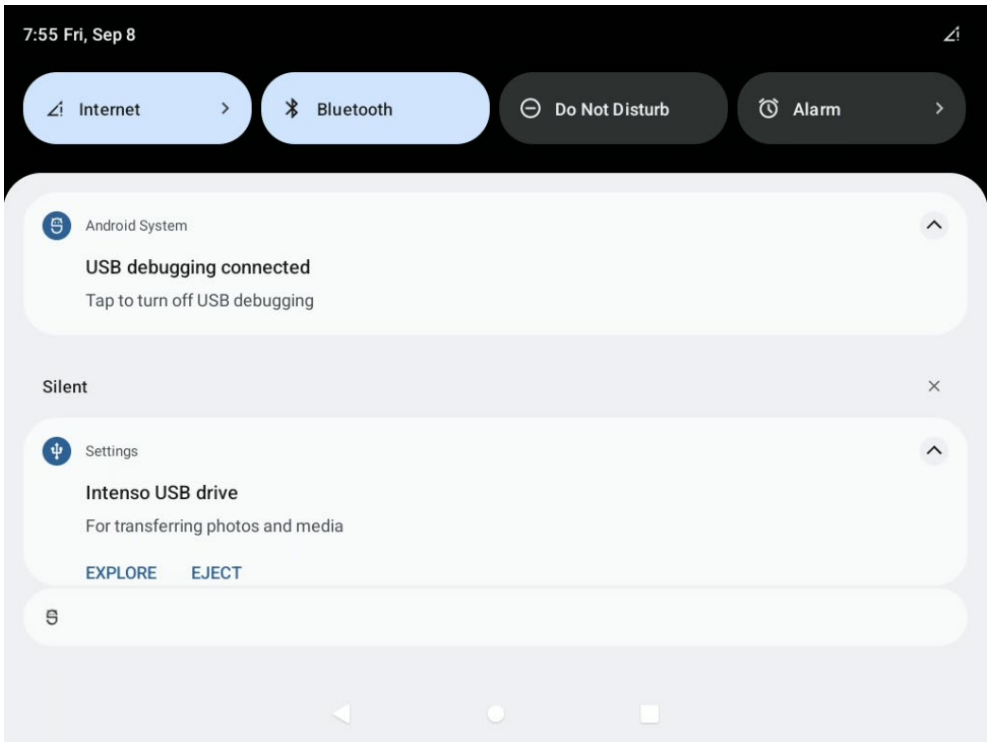


Figure 7-10: Setup option beneath the General USB-Stick list entry

4. Select option **EXPLORE**.

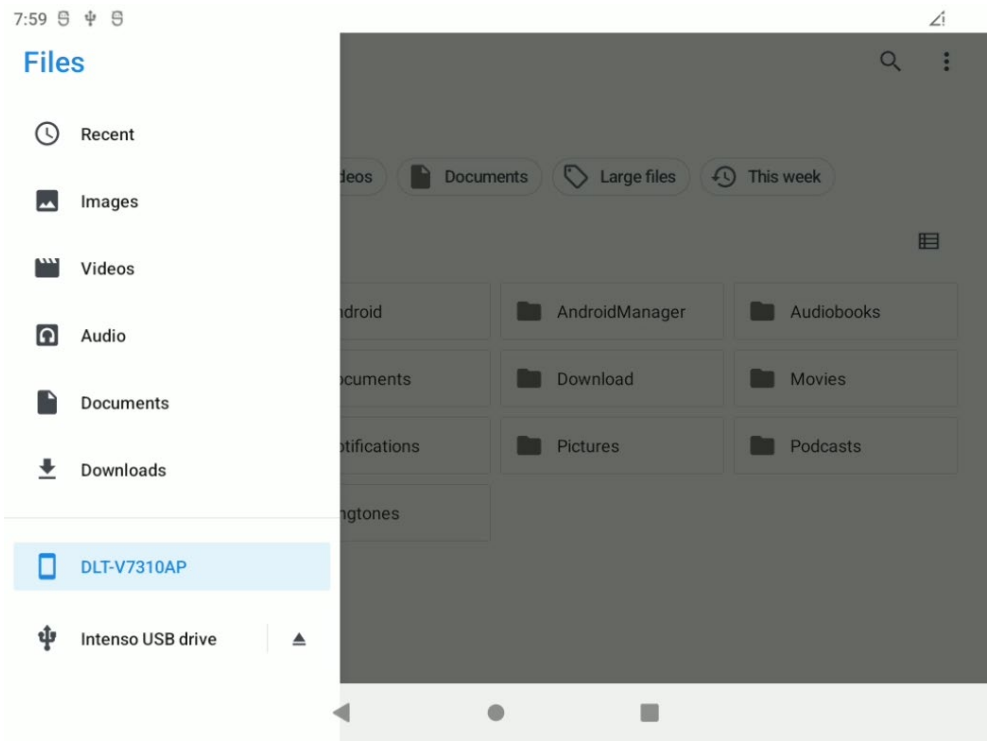


Figure 7-11: Android File Explorer (Internal storage)

The **DLT-V7310AP** stands for internal storage.

After clicking at left side on **DLT-V7310AP** by default the **\SDCARD** folder content will be displayed.

As shown in the next picture as an example a “log_%” file (or more, in case MDevice export was done multiple times before) can be selected.

5. At right corner, select options ⋮ and then **Copy to…**

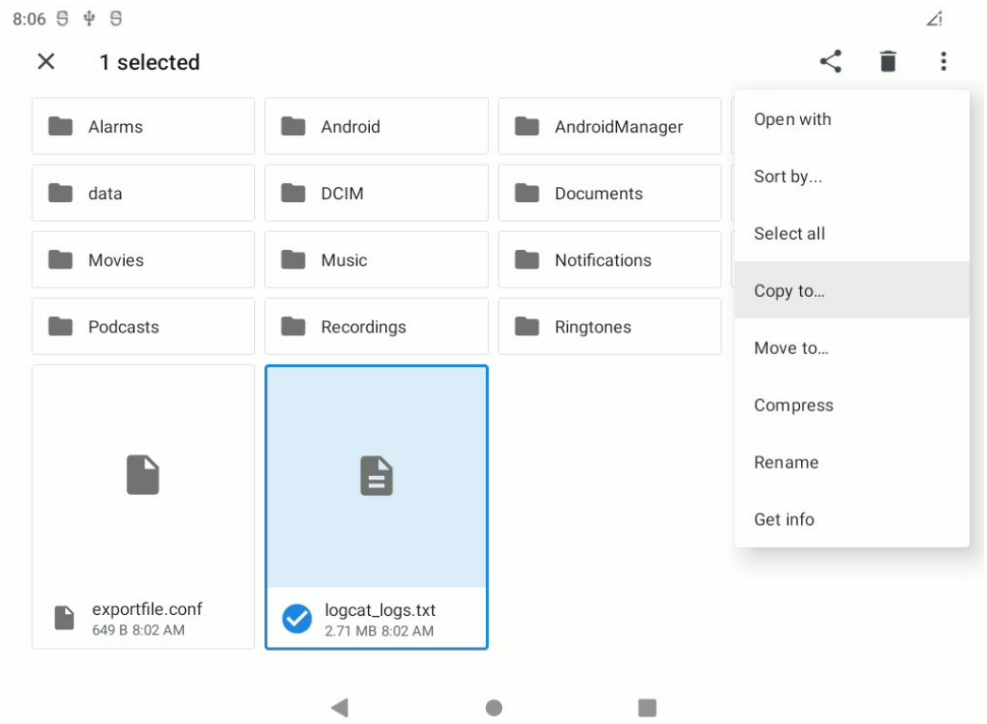


Figure 7-12: Copy progress from internal storage to USB drive

6. Select **USB drive** and then **COPY**.

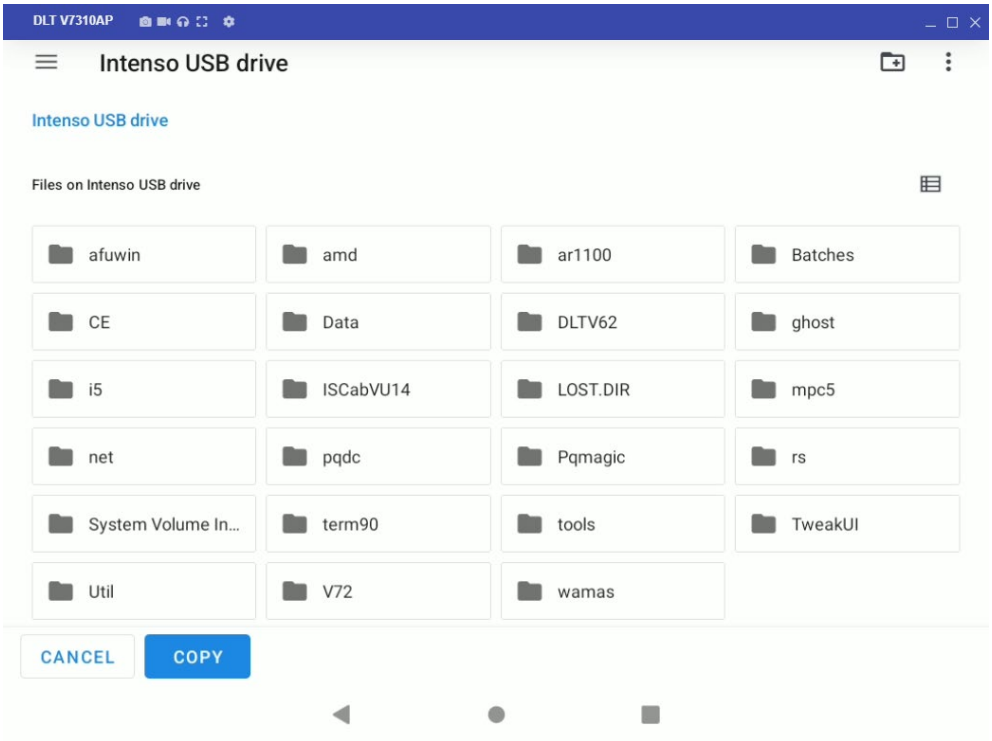


Figure 7-13: USB-Stick (file transfer) - Paste

The copied log file is now part of USB-Stick content.

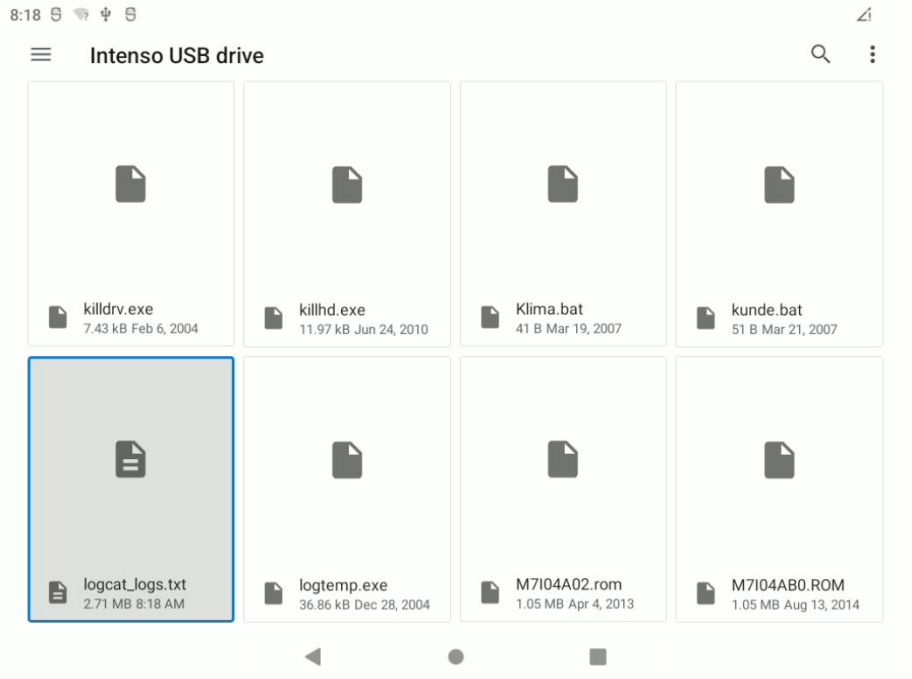


Figure 7-14: USB-Stick (file transfer) - Copied log file

7. Close application and press once again at right corner to open **USB Settings** and **Eject** as shown in the example picture above the USB-Stick.

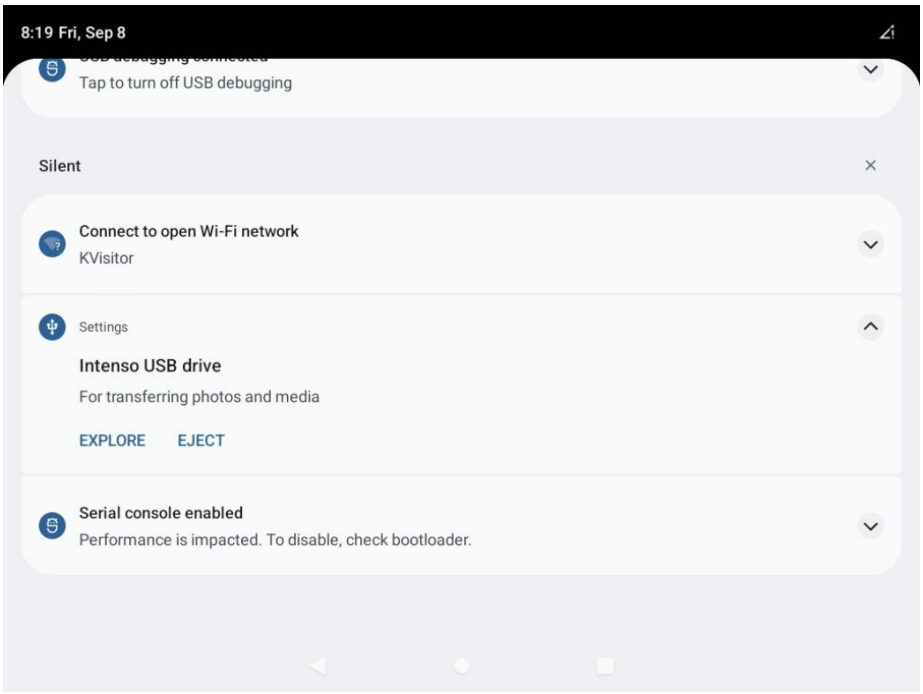


Figure 7-15: USB-Stick (file transfer) - USB Settings - Eject

8. Afterwards the USB-Stick can be removed from **DLT-V73A** terminal.

7.5. Files Explorer

Files Explorer is used to install applications onto the device without connecting to an app store.

NOTE

Due to the security policies integrated with the Security Enhanced Linux Kernel (SEL) underlying Android, USB storage devices have to be enabled on Android before first use. This includes device formatting. To perform the related actions, follow the instructions of the USB storage menu. To access this menu, drag down the notification bar after inserting the USB storage device and click on the USB icon.

7.5.1. APK Installation

To install applications using **Files Explorer** follow the steps below:

1. Copy the package of the application you wish to install (".apk" format) to a USB storage device.
2. Open **Files Explorer** and click **USB storage** with your APK.
3. Click on ".apk" file to start the installation process.

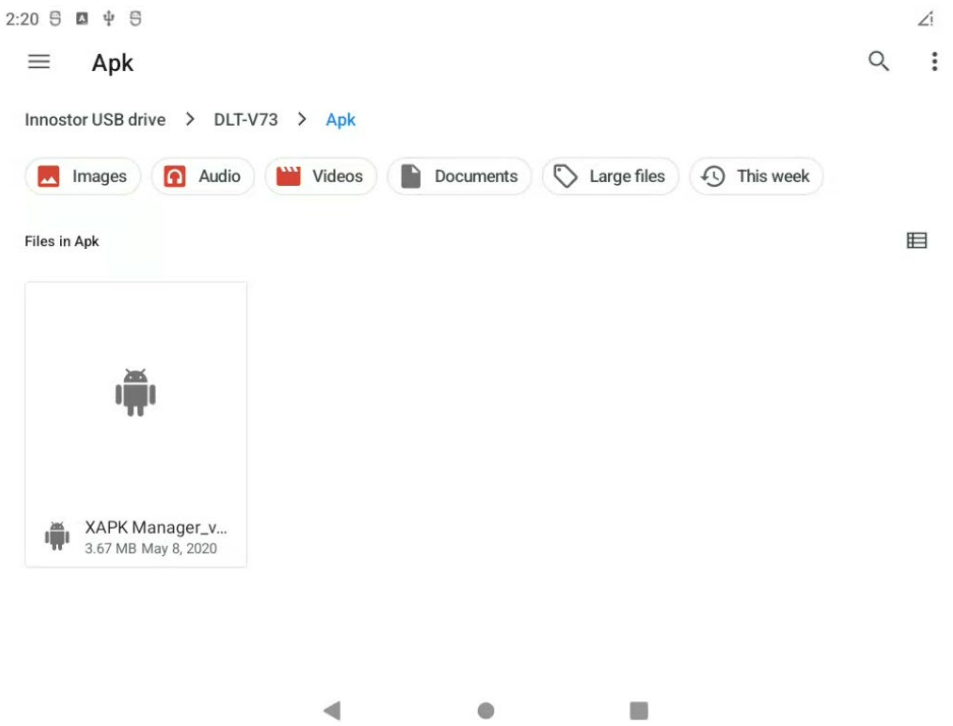


Figure 7-16: Files Explorer

4. At request confirm following message with **CONTINUE.**

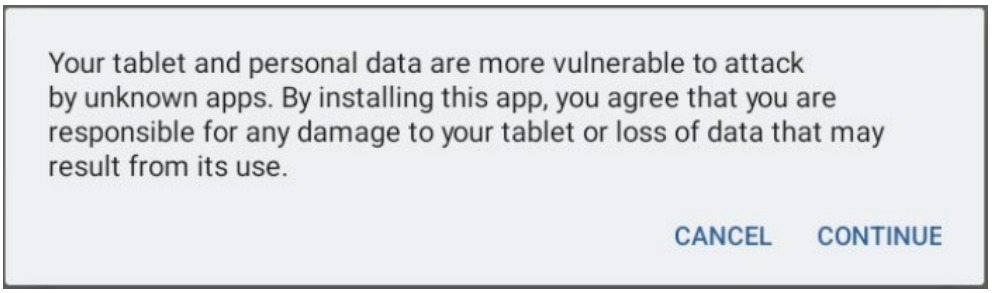


Figure 7-17: Files Explorer

5. Continue with button **INSTALL.**

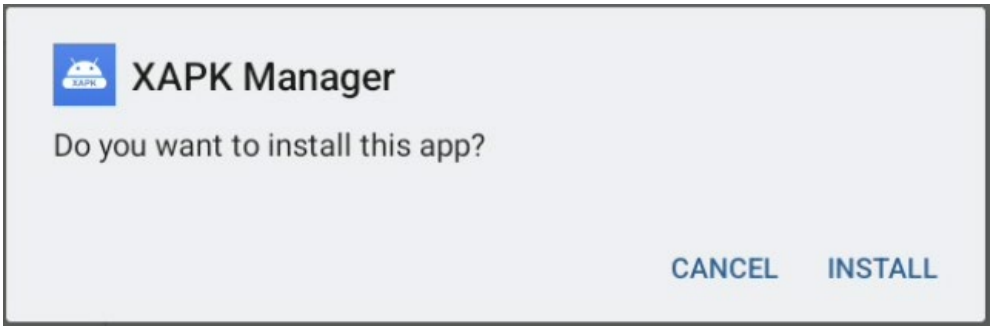


Figure 7-18: XARP Manager – Do you want to install this app?

6. At the end choose between **DONE** or **OPEN** to start newly installed application.

Figure 7-19: XARP Manager – App installed.

7.6. Power off / Restart System

User can **Power off** or **Restart** the system via the **Power** button.

To **Power off** or **Restart** the device press and hold the **Power** button for around 2 seconds on the front panel.

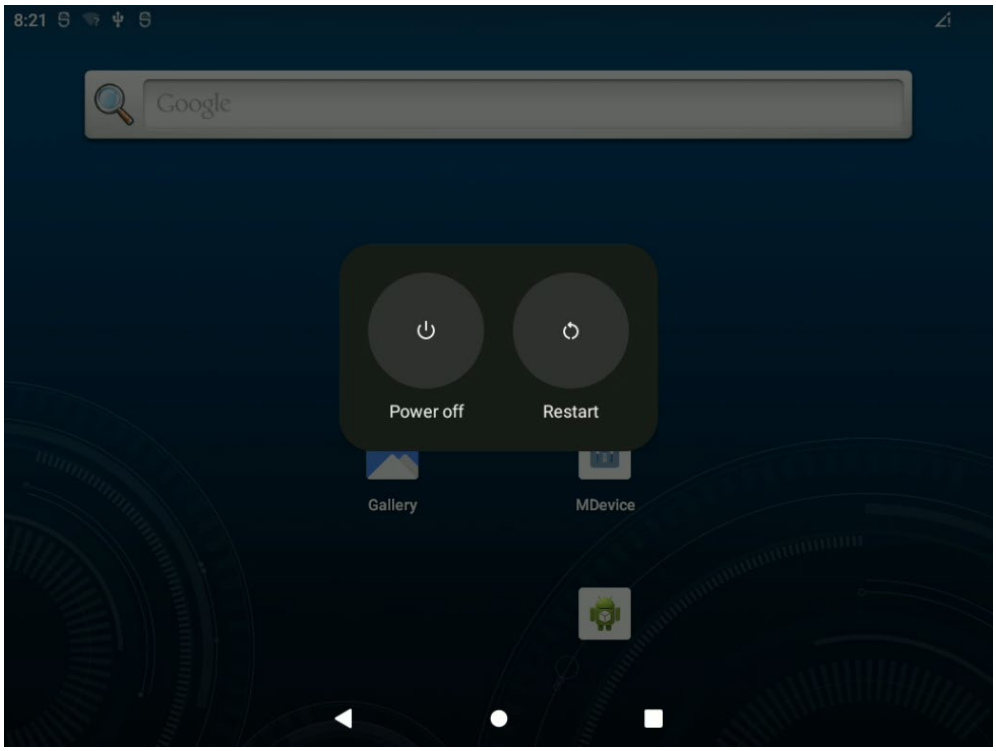


Figure 7-20: Power off / Restart System option

1. Choose either **Power off** or **Restart** from shown menu. Menu can be dismissed by pressing short time at **Power** button again.

NOTE *To perform a system shutdown without enabled Power button perform a long press at Power button greater than 8 seconds.*

7.7. Factory Reset

User can reset the device configuration via software menu.

To reset the device to factory defaults:

1. Go to **Settings** -> **System** -> **Reset options**.

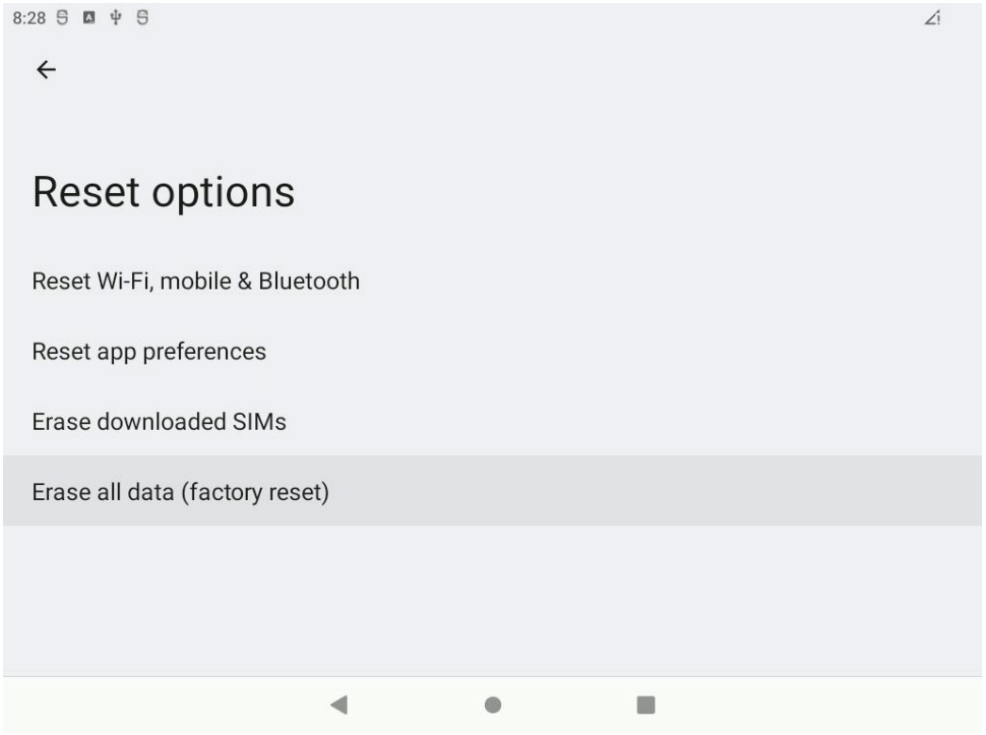


Figure 7-21: Settings menu – Backup and reset

2. Click **Erase all data** (factory reset).

It will erase all data on the DLT-V73A, including Google account, system data, app data and settings, downloaded apps and other user data.

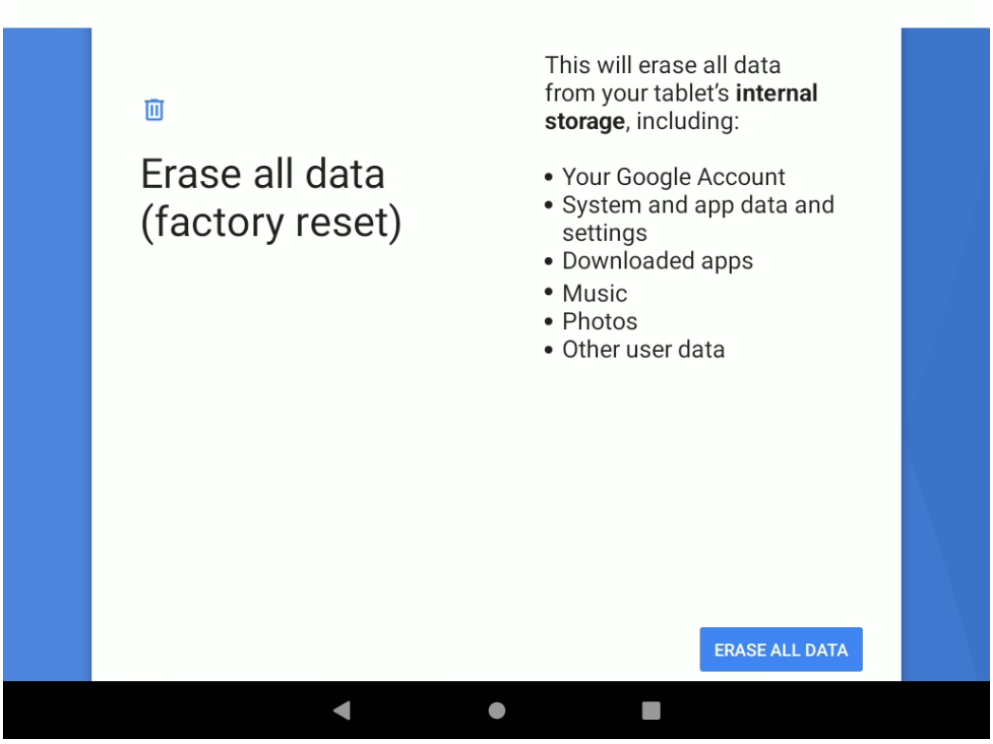


Figure 7-22: Factory data reset

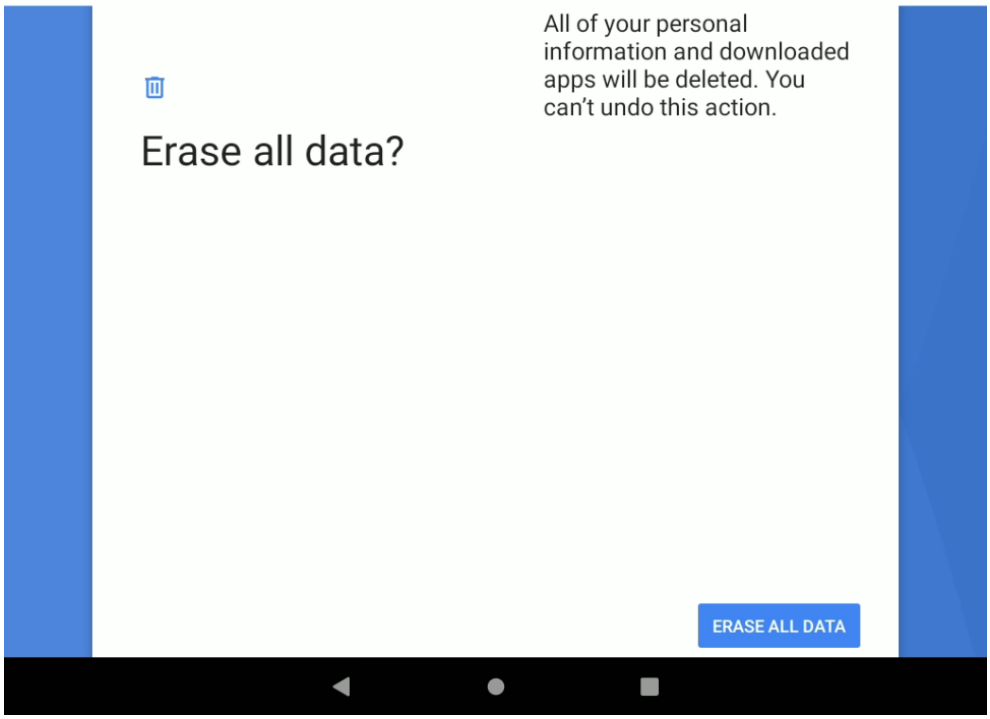


Figure 7-23: Factory data reset – warning note

Once the factory reset is complete, you will return to the Android home screen again.

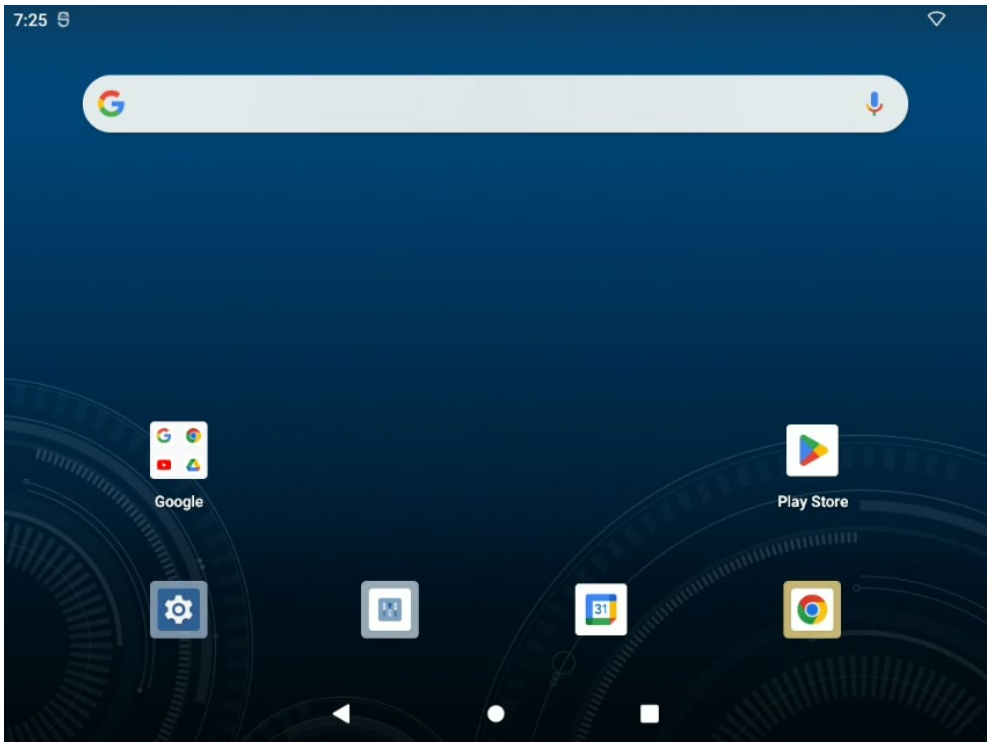


Figure 7-24: Android home screen (GMS)

NOTE *At GMS image version Google Welcome Wizard will be shown instead.*

7.8. Multiple Users

Android is supporting multiple user profiles on the same device. Administrators can use this feature in Native Mode to set up distinct profiles for operators and normal users. Follow the steps below to add new user.

NOTE *Multiple user profiles should only be used in Native Mode. Kiosk Mode (Advantech DeviceOn/iService) have been optimized for devices with a single user profile.*

Add a new user profile in **Settings** -> **System** -> **Multiple Users**.

1. Click the **Add user** item.

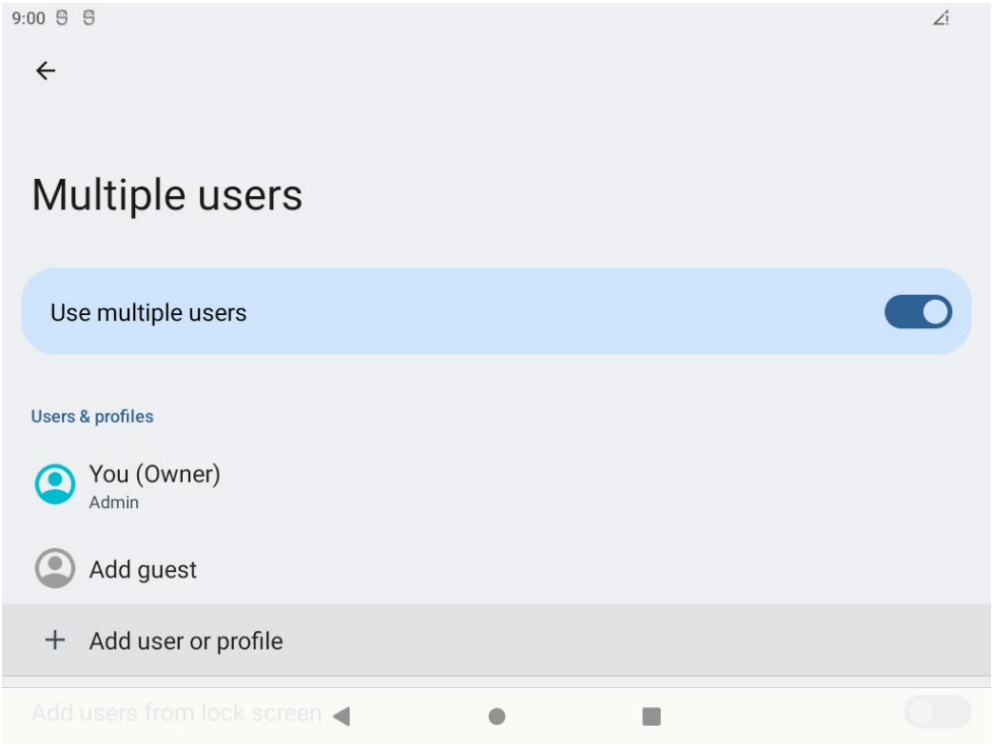


Figure 7-25: Settings – users menu

2. Confirm the upcoming message with **OK.**

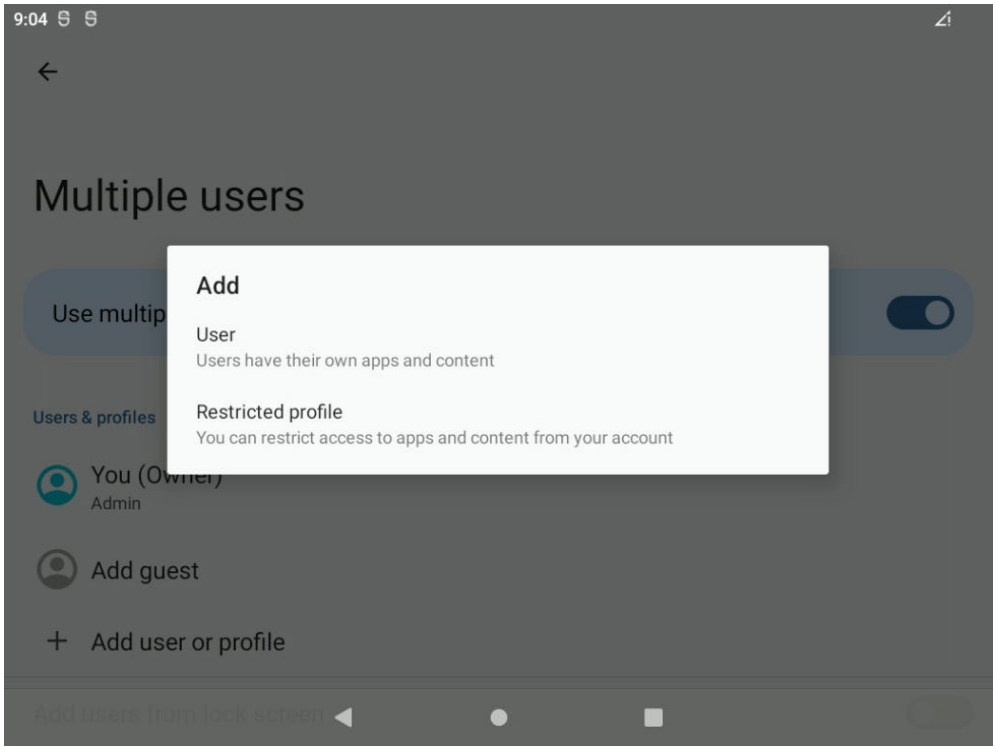


Figure 7-26: Settings – users menu – select user type

3. Choose either standard **User** or **Restricted profile.**

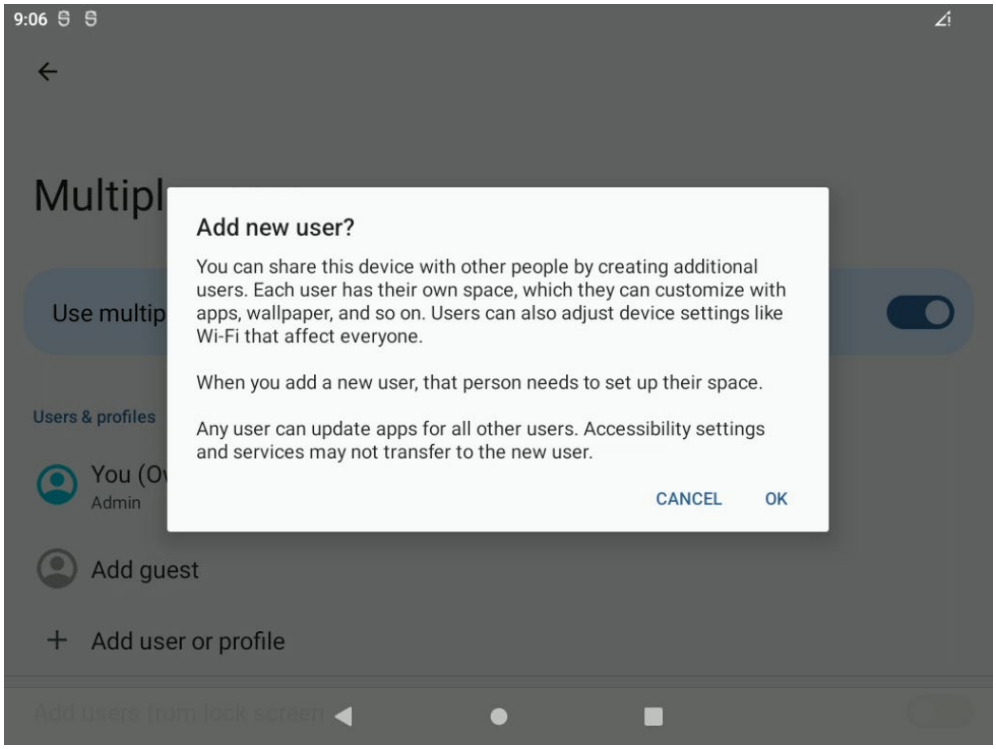


Figure 7-27: Settings – user menu – add new user confirmation request

4. Enter a name for the new user and continue with **OK.**

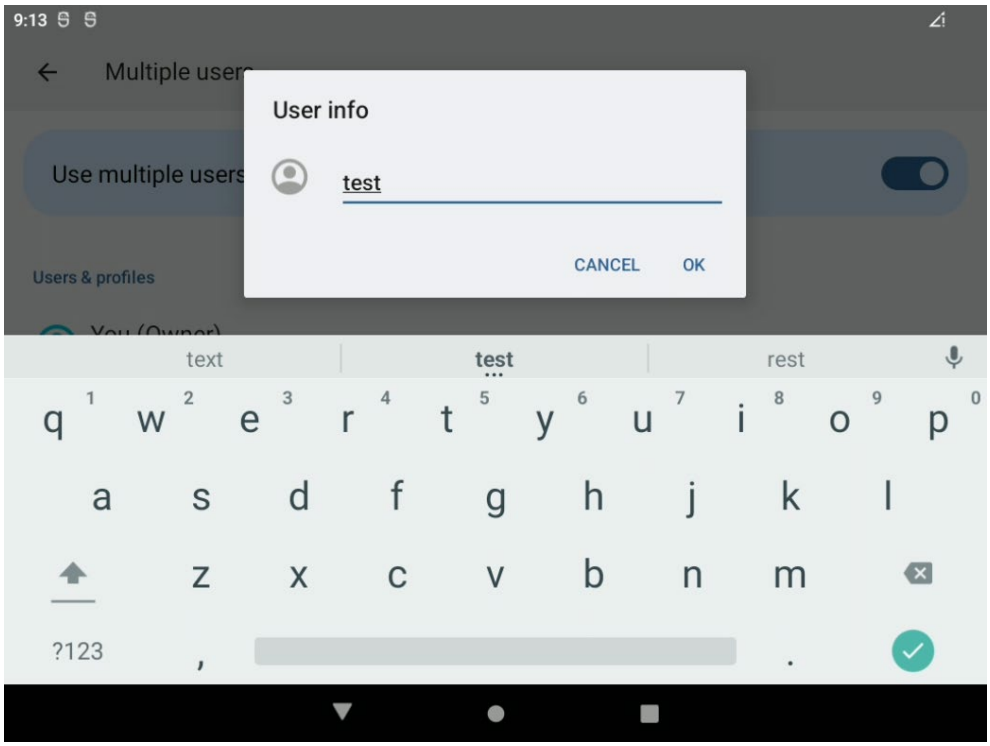


Figure 7-28: Settings – user menu – set name of new user

A **new user** is created.

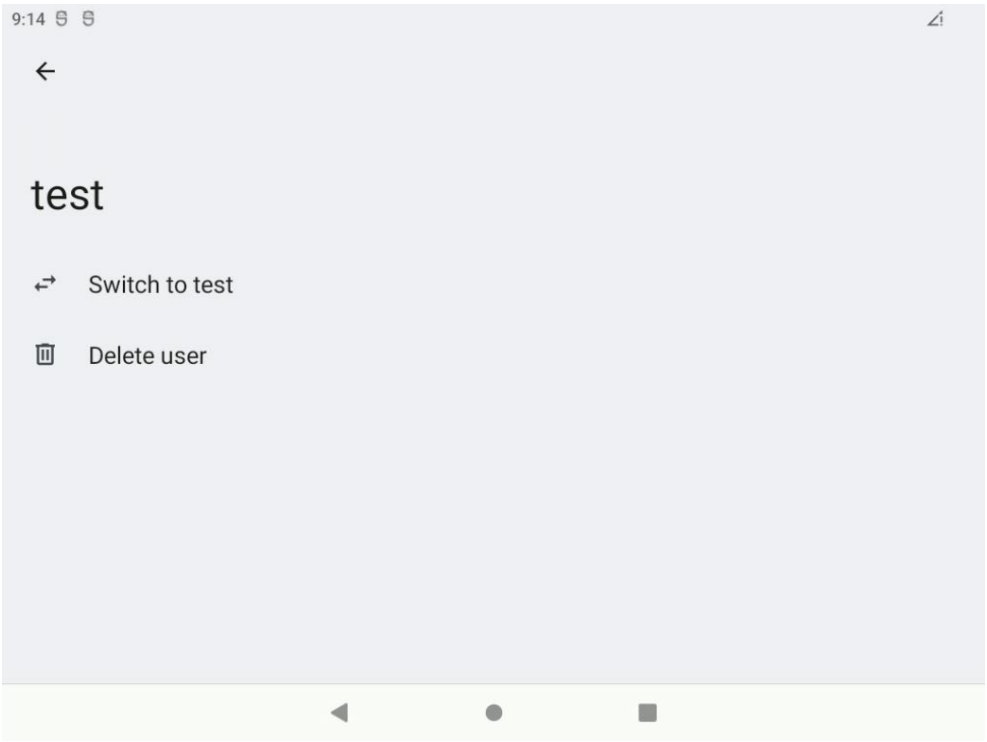


Figure 7-29: Settings – user menu – Switch to newly created user

With option **Switch to test** the new user can be enabled.

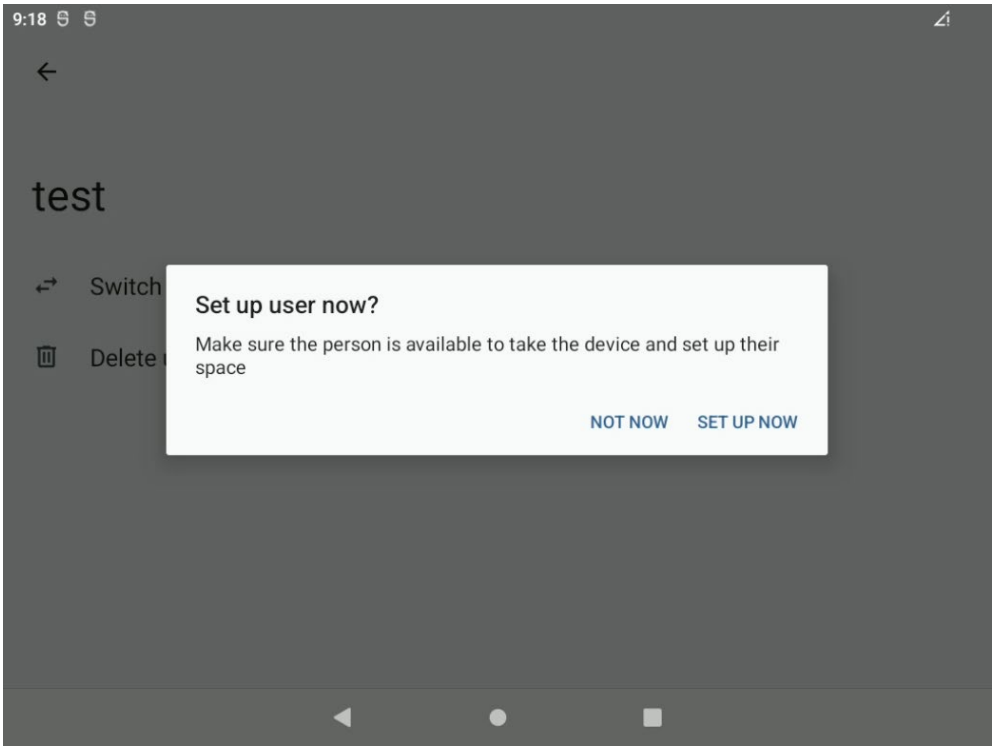


Figure 7-30: Settings – Request Set up user now?

At request continue with **SET UP NOW.**

1. Click on the right corner to choose a different user to login.

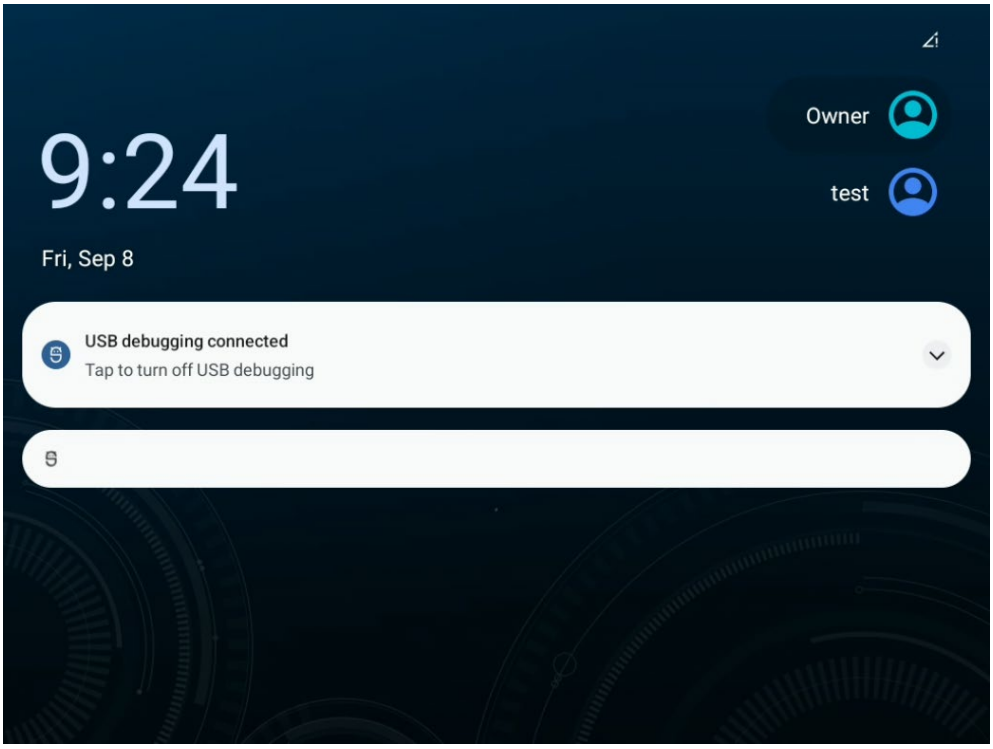


Figure 7-31: Lock screen with multiple user option

7.9. ADB over USB (Type-C)

NOTICE ***Prevent system malfunction.***

<u>The use of ADB requires in-depth knowledge of the Android system. It's only intended to be used by Android experts for advanced troubleshooting and maintenance. Advantech Co., Ltd. expressly disclaims any warranty or liability related to the use of ADB.</u>

Android supports ADB over USB (Type-C).

PC that gets connected to DLT-V73A industrial terminal required to have ADB utilities installed either Windows or Linux version.

An USB-A to Type-C connector cable is required to setup connection between PC and DLT-V73A terminal.

NOTE

Please be aware of, that the USB (Type-C) OTG port which is located under the blue antenna cap works currently only in host mode.

It is not possible to plug in USB sticks and keyboards to be used inside Android OS.

Please make sure to connect the USB (Type-C) cable between your PC and the DLT-V73A terminal BEFORE switching on the unit. This will set the required (function mode) for ADB connection automatically.

About security reason this feature is by default **disabled** and needs to be activated by user in case required.

1. Unscrew the blue antenna cap from top of DLT-V73A terminal.

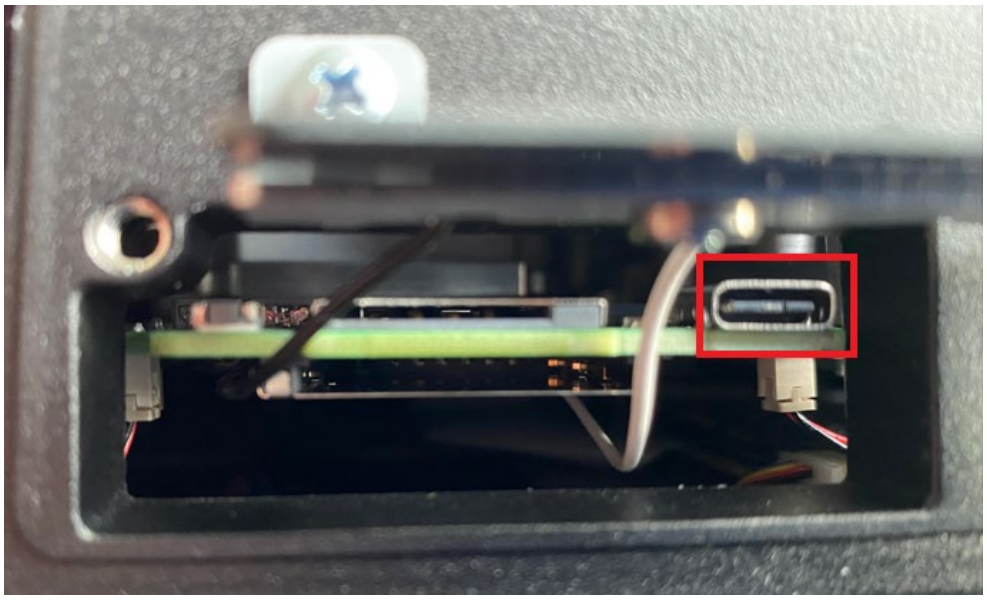


Figure 7-32: USB-C connector (top view)

2. Connect the USB-A to Type-C connector cable between PC and DLT-V73A.

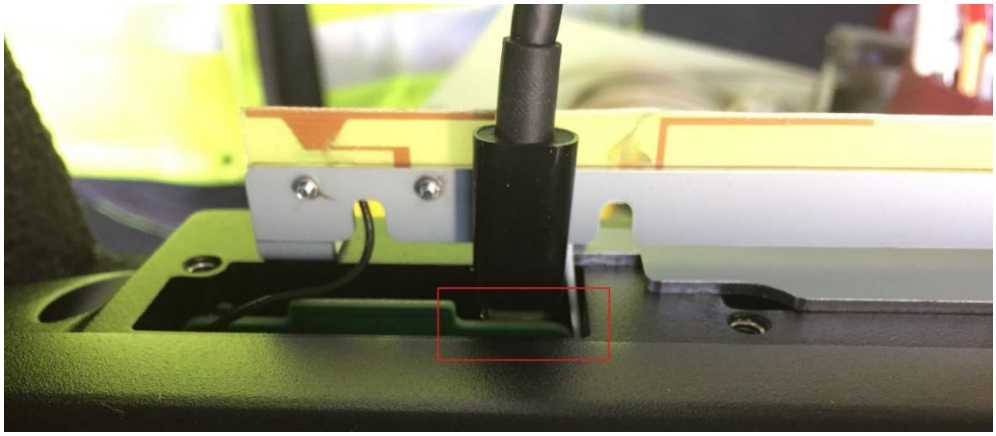


Figure 7-33: USB cable connected to port (top view)

3. Switch on the DLT-V73A or perform a system reboot.

4. Change to **Settings** -> **About tablet**.

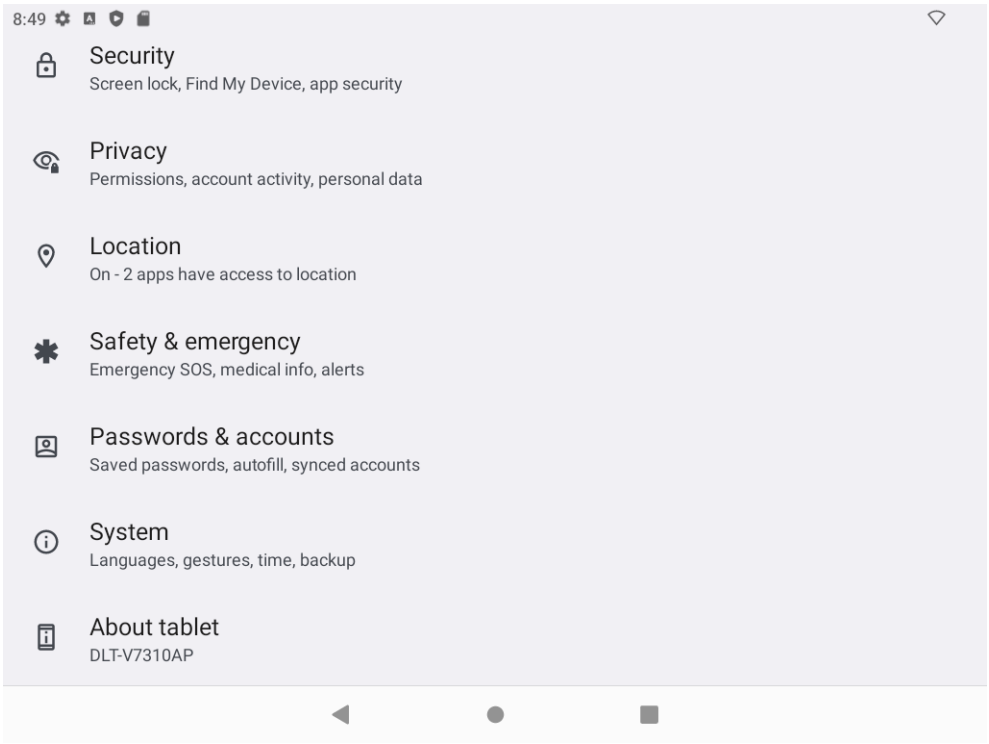


Figure 7-34: Settings – About tablet

5. Scroll down to see the **Build number**.

6. Press multiple times using the touch at **Build numbe**r until the text **"You are now a developer!"** appears. You must, at least, press seven times.

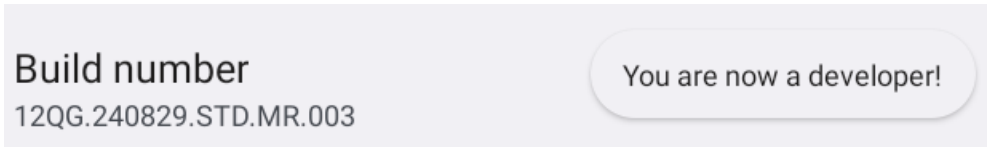


Figure 7-35: Build number – system message pop-up

7. Change back to **Settings** -> **System**.

8. Click now at enabled option **Developer options**.

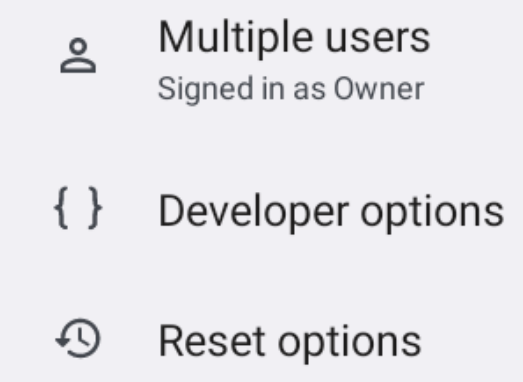


Figure 7-36: Settings – System – Reset options

9. Scroll down to option **USB Debugging** and enable it.

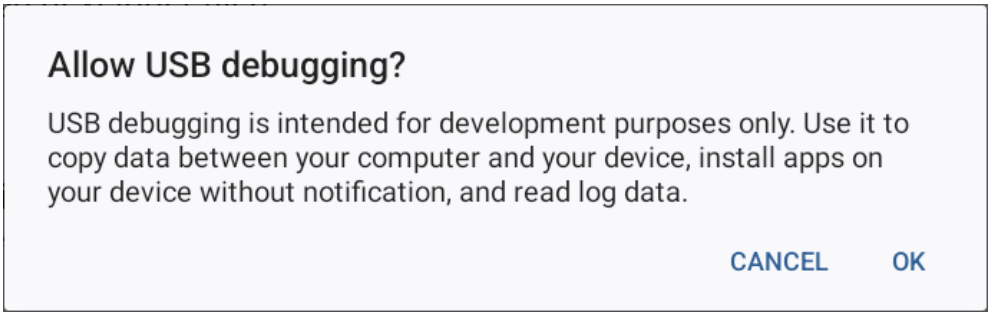


Figure 7-37: user message – Allow USB debugging

10. Confirm above shown upcoming message with **OK**.

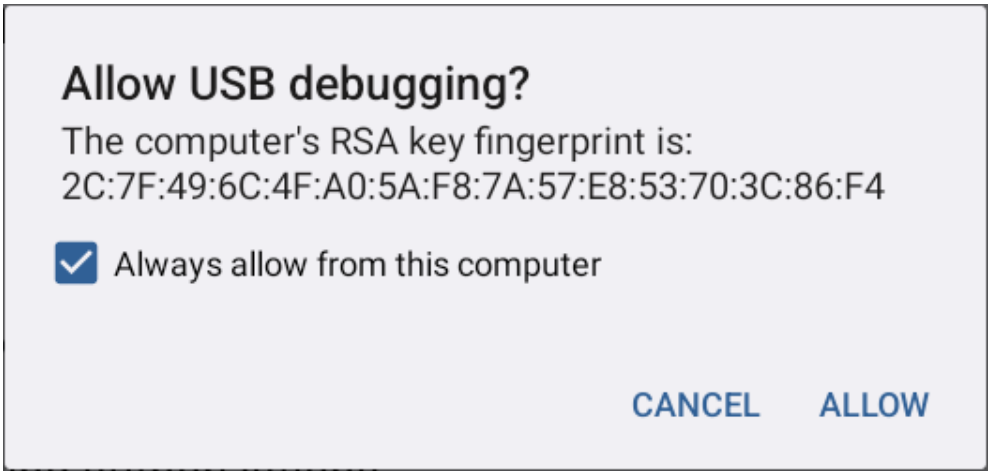


Figure 7-38: user message – Always allow from this computer

11. At request, enable checkbox and continue with **ALLOW**.

7.10. ADB Commands

After enabling the ADB Connection described in chapter *7.9 ADB over USB (Type-C)* standard ADB commands can be executed at DLT-V73A.

NOTICE *PC that gets connected to DLT-V73A industrial terminal required to have ADB utilities installed either Windows or Linux version.*

Each Linux distribution has own way to install the Android ADB utilities so please check vendor.

Refer the link http://developer.android.com/tools/help/adb.html *for more ADB commands.*

7.10.1. Open / Close ADB connection

To open / close an ADB connection from PC side with installed ADB utilities.

Open → Input the command on Windows/ Linux PC to connect target device

```
$ adb shell
```

Close → Exit and disconnect

```
$ exit
```

7.10.2. Screen Capture using ADB

It is used to create to capture screenshots of Android.

Capture → screen and save to local DLT-V73A storage.

```
$ adb shell screencap –p /sdcard/pic1.png
```

Copy → the picture to PC

```
$ adb pull /sdcard/pic1.png
```

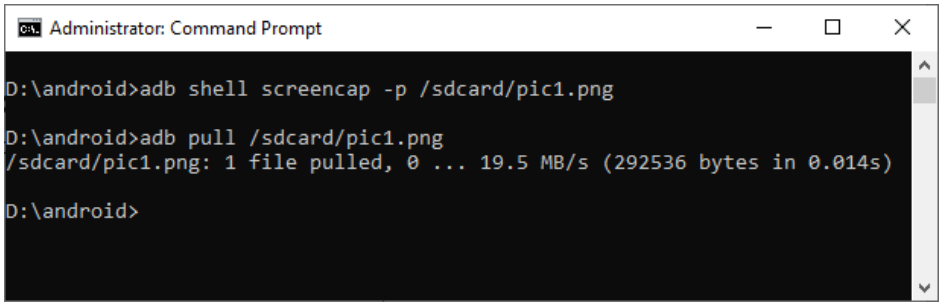


Figure 7-39: Capture Screen with ADB (Windows OS)

7.10.3. Upload files using ADB

To upload files.

Copy → a file to the DLT-V73A terminal

```
$ adb push test.png /sdcard/test.png
```

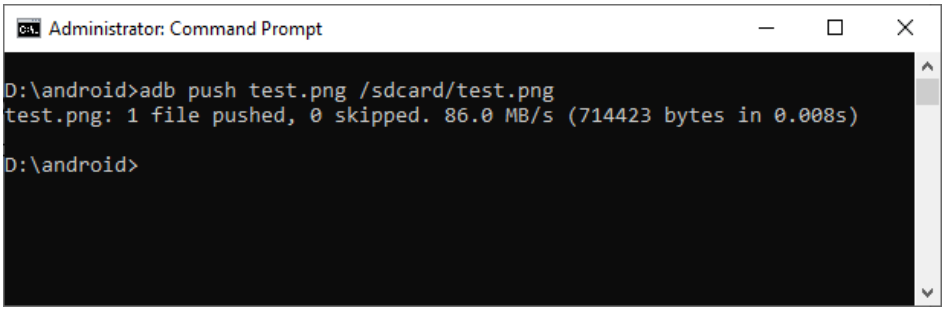


Figure 7-40: Upload files with ADB (Windows OS)

7.10.4. Install apk files

To install new applications.

Remote install → an application (.apk) file to the DLT-V73A terminal

```
$ adb install DLT_V73_FACTORY_TEST.apk
```

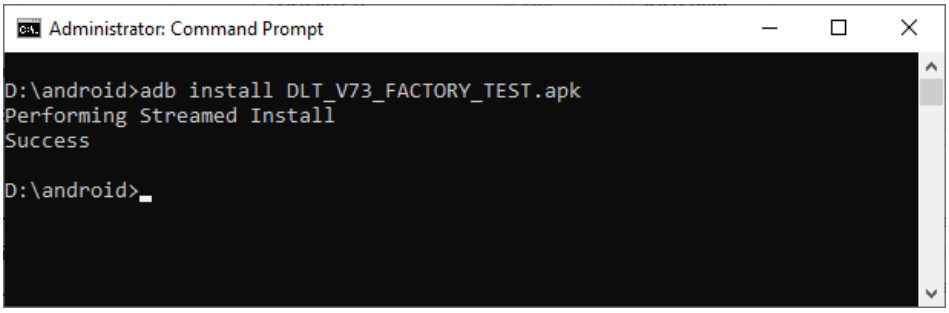


Figure 7-41: install apk files with ADB (Windows OS)

7.11. External Partners

The DLT-V73A supports several software, used in logistics.

List of software supported:

- SOTI: Enterprise enrollment mobile software
- StayLinked: Warehouse management software

NOTE *For a detailed instruction about latest available SOTI and StayLinked client including feature list please refer to manufacture homepage.*

7.12. SOTI support

This chapter contains general information for SOTI support at Android12 for DLT-V73A.

NOTE *SOTI client software is provided by external partner. Software functionality and support can be changed due to SOTI client software releases. For a detailed instruction about latest available SOTI client including feature list please refer to manufacture homepage.*

7.12.1. AOSP Installation

Installation requirements

The following SW version (or newer) is required to support SOTI at Android 12 AOSP for Advantech DLT-V73A:

Agent Version: **v2024.0.3**

Additionally, it is recommended to get the latest available SOTI MobiControl Device Agent for new installation available for DLT-V73A (Android 12) from the following SOTI webpage:

https://docs.soti.net/mobicontrolagentdownloads

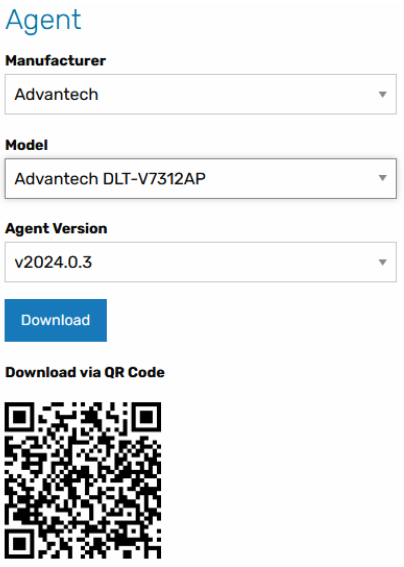


Figure 7-42: SOTI MobiControl Device Classic Agent download site

After the download of the Classic SOTI agent .apk file you can use an USB-Stick to transfer the file to the DLT-V73A. This is described in more detail at section *7.4 USB-Stick (file transfer)*.

1. After the file transfer, perform a double click to start the installation.

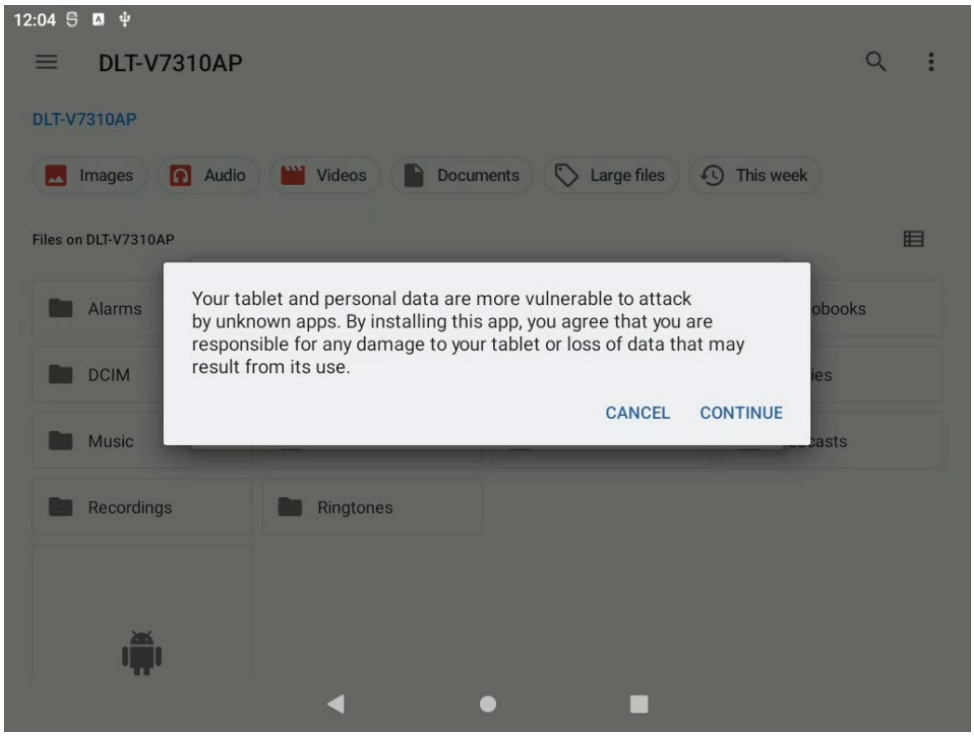


Figure 7-43: SOTI MobiControl Device Agent (AOSP) installation

2. Proceed with **CONTINUE.**

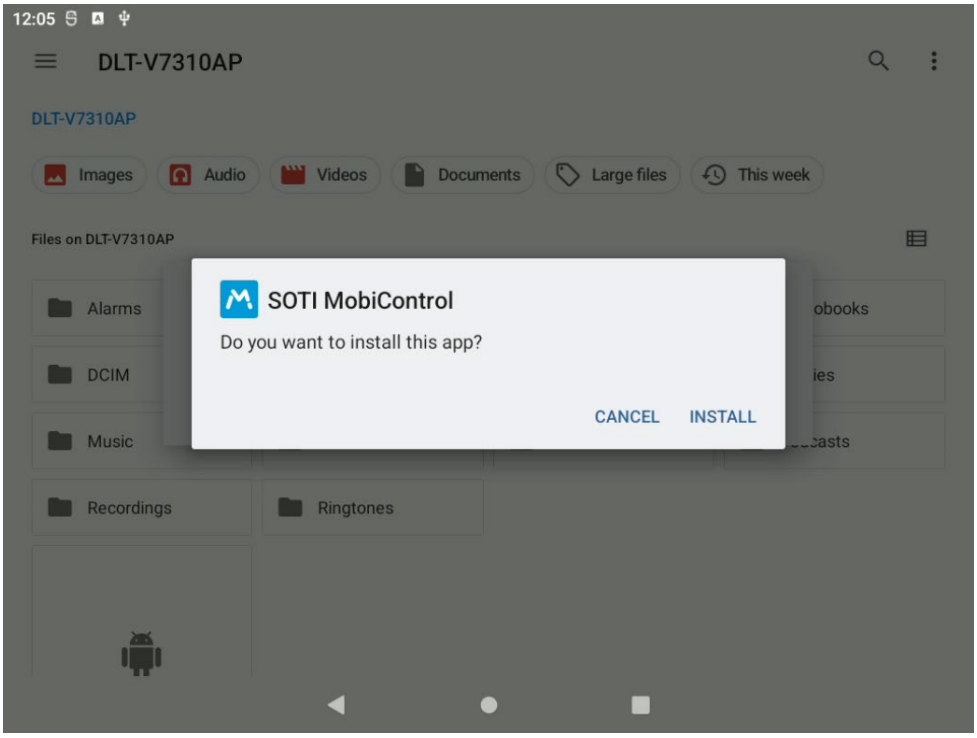


Figure 7-44: SOTI MobiControl Device Agent (AOSP) installation

3. Proceed with **INSTALL.**

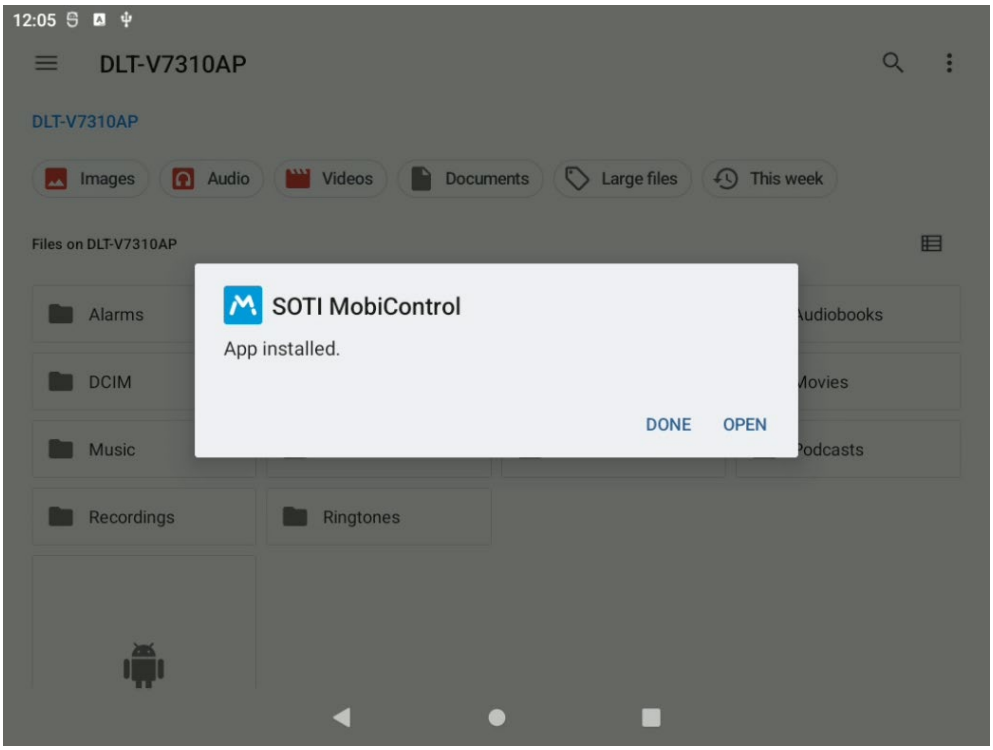


Figure 7-45: SOTI MobiControl Device Agent (AOSP) installation

4. Choose **DONE.**

5. Open Settings – **Apps**.

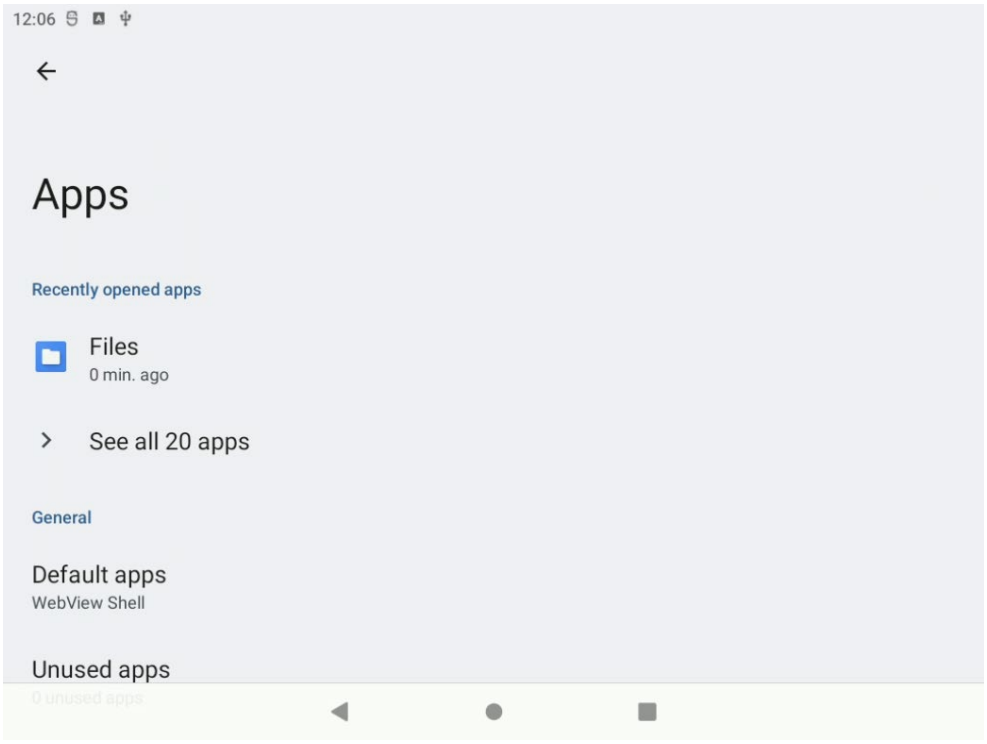


Figure 7-46: SOTI MobiControl Device Agent (AOSP) set Permission

6. Click at **See all %number of current installed apps% apps**.

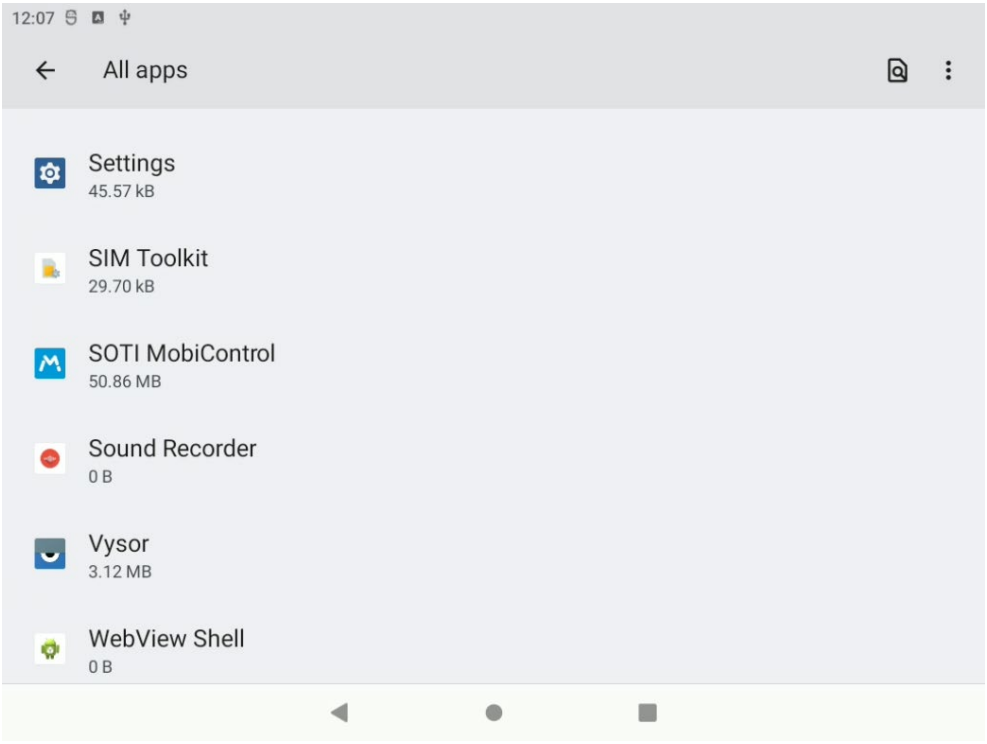


Figure 7-47: SOTI MobiControl Device Agent (AOSP) set Permission

7. Scroll down and click at **SOTI MobiControl.**

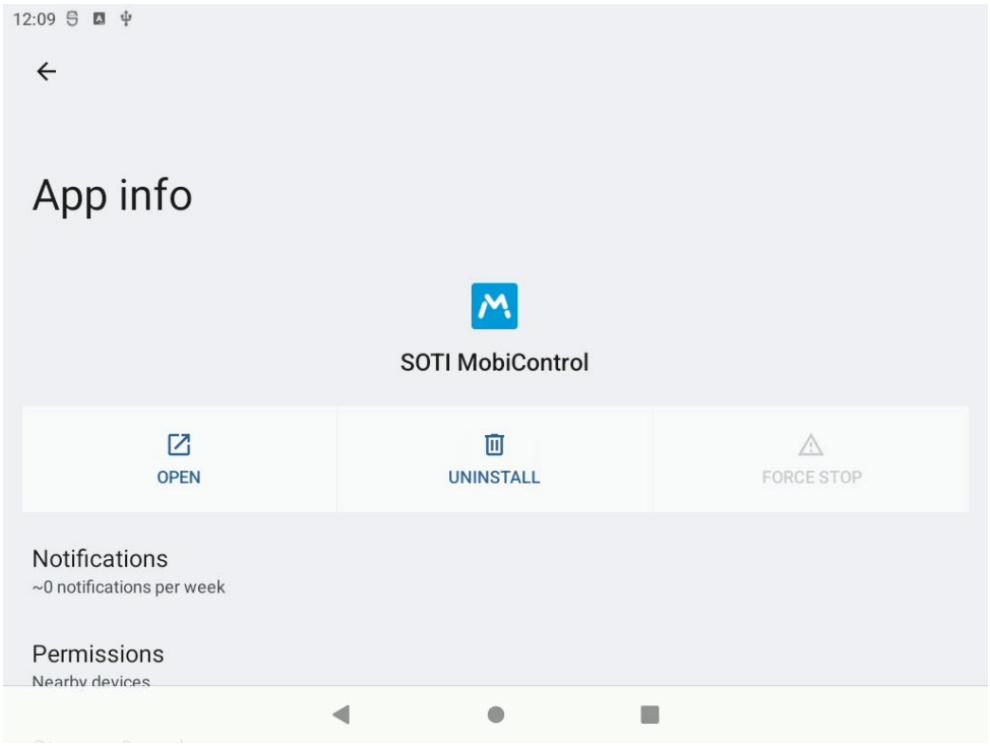


Figure 7-48: SOTI MobiControl Device Agent (AOSP) set Permission

8. Click next at **Permissions.**

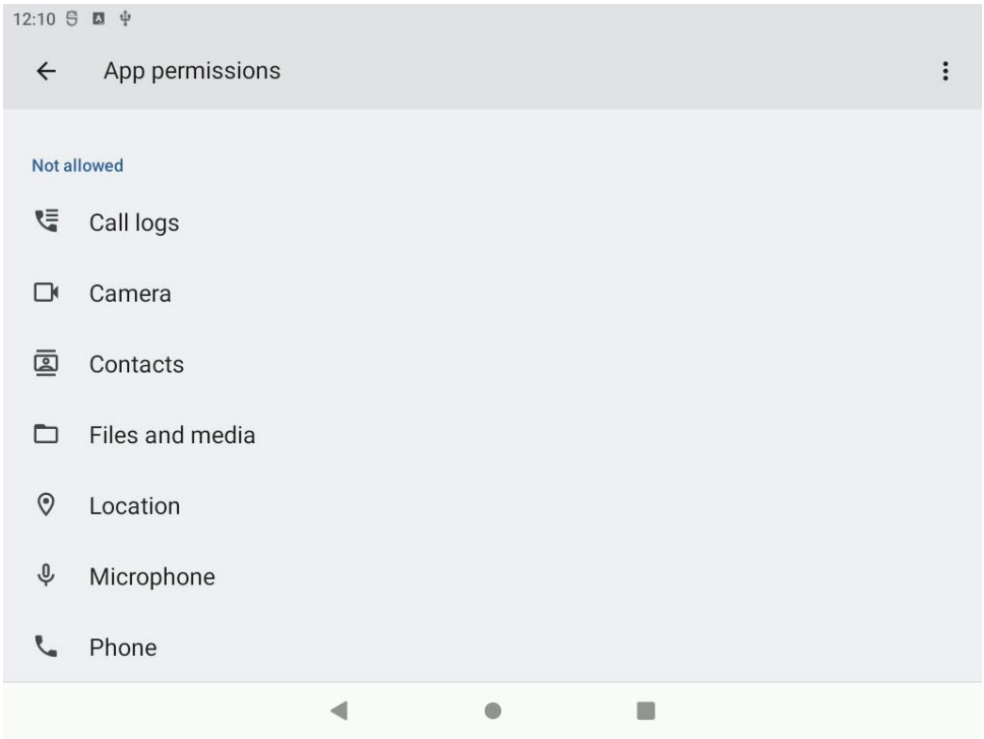


Figure 7-49: SOTI MobiControl Device Agent (AOSP) set Permission

9. Click at **Location.**

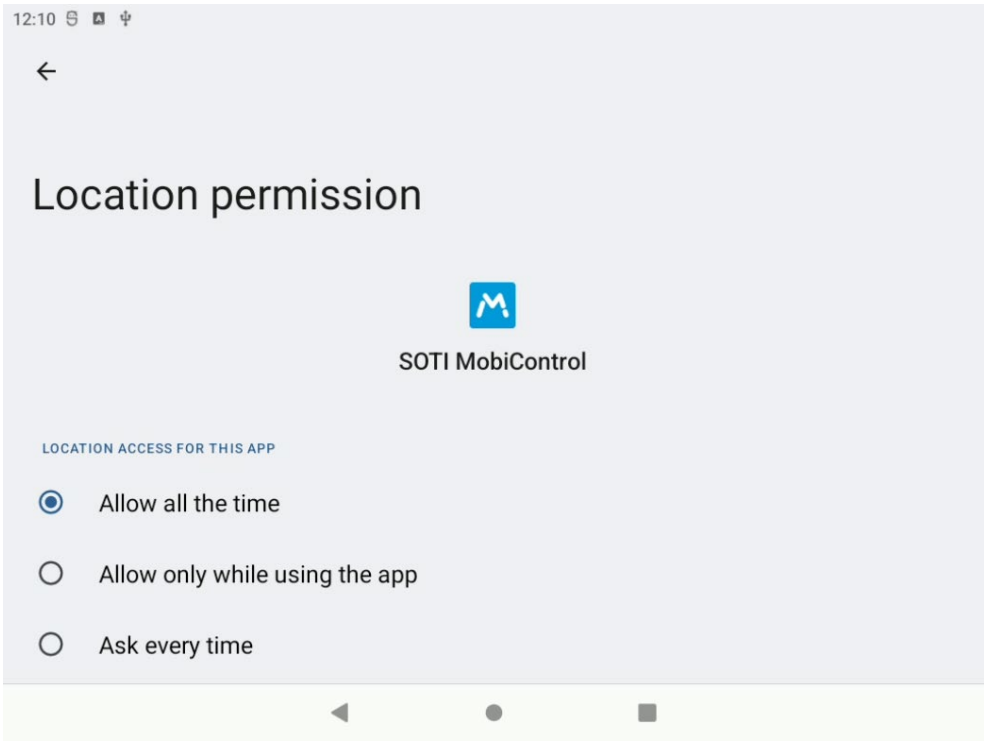


Figure 7-50: SOTI MobiControl Device Agent (AOSP) set Permission

10. Enable option **Allow all the time**.

11. Close Settings – Apps.

12. Start SOTI MobiControl agent.

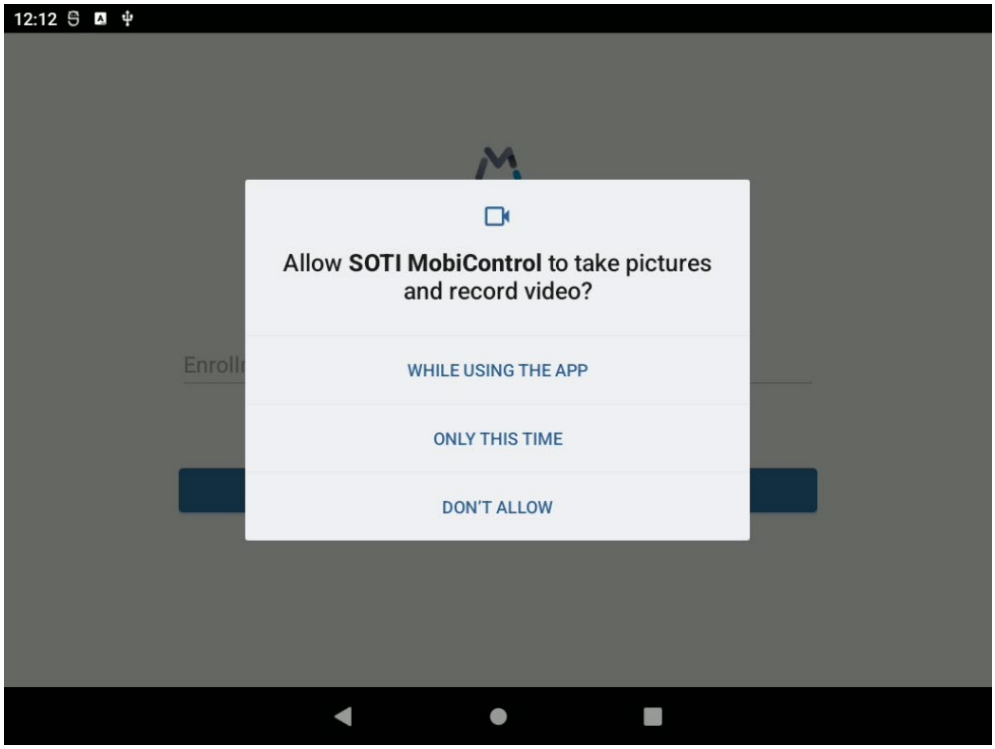


Figure 7-51: SOTI MobiControl Device Agent (AOSP) set Permission

13. Select **WHILE USING THE APP**.

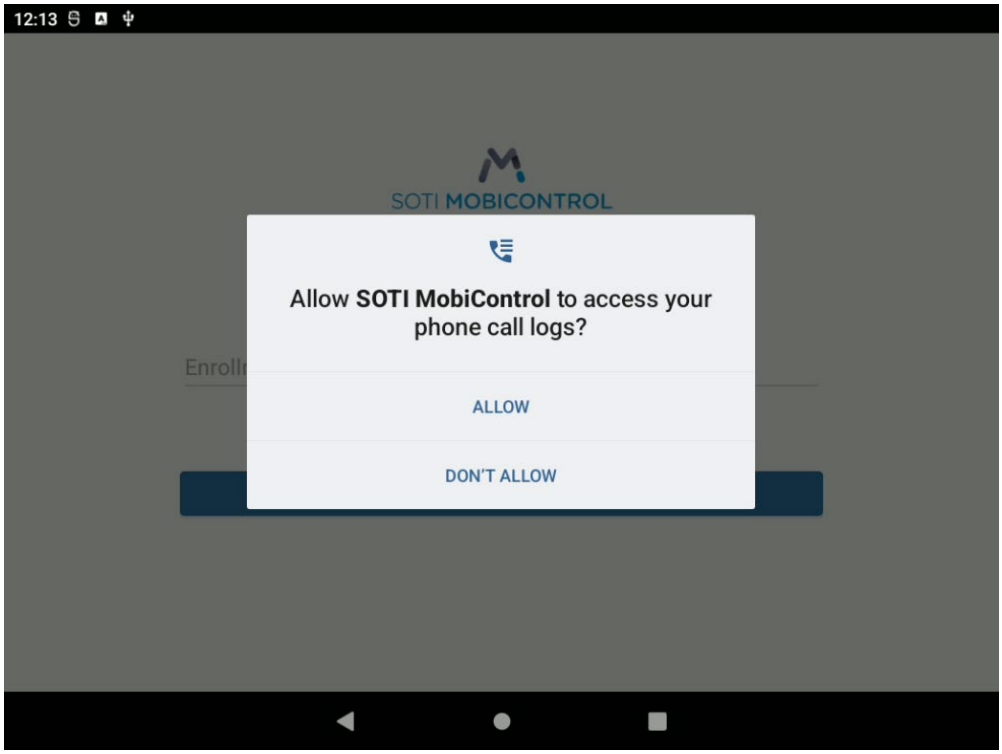


Figure 7-52: SOTI MobiControl Device Agent (AOSP) set Permission

14. Select **ALLOW.**

15. Repeat selecting **ALLOW** for all upcoming requests until you see the SOTI login screen.

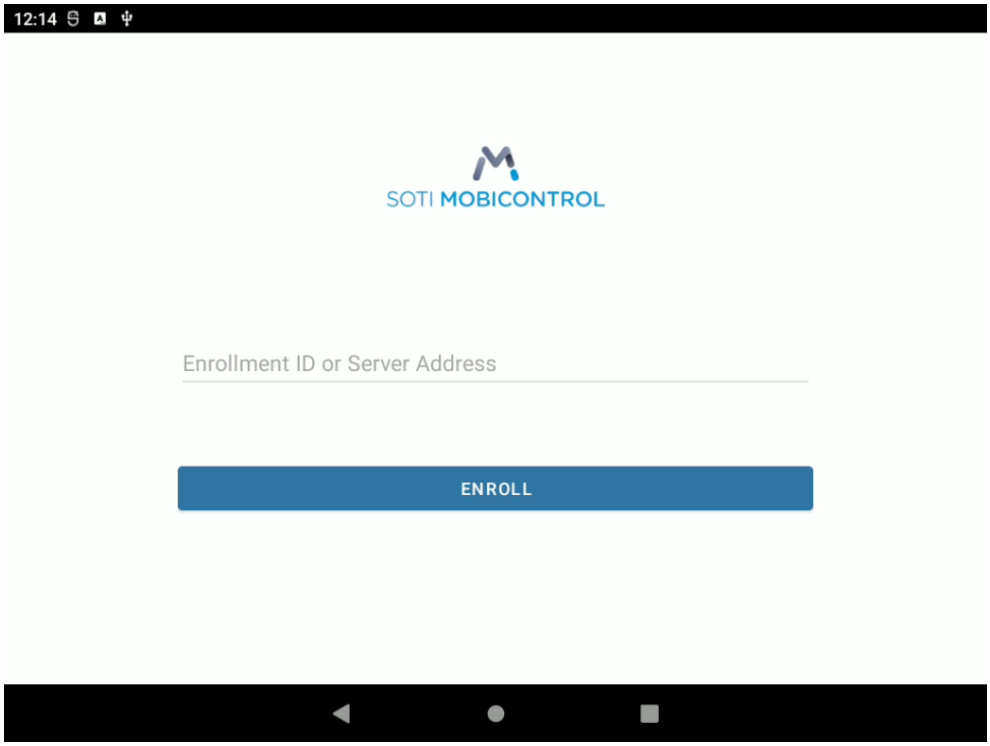


Figure 7-53: SOTI MobiControl Device Agent (AOSP) Enrollment

16. Now enter your **Enrollment ID** or **Server Address** to get access to your company SOTI environment.

NOTE

For further instruction how to use SOTI MobiControl features in general please refer to manufacture homepage.

https://docs.soti.net/

7.12.2. GMS Installation

While using the GMS version of DLT-V73A Android12 image please use the Google Play Store to download the latest available SOTI client.

NOTE *Please be sure not to use the Android Classic SOTI agent at GMS image version because should only be used in combination with Android12 AOSP image version for Advantech DLT-V73A.*

1. Open Google Play Store and search for **SOTI mobicontrol**.

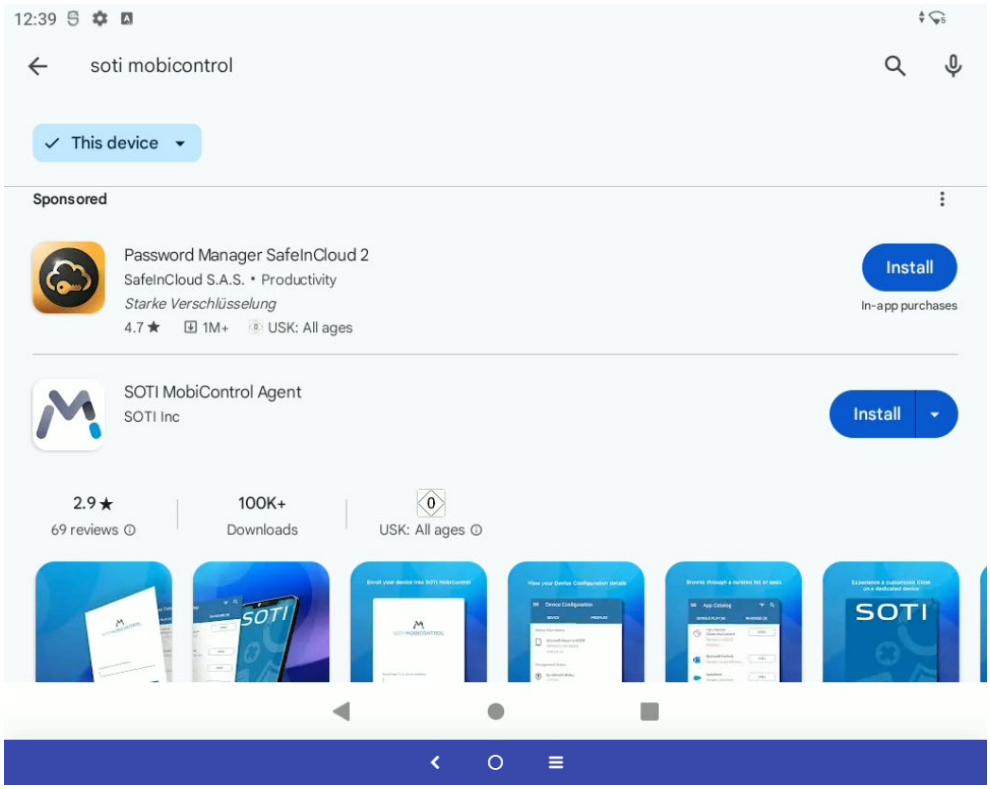


Figure 7-54: SOTI MobiControl Device Agent (GMS) installation

2. Continue with **Install.**

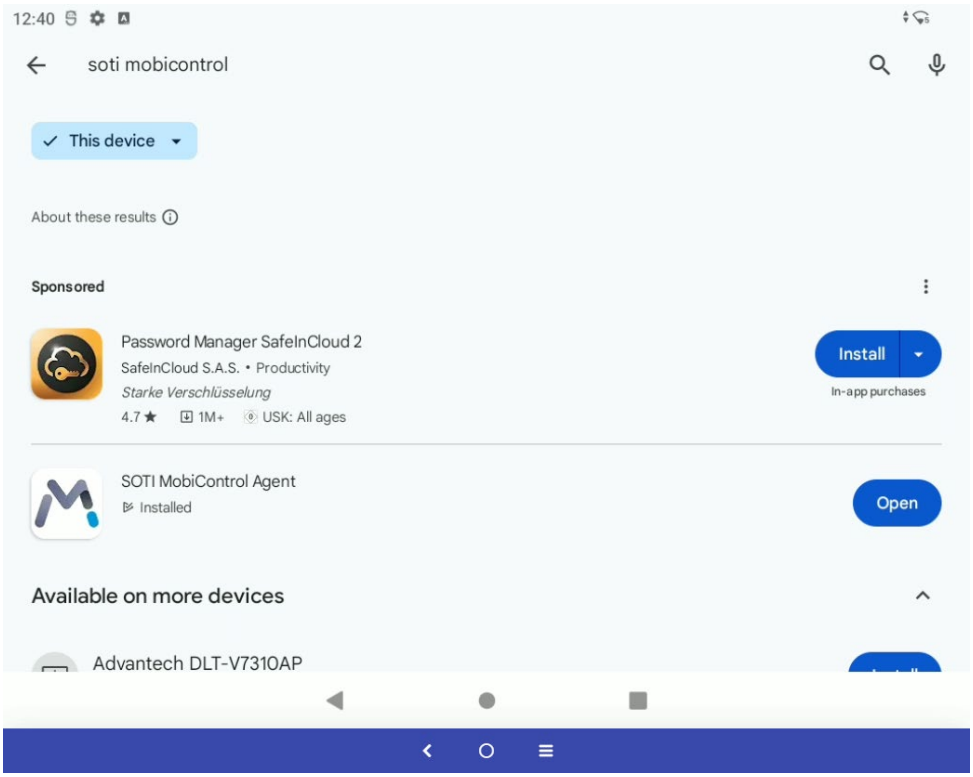


Figure 7-55: SOTI MobiControl Device Agent (GMS) installation

3. After installation done continue with **Open**.

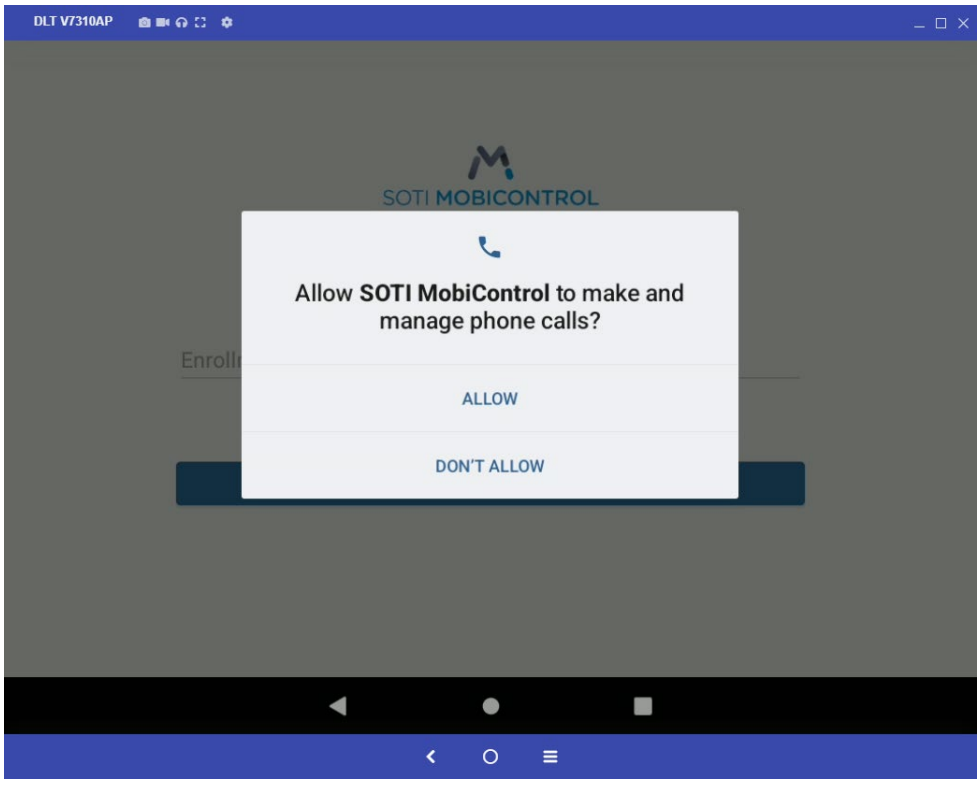


Figure 7-56: SOTI MobiControl Device Agent (GMS) set Permission

4. At request, please select at all questions **ALLOW** to continue.

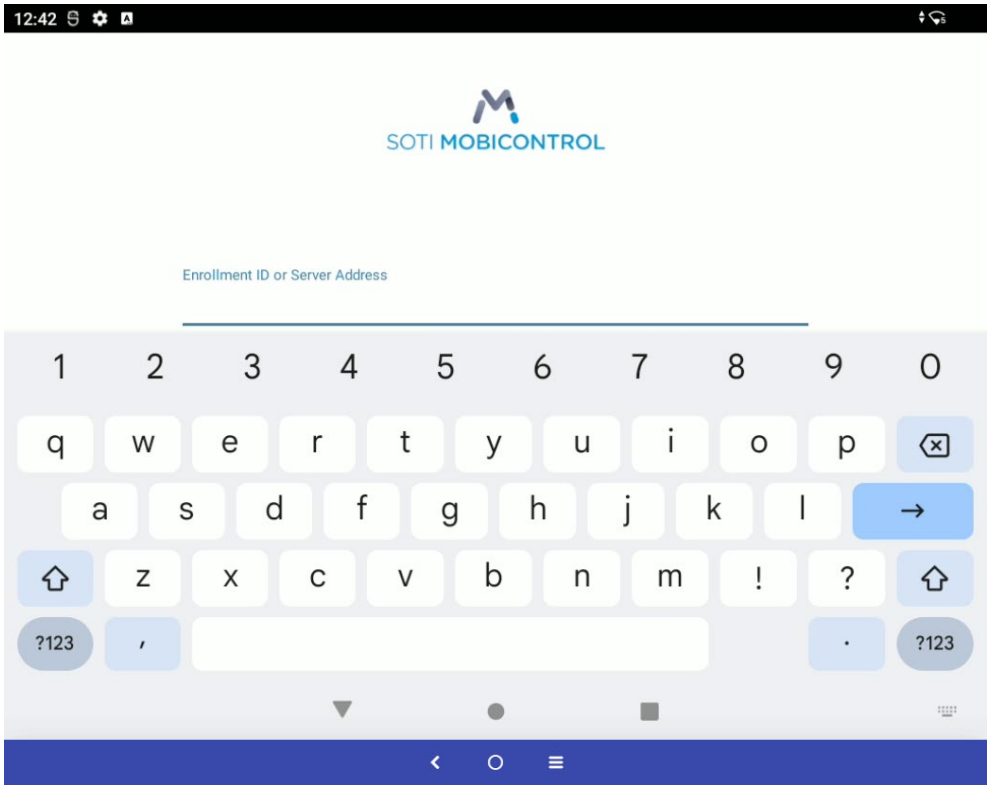


Figure 7-57: SOTI MobiControl Device Agent (GMS) Enrollment

5. Now enter your **Enrollment ID** or **Server Address** to get access to your company SOTI environment.

NOTE

For further instruction how to use SOTI MobiControl features in general please refer to manufacture homepage.

https://docs.soti.net/

7.12.3. Android Enterprise installation

Before you start with the Android Enterprise installation you have to perform a factory reset (see chapter *7.7 Factory Reset)*.

After the factory reset, follow the setup until the Login to your Google Account:

1. Click **Start** Button
2. Setup WIFI with internet connection
3. **Copy apps & data** (You can choose to transfer your apps, photos, contacts, Google Account, and more).

   NOTE: Choose, don't copy!

Sign in with your Google Account:

Enter **%#mobicontrol** and confirm with **NEXT.**

Enter your **company ID** for the placeholder **%**.

SOTI is installed automatically.

Android Enterprise installation can be started now:

1. Enter your **Enrollment ID** and click on **ENROLL.**
2. After the enrollment, the setup of your work profile starts.

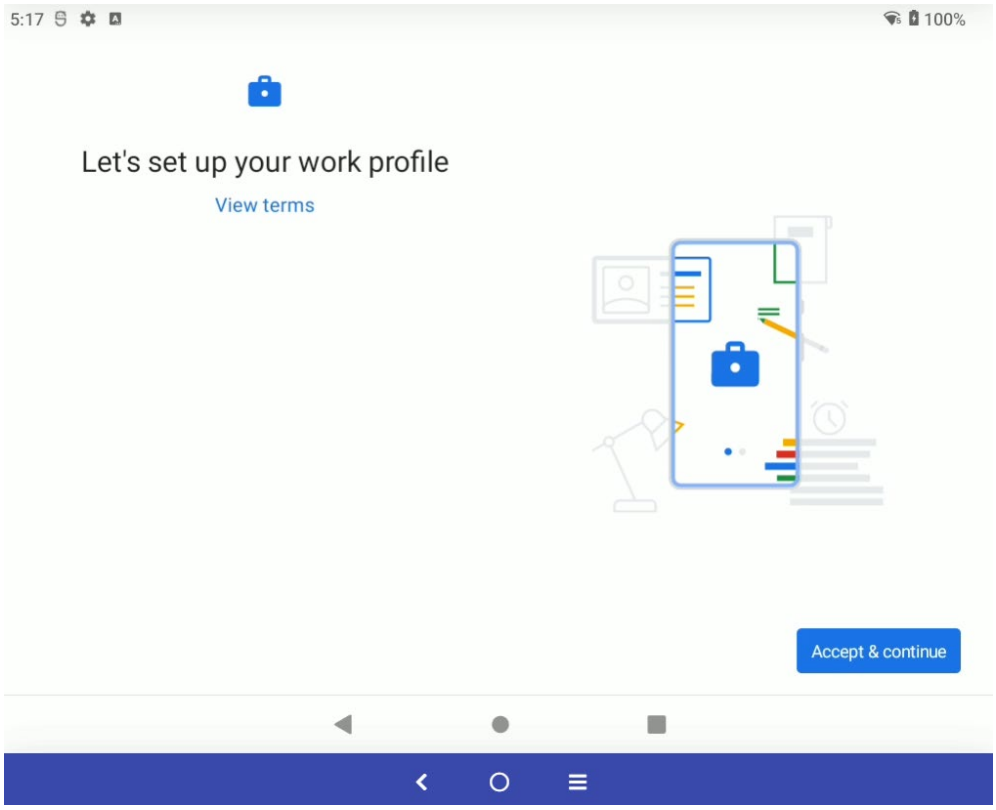


Figure 7-58: SOTI Android Enterprise –Set up your work profile

3. Click on **Accept & continue**.

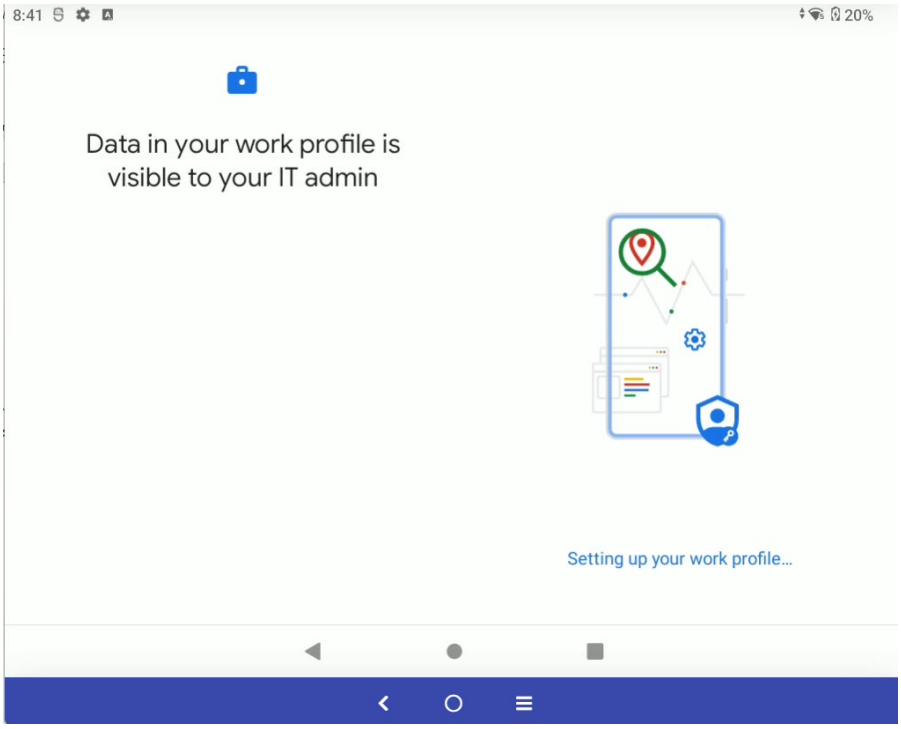


Figure 7-59: SOTI Android Enterprise – Setting up

4. Wait until setup is done.

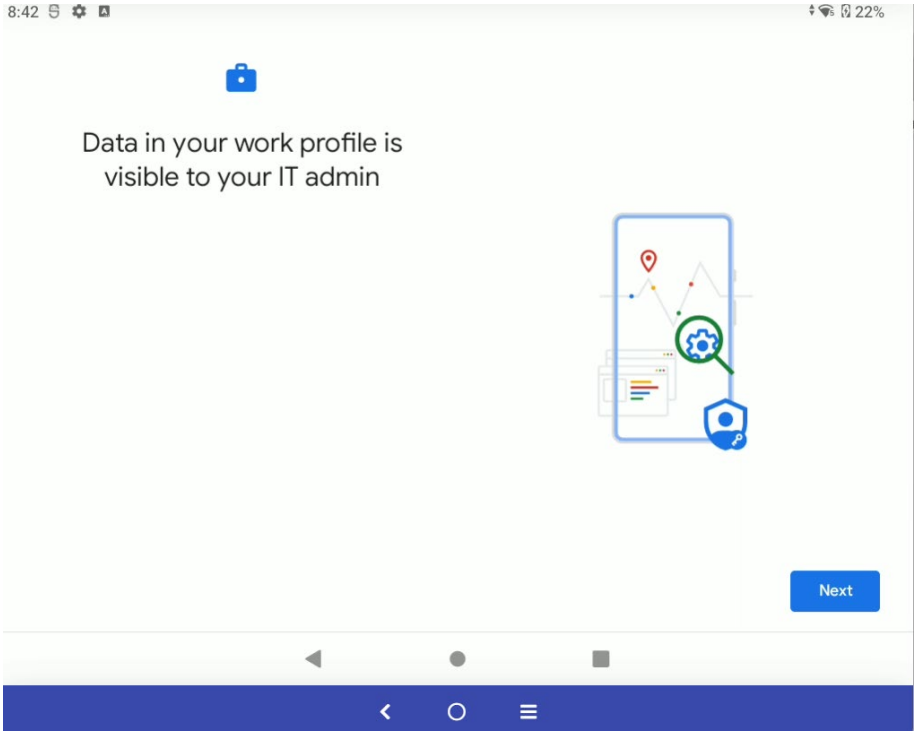


Figure 7-60: SOTI Android Enterprise

5. Click on **Next** and wait until the setup process has been completed.

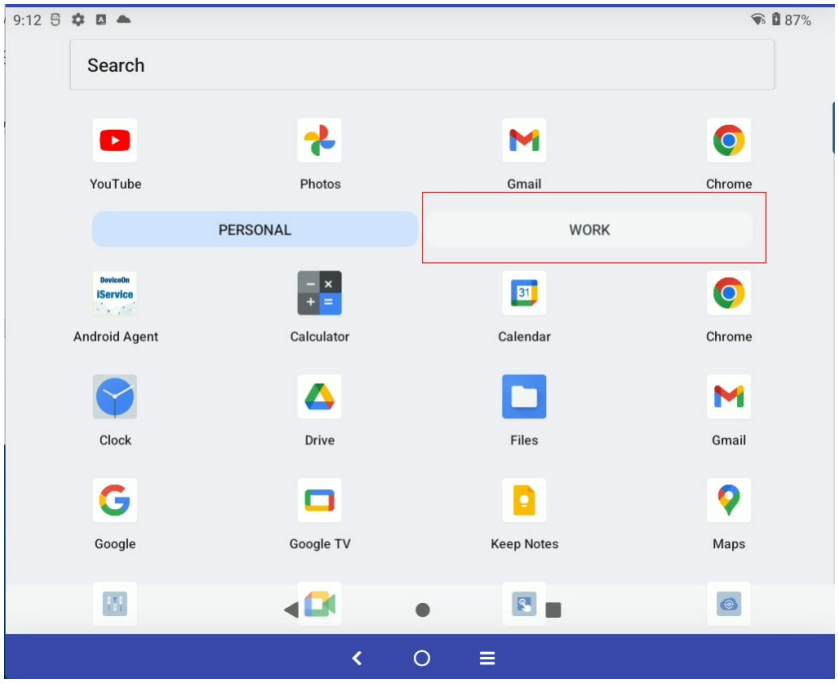


Figure 7-61: SOTI Android Enterprise – Set work profile

6. Go back to the home screen and set your profile as **WORK PROFILE.** Click on **WORK.**

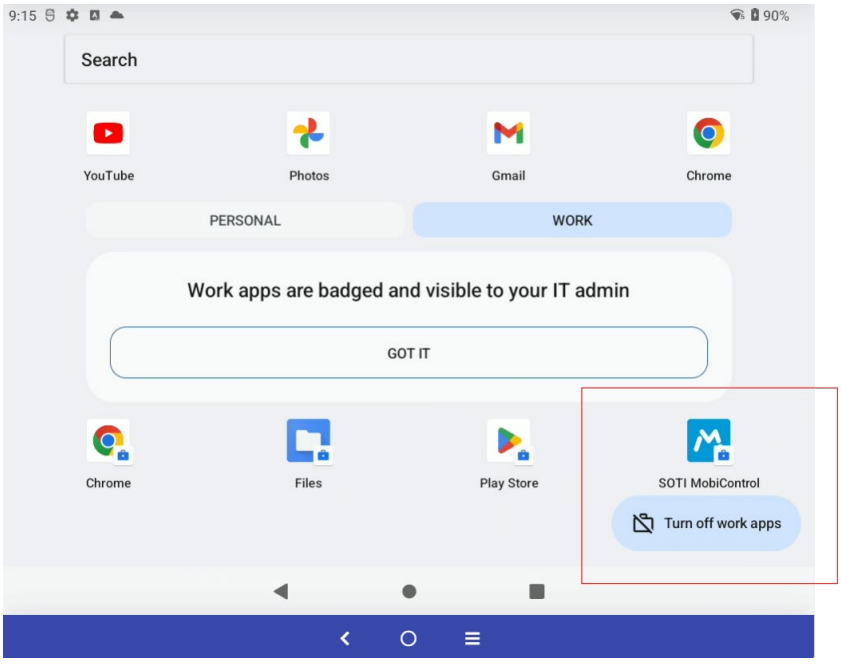


Figure 7-62: SOTI Android Enterprise – SOTI MobiControl

7. Click on **SOTI Mobicontrol** and open your SOTI Android Enterprise section.

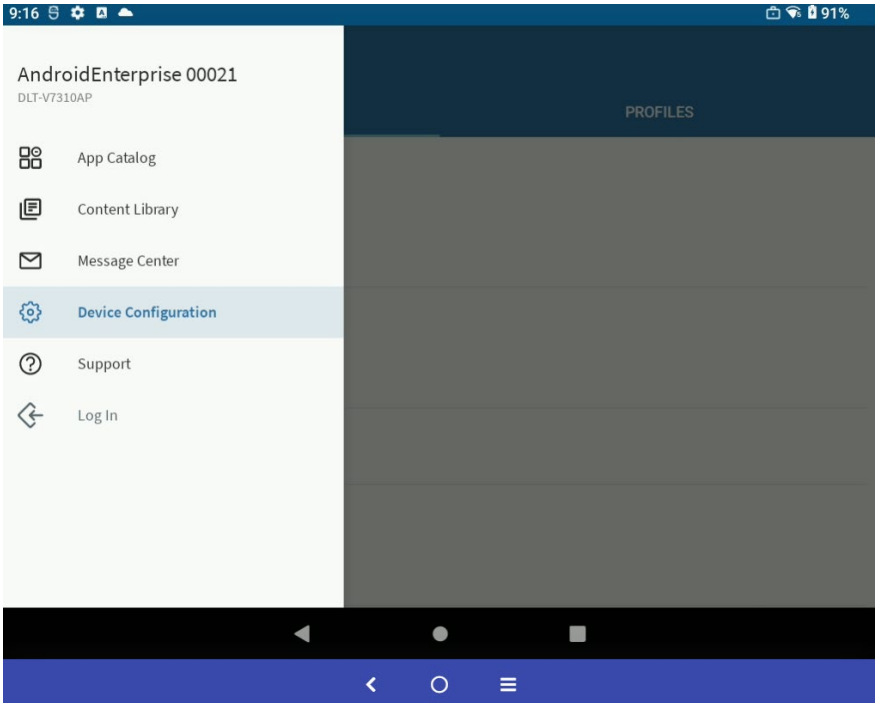


Figure 7-63: SOTI Android Enterprise - Device Configuration

8. Click on **Device Configuration**.

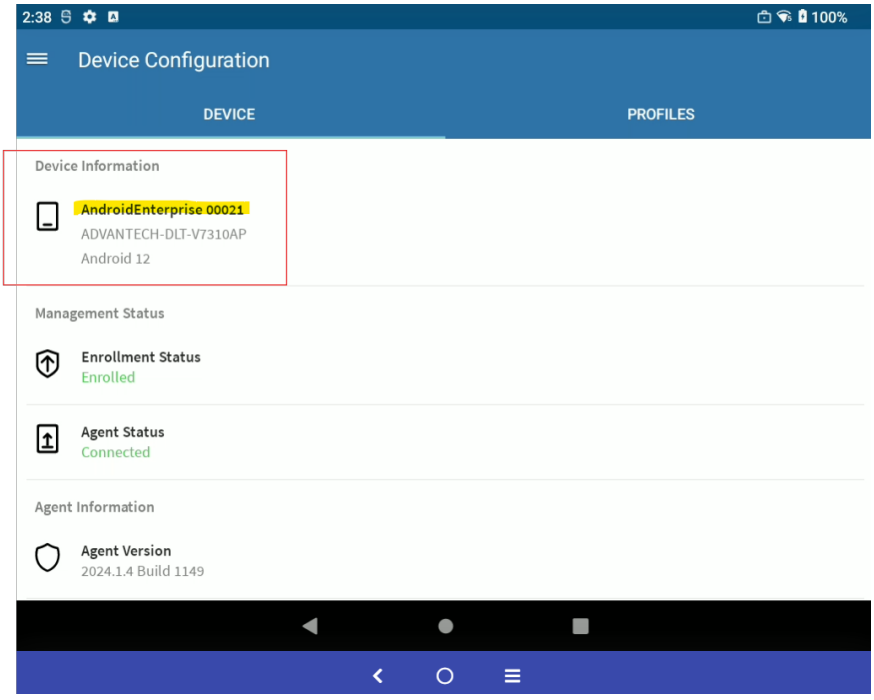


Figure 7-64: SOTI Android Enterprise – Device Information

NOTE

The displayed Device Information is needed for reactivating MDevice and MTouch.

When setting the work profile, applications that are included in the personal profile, such as MDevice and MTouch, are deactivated by default.

To continue using it with a work profile, you must reactivate it with the SOTI MobiControl console via your PC.

9. Go to the link and access to the SOTI Mobicontrol console: https://eu.identity.soti.net/

10. Settings in your device can be managed here.

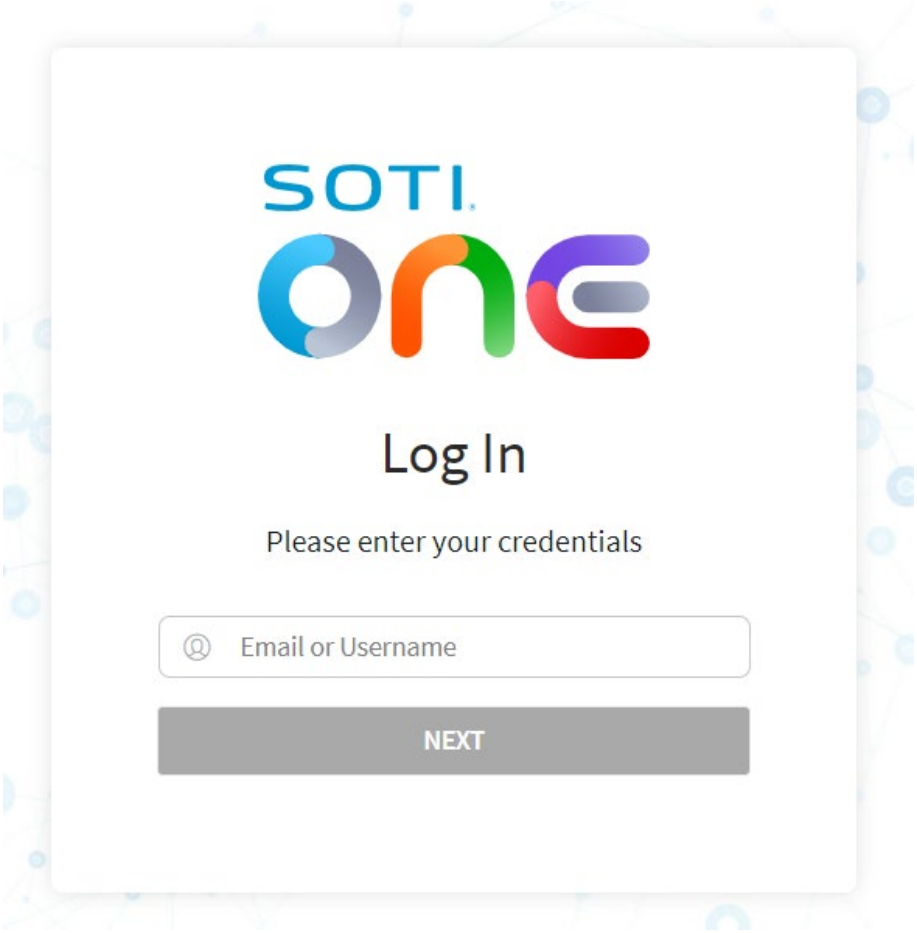


Figure 7-65: SOTI MobiControl console – Log In

11. Login with your credentials and click on **NEXT.**

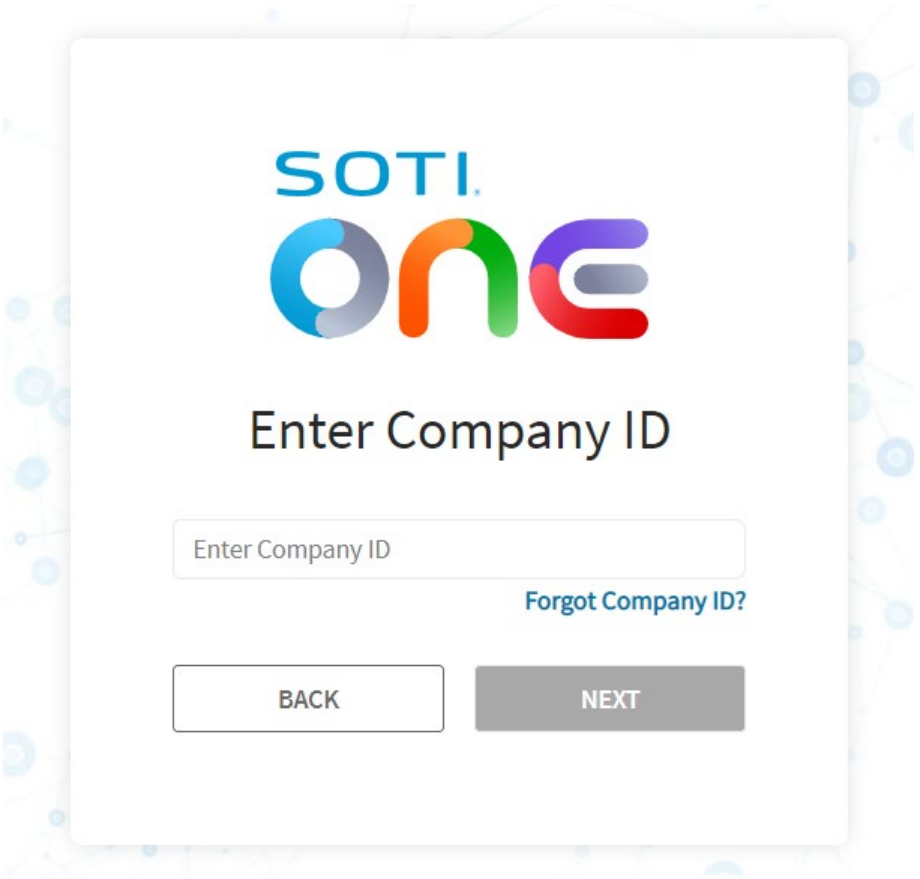


Figure 7-66: SOTI MobiControl console – Enter Company ID

12. **Enter Company ID** and click on **NEXT**.

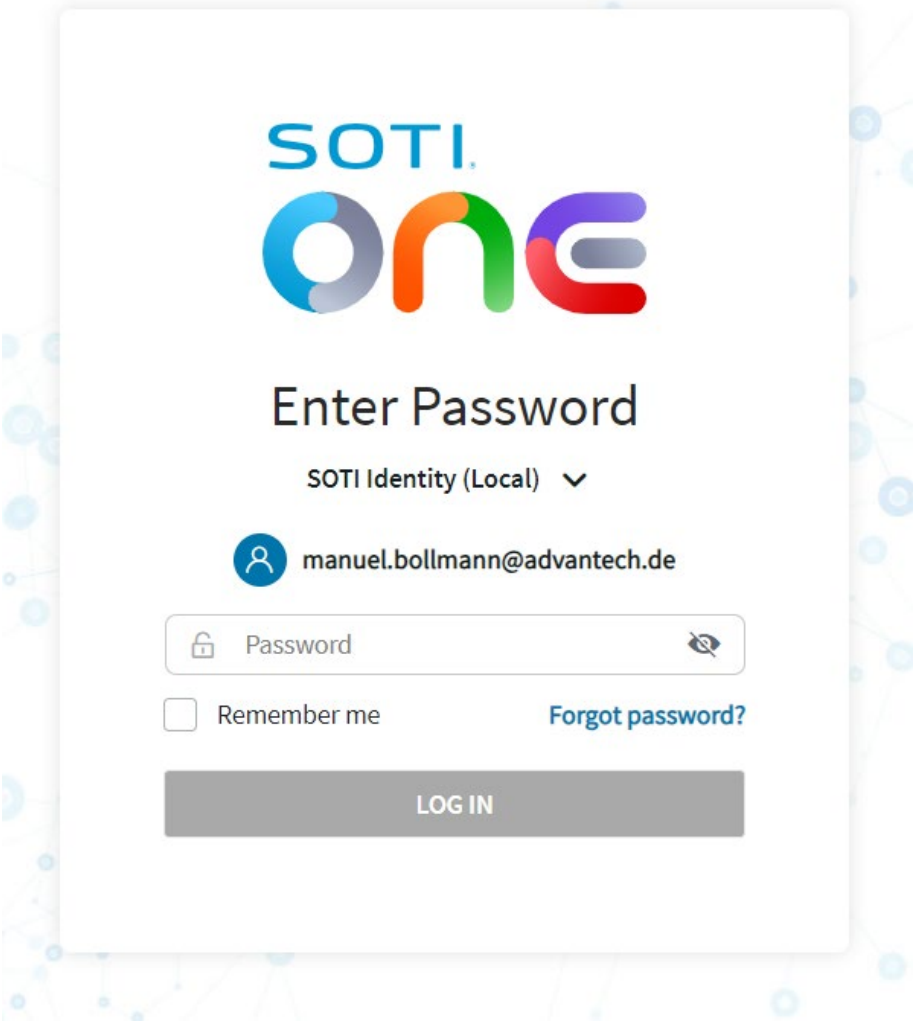


Figure 7-67: SOTI MobiControl console – Enter Password

13. **Enter Password** and click on **LOG IN**.

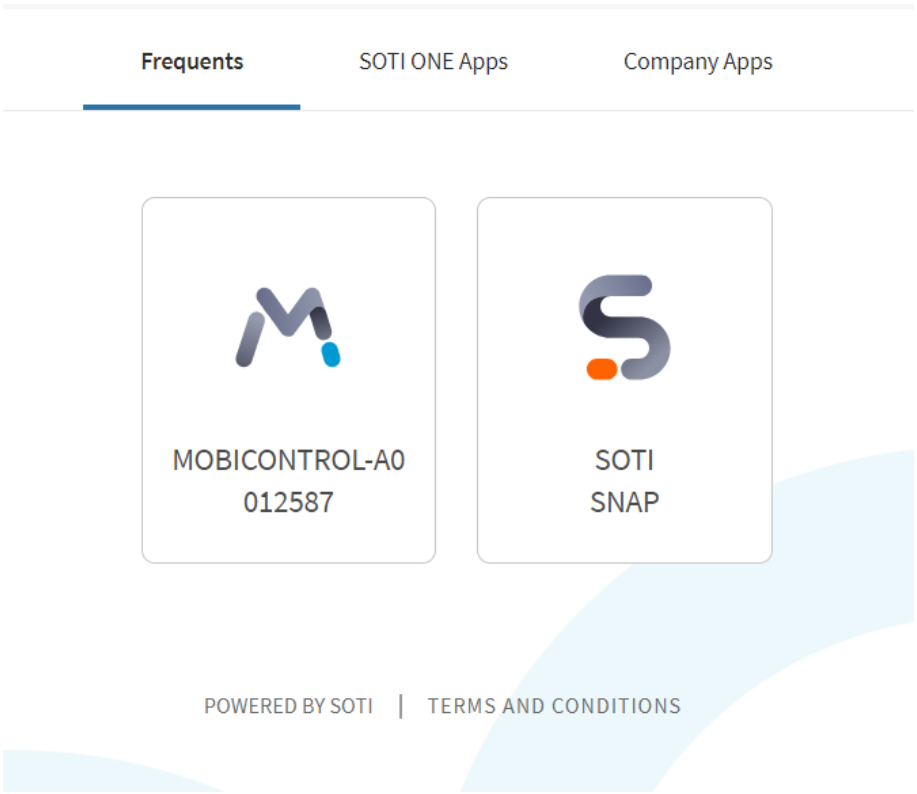


Figure 7-68: SOTI MobiControl console – Select MOBICONTROL

14. Click on the icon of **MOBICONTROL-xx**
    NOTE: The number behind MOBICONTROL can be different.

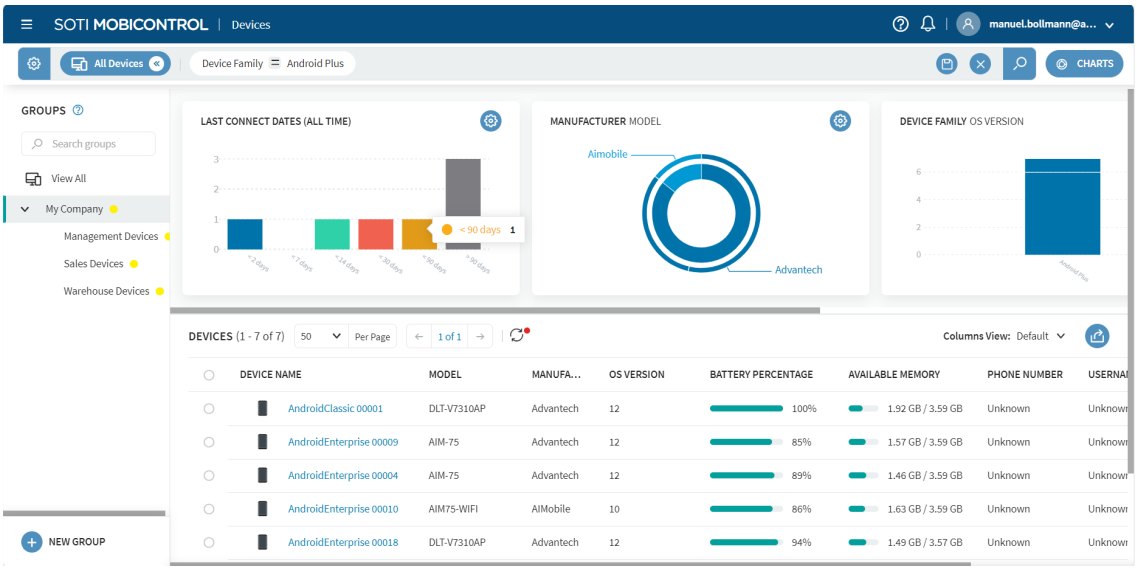


Figure 7-69: SOTI MobiControl console

15. Select **My Company**

16. Check whether your device is entered in the **DEVICE NAME** column.

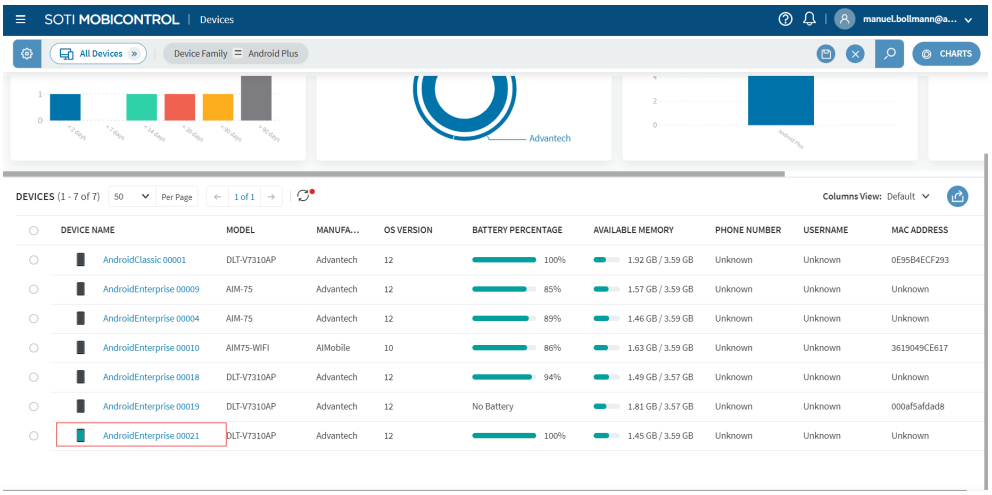


Figure 7-70: SOTI MobiControl console – All devices

17. Select **Android Enterprise 00021** related to the model DLT-V7310AP.The number of Android Enterprise must match the number of Android Enterprise section in your DLT. Check the number as described in Step 6 and 7 (Figure 7-64: SOTI Android Enterprise – Device Information).

7.12.3.1. Add applications to work profile

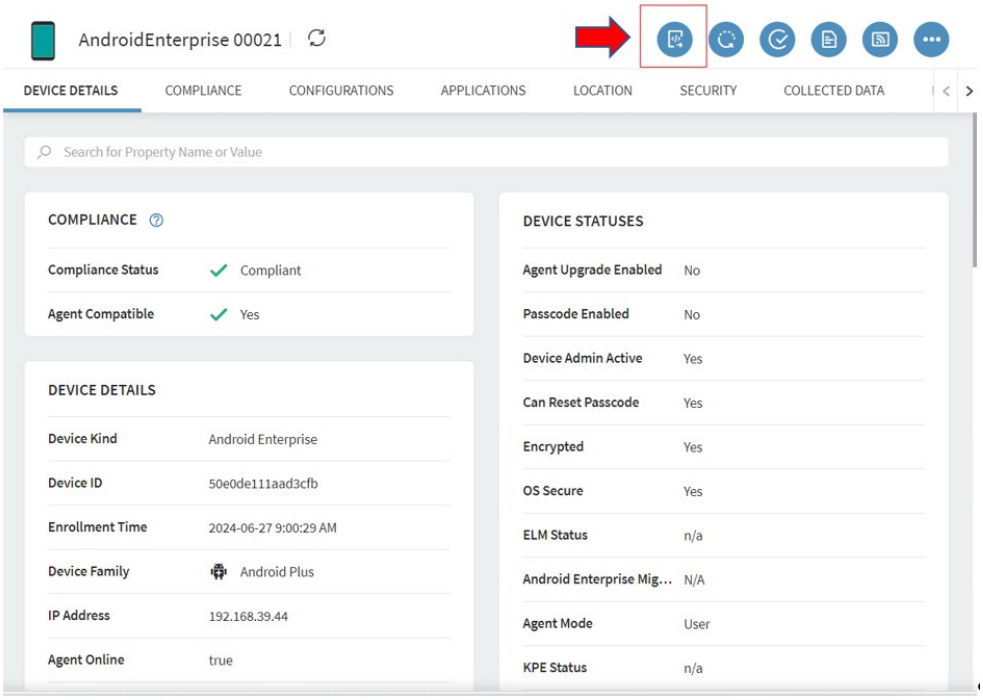


Figure 7-71: SOTI MobiControl console – Device details

1. Click on the first icon **SEND SCRIPT** on the right side of the page.

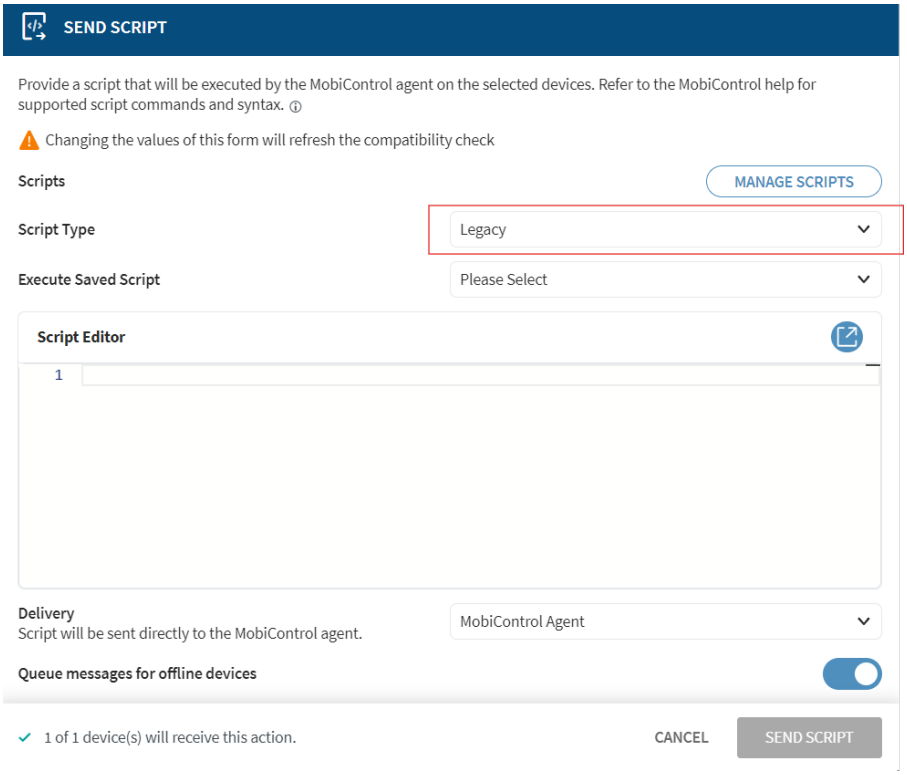


Figure 7-72: SOTI MobiControl console – Manage scripts

2. Select **Legacy** in Script Type.

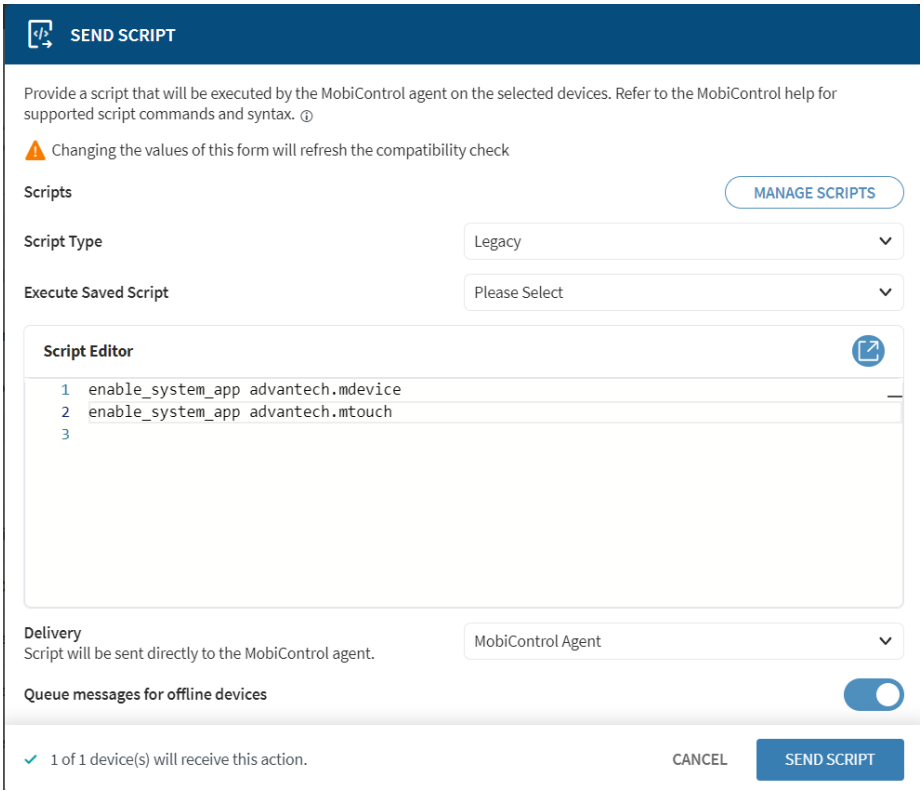


Figure 7-73: SOTI MobiControl console – Script Editor

3. Enter in the **Script Editor**:
   enable_system_app advantech.mdevice
   enable_system_app advantech.mtouch

4. Finish all steps to re-enable MDevice and MTouch and sending the script.

5. Click on **SEND SCRIPT**.

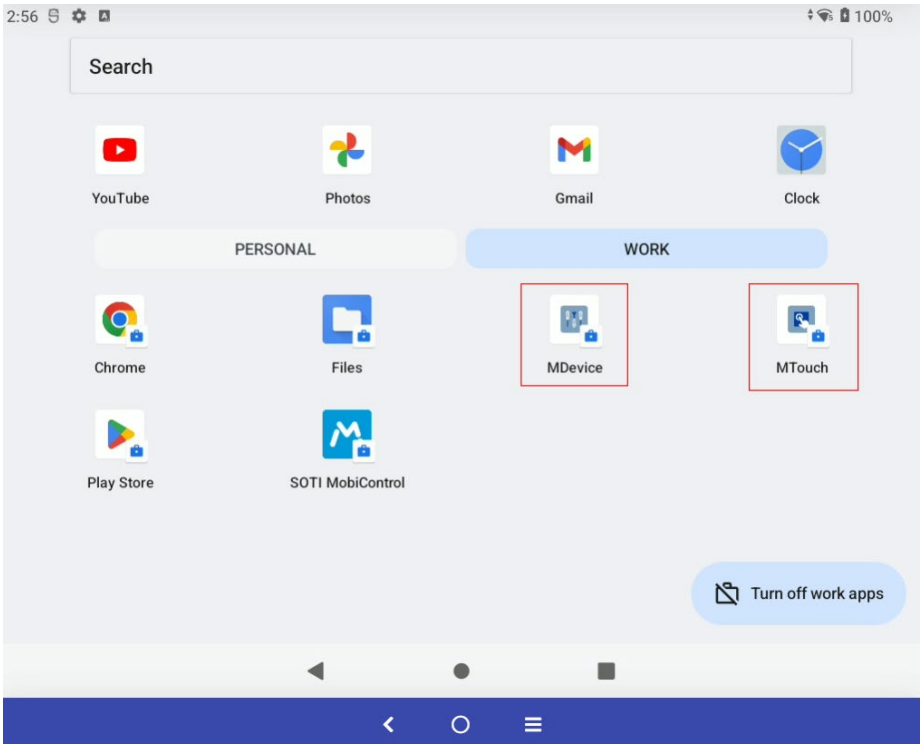


Figure 7-74: SOTI Android Enterprise – Home screen

6. MDevice and MTouch are now displayed on the home screen in the work profile.

7.13. DeviceOn/iService support

Advantech's DeviceOn/iService is a next-generation unified device management solution based on the WISE-DeviceOn platform. Designed to enable centralized monitoring and remote management, DeviceOn/iService supports Advantech devices equipped with Windows, Linux or Android operating systems. The software also supports the management of applications and integrated peripherals, such as a barcode scanner, card reader, camera and printer. Users can remotely access and control connected devices, take screenshots, rollout OTA updates and use remote desktop capabilities for troubleshooting from any location at any time.

The main features of Advantech's DeviceOn/iService reads:

- Device runtime status overview dashboard
- Real-time alarm and notifications features
- Device grouping and management
- Remote real-time device runtime status monitoring
- Over-the-air (OTA) software updates (app and OS)
- Remote desktop features
- Kiosk mode settings

Moreover, DeviceOn/iService supports batch operations to facilitate the management of multiple devices simultaneously for easy and convenient device configuration and deployment.

Installation requirements

The following Android OS version (or newer) is required to support Advantech's DeviceOn/iService at Android 12 for Advantech DLT-V73A:

Android12 Image version **v3.01.x**

More information about Advantech's DeviceOn/iService can be reviewed at official Homepage:

http://www.deviceon-iservice.com/

7.14. Resistive Touch Controller (PenMount)

Resistive touch controller (PenMount) will be supported by Android image release v3.01 and higher.

The calibration process is part of MDevice utility (Display Settings).

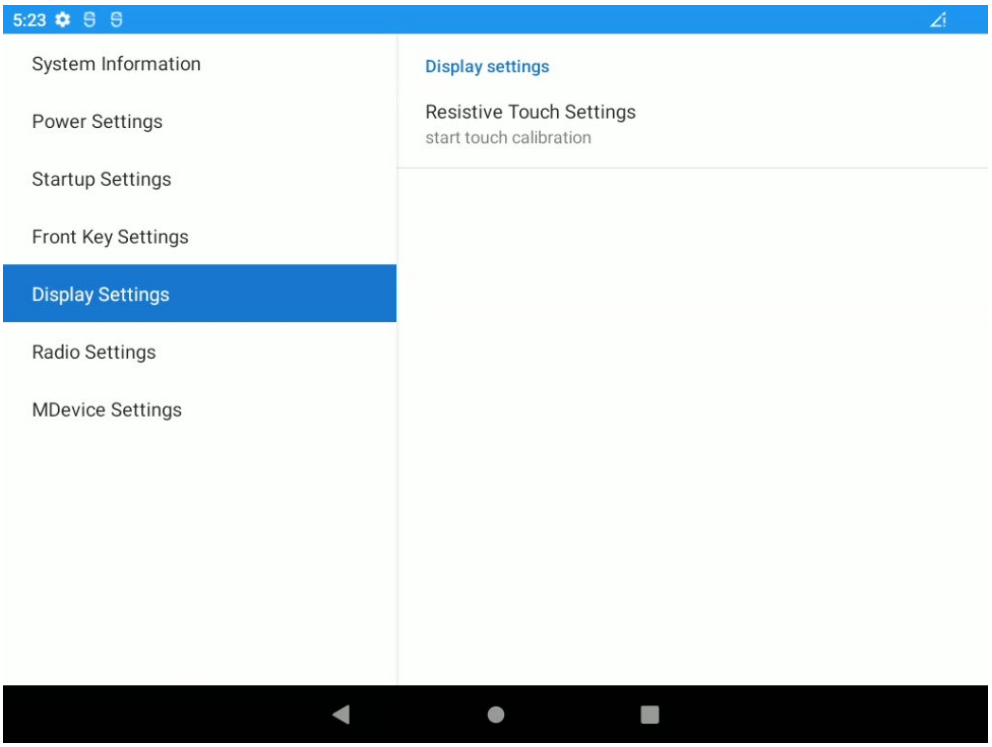


Figure 7-75: MDevice – Resistive touch calibration

NOTE

The calibration process inside MDevice utility is only available at resistive touch controller (PenMount) and not for PCAP touch controller.

7.14.1. Touchscreen Calibration

After starting the calibration process with **start touch calibration,** the following dialog will be shown:

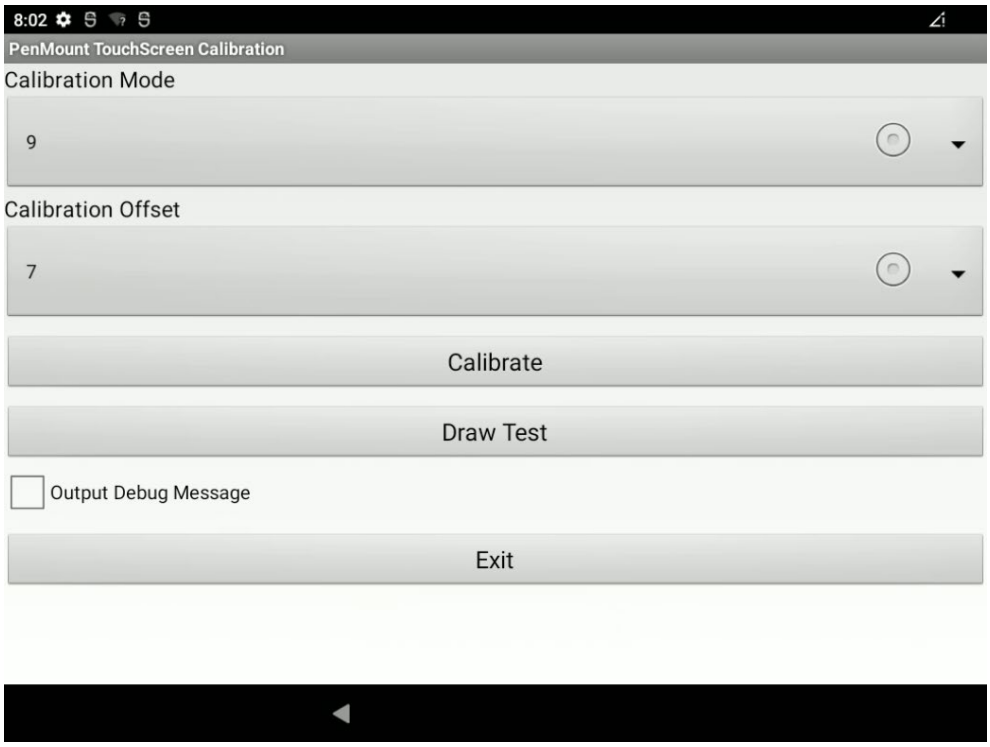


Figure 7-76: MDevice – Resistive touch calibration settings (PenMount)

1. Press button **Calibrate**.

Figure 7-77: MDevice – Resistive touch calibration (PenMount)

2. Touch the defined nine points at screen in predefined order.

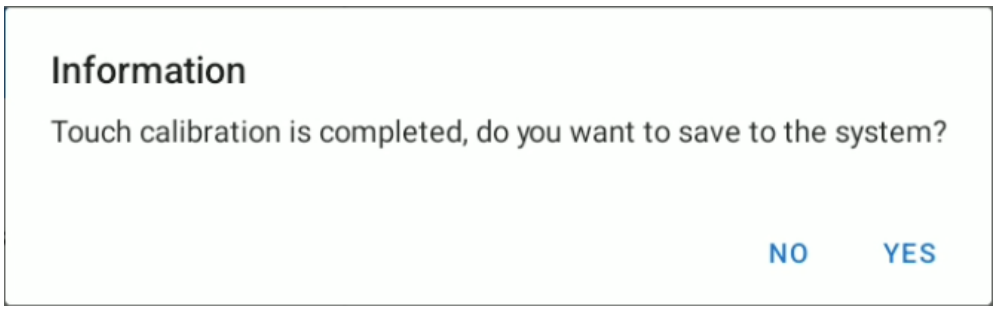


Figure 7-78: MDevice – Resistive touch calibration (PenMount)

3. At request press button **YES** to save the new calibration data to the system.

8. OTA Update

8.1. Functional description

Starting with Android 12 OS support at DLT-V73A there is currently one type of OTA update possible to use:

"Full" → Major build of a standard Android 12 image release for DLT-V73A

Update can be applied using integrated standard utilities and GUI extensions as described in detail as part of this chapter.

NOTE

OTA updates are designed to upgrade the underlying operating system including the read-only apps installed on the system partition; these updates do not affect user and app data installed by the user.

OTA updates can be applied at Android AOSP and GMS images.

When using MDM SOTI® SW please note, that OTA feature is only available using the following two enrollment methods:

- *Android Classic Device (AOSP)*
- *Company Owned Device (GMS)*

8.2. Image Versioning / Release policy

With each of new image release, a unique version number can be read out using the **Settings -> About tablet** feature:

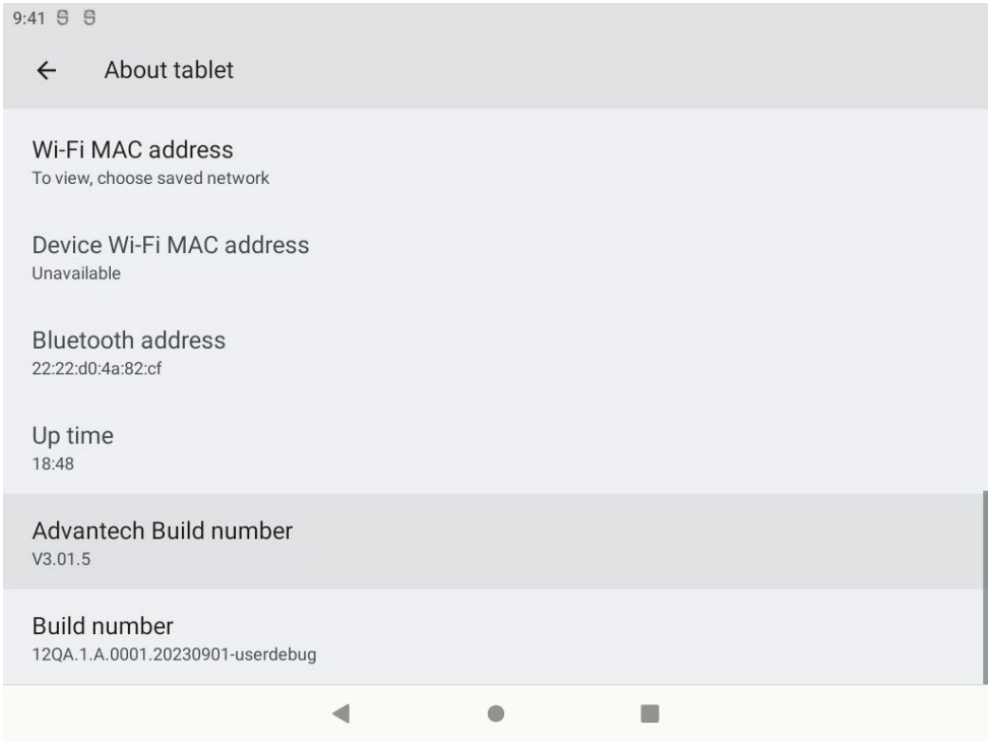


Figure 8-1: Settings - About tablet

Major build versions are always as **V3.xx.x** named.

8.3. Version update / downgrade information

To keep better control of image update / downgrade possibilities the following simple rules exist in general:

At **full** image updates, there is no limitation from down- or upgrading to earlier / newer available images using OTA. During this process the full image content **(keeping user space untouched with installed programs and settings)** the system partition is being completely overwritten with new content.

NOTE

In dependency of used space and number of changes, each major build release ADV will not state the total amount of incremental updates for future release.

This depends on changes being performed and individual cases between major build image releases.

NOTE

It's not possible switching from Android AOSP image version to GMS version image of Android and vice versa. If your device has Android AOSP image version, every update will be related to AOSP version.

If your device has Android GMS image version, every update will be related to GMS version.

If you require a GMS image, and your devices contains the AOSP image, contact your distributor, sales representative or an Advantech Service Center for technical support.

8.4. Different ways to perform OTA updates

In general, there are three different ways available how to apply OTA updates (full) at Android12 for DLT-V73A:

1. Apps Screen → OTA update
2. Using an ADB over USB (Type-C) connection
3. Using an MDM (Mobile Device Management) SW like (SOTI®)

8.4.1. Way1: Apps Screen → OTA update

An application has been prepared to allow updating the Android12 system by selecting a file during the process.

The OTA update application can be found at Apps Screen.

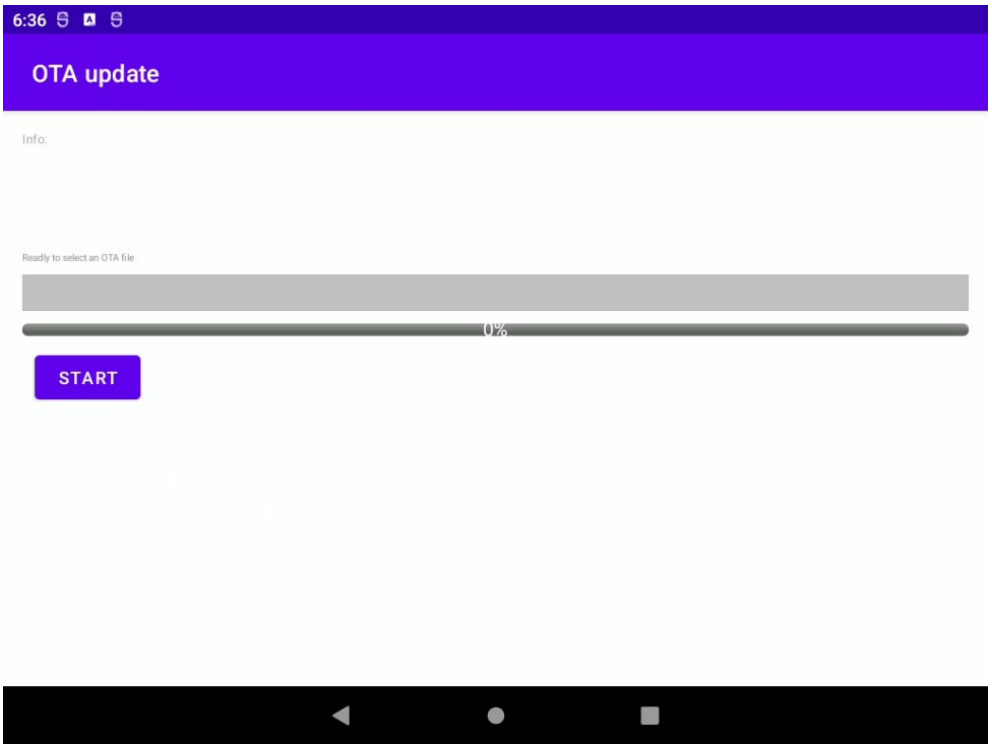


Figure 8-2: Apps Screen → OTA update

1. Click on button **Start** to select an OTA file.
2. In case, **Recent** file selection is displayed click on icon ☰ once.

3. Choose an **OTA file (.zip)** from local storage or an attached USB-Stick.

The OTA update will be performed, status can be checked via progress bar.

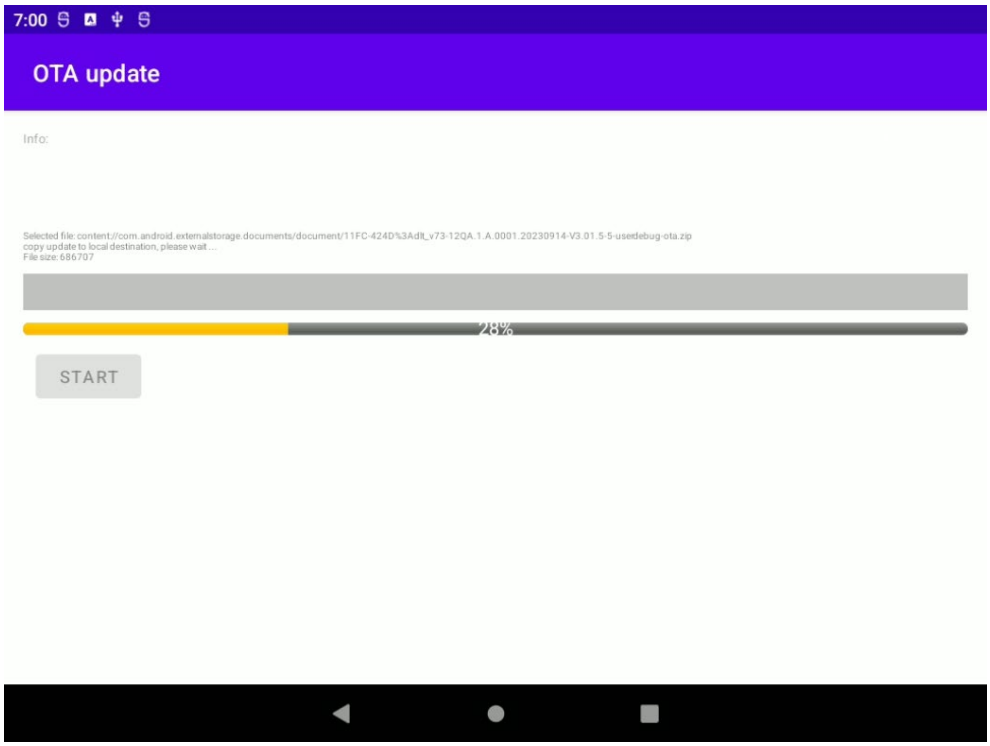


Figure 8-3: Apps Screen → OTA update → OTA update in progress

NOTE *In case all requirements are correct, the OTA will be performed automatically.*

After the update has been performed successfully the following dialog will be displayed.

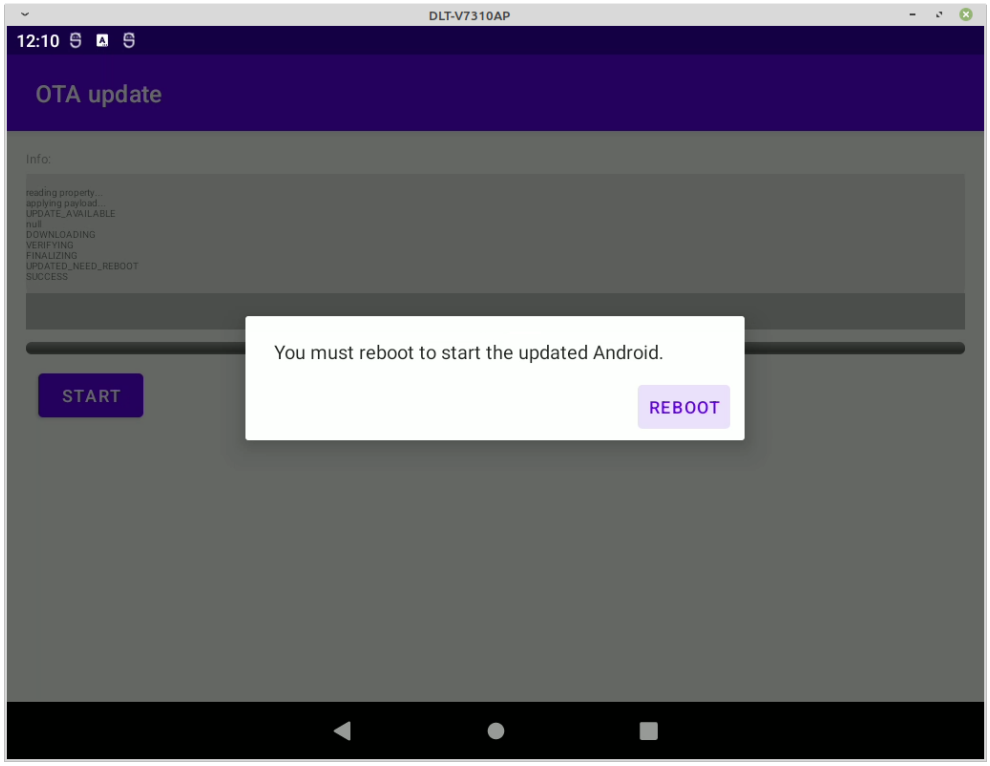


Figure 8-4: Apps Screen → OTA update → reboot required

4. To finish process, click at **REBOOT** button to initiate required reboot.

NOTE

*As described **user partition is not changed or deleted** during this process allows direct IP communication with terminal again after finished process using ADB or an MDM SW.*

8.4.2. Way2: ADB over USB (Type-C) Connection

An integrated INTENT can be called from ADB Shell to initiate an OTA update command.

This can be done by using the USB OTG port at terminal (under the blue antenna cap) to transfer an image from a connected laptop using an USB- Type-C cable.

The following example will demonstrate OTA update using ADB Shell connection. This process requires to be at the terminal next to it to allow a direct communication between the DLT-V73A terminal and a standard laptop to transfer the OTA update file and to initiate the OS installation.

For general USB ADB (Type-C) connection and setup please see section *7.9 ADB over USB (Type-C)* first.

After connection established start copying the file to terminal using adb push command:

`adb push ota_update.zip /sdcard/` (filename example)

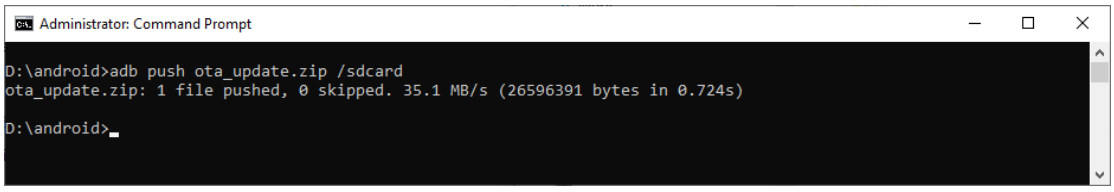


Figure 8-5: Apps Screen → OTA update → reboot required

Perform the OTA update using the following adb shell command:

`adb shell am start -n com.advantech.otaupdate/.MainActivity --es "ota_update" "/sdcard/ota_update.zip"`

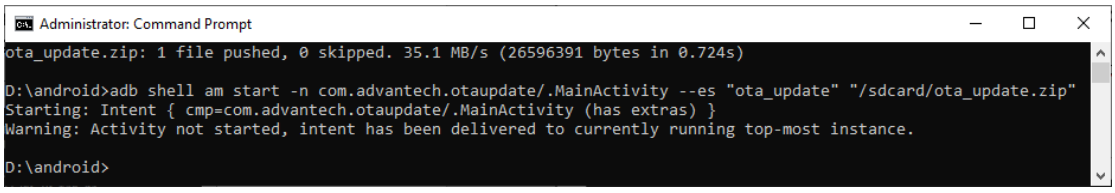


Figure 8-6: Apps Screen → OTA update → reboot required

The installation progress can be watched at DLT-V73A terminal in between.

The terminal will do an automatic reboot after the update has been completed.

8.4.3. Way 3: SOTI® (Send Intent)

Please go to SOTI console https://eu.identity.soti.net/

Search for your connected DLT-V73A and click on that.

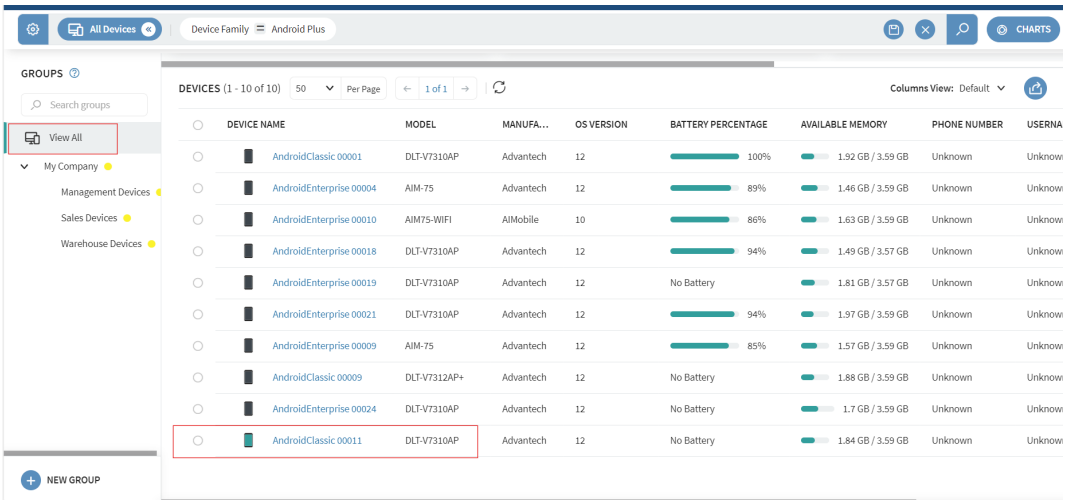


Figure 8-7: SOTI Console Screen → OTA update

Click on the icon **SEND SCRIPT**.

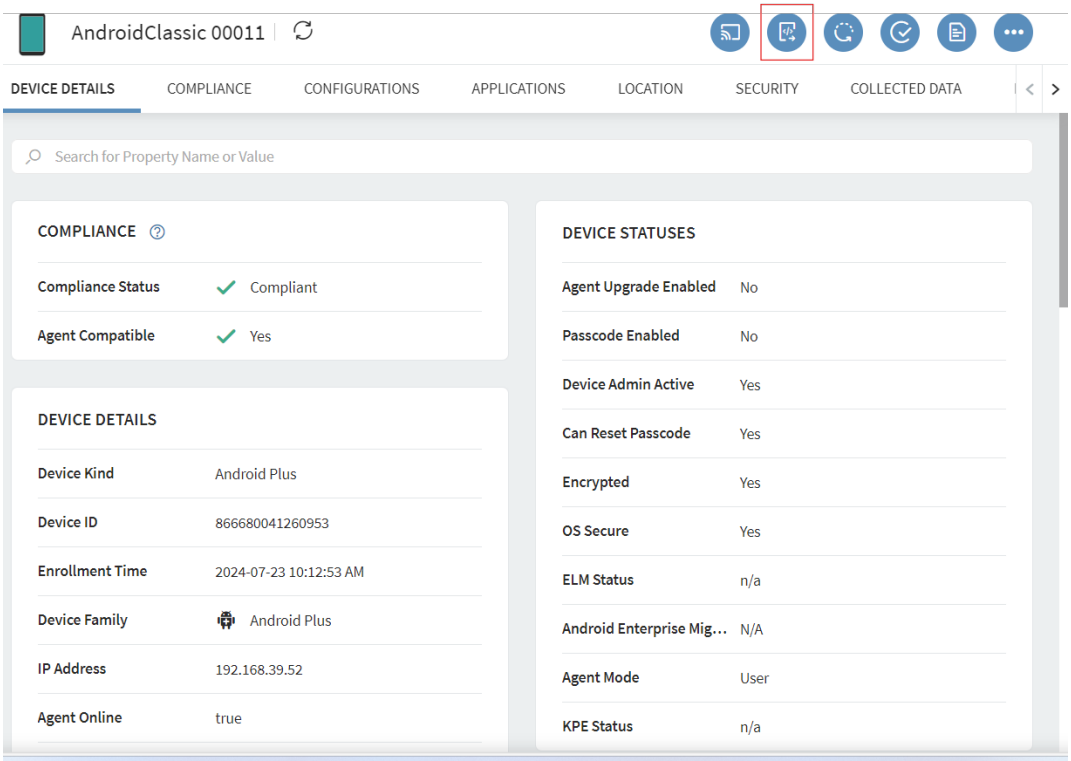


Figure 8-8: SOTI Console Screen → OTA update

SOTI® MDM (Mobile Device Management) offers functionality to send a script to the terminal including Send Intent command to perform an example OTA update at DLT-V73A.

Please note that the following description can be changed by SW vendor in future and might be slightly different in usage as described.

1. Create a new **Legacy** script:

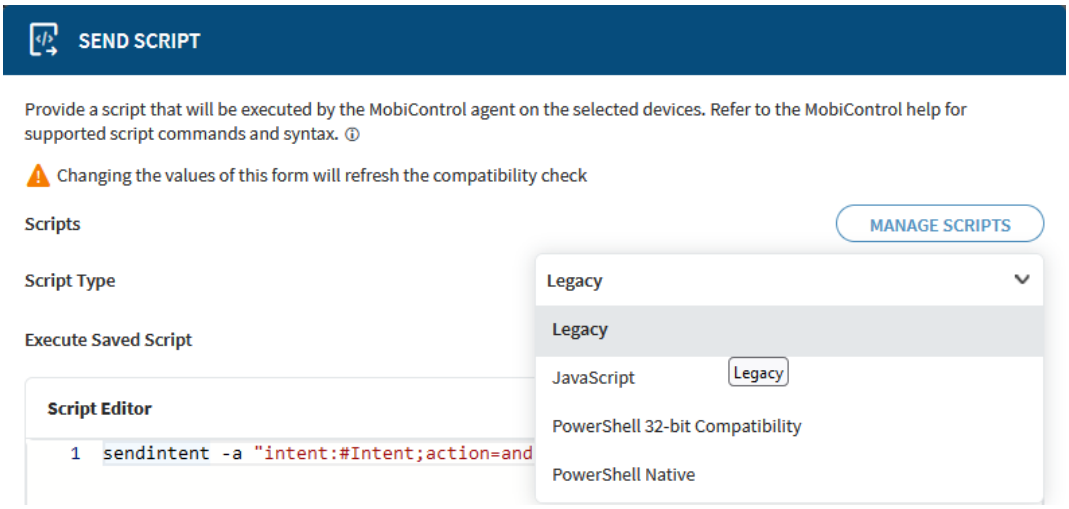


Figure 8-9: SOTI console Screen → OTA update

2. In the Script Editor enter the following text:

```
sendintent -a
"intent:#Intent;action=android.intent.action.MAIN;component=com.
advantech.otaupdate/.MainActivity;S.ota_update=/sdcard/ota.zip;e
nd"
```

The example path and file name read **/sdcard/ota.zip** and must match with the name saved in local store, in your DLT-V73A.

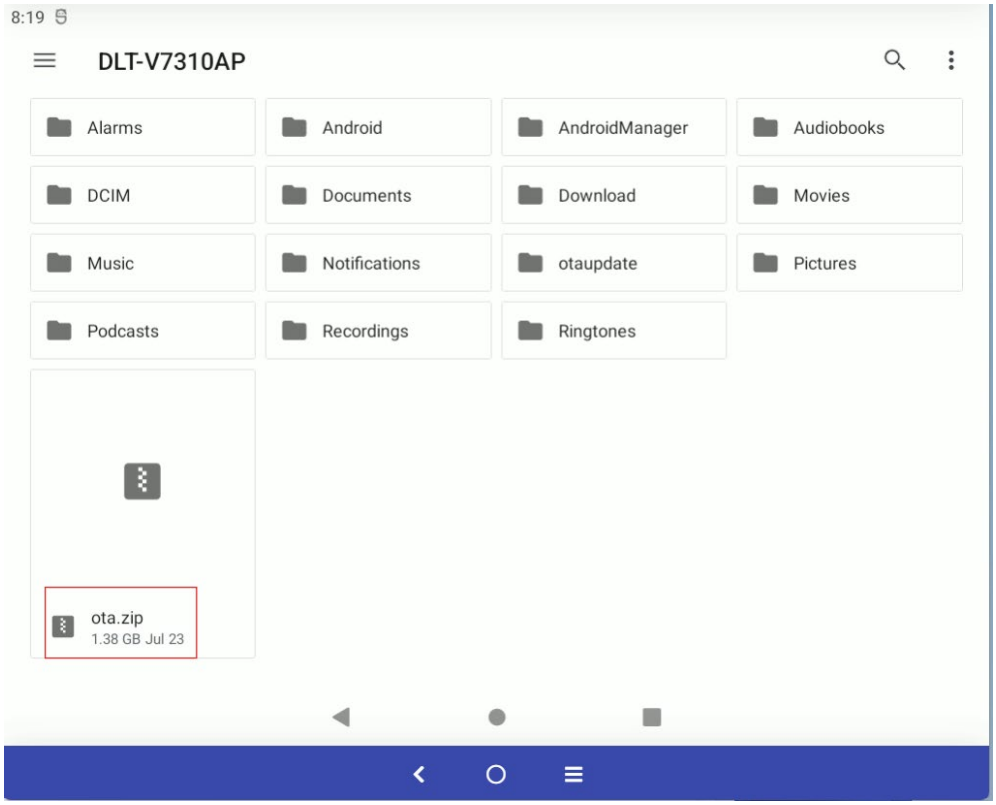


Figure 8-10: Apps Screen → Section FILES > DLT-V73AP → OTA update

Please be careful to use capital letters. The file name has to match perfectly to the file name used in locale store.

3. Afterwards, the dialog should look like this:

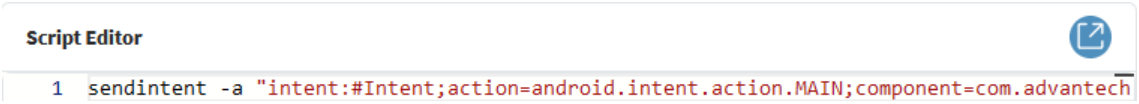


Figure 8-11: Console SOTI Screen → OTA update

4. You can use the **Manage Script** feature in case you want to save the script to use later again.

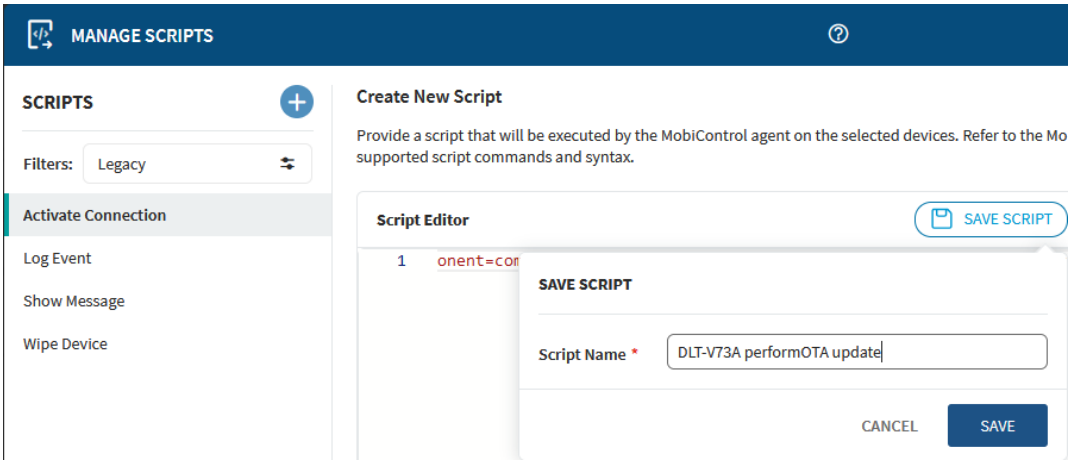


Figure 8-12: SOTI console Screen → OTA update → reboot required

5. The example reads **DLT-V73A performOTA update**.
   Otherwise you can enter the SOTI intent manually, in the script Editor.

6. Click the **SAVE** button to complete the process.

7. Next copy the OTA update file to the client you want to perform the update using **SOTI® Packages** functionality.

NOTE

If you are not familiar with SOTI® Packages please check the manual of SOTI manufacturer.

Afterwards the newly created script file can be sent to the SOTI® agent installed at the DLT-V73A.

8. Select the newly created script.

9. Execute at selected terminal by clicking **SEND SCRIPT** button. If everything goes properly a pop-up message of SUCCESS will show.

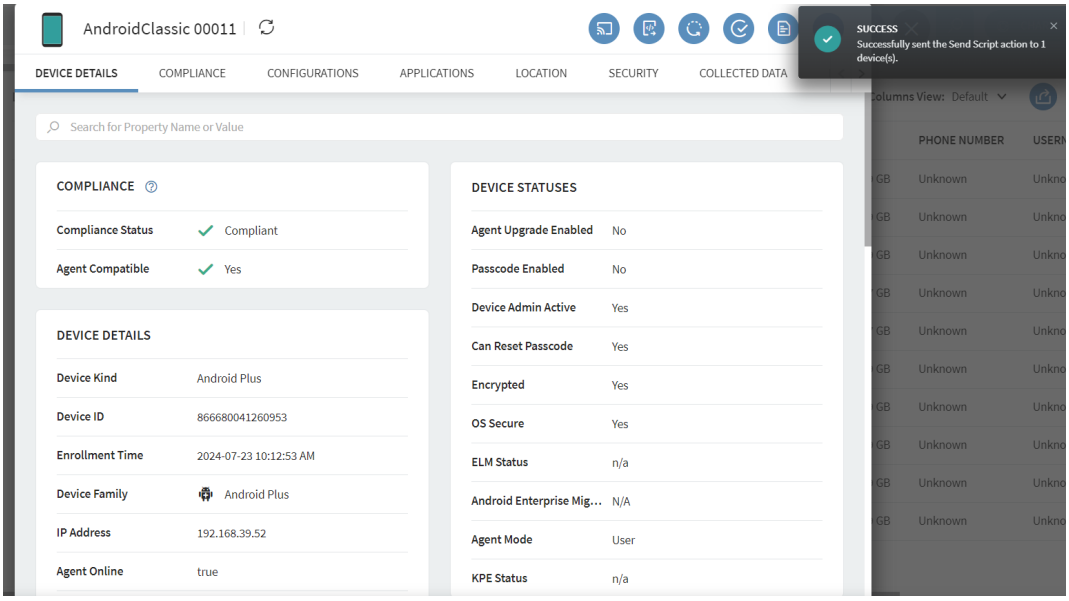


Figure 8-13: SOTI console Screen → OTA update → reboot required

The terminal will reboot automatically after the OTA update has been completed. The newly installed image will load afterwards for the first time.

8.5. OTA problem solving

8.5.1. OTA update not compatible

If the selected file is not compatible (for example the release date is lower than the current installed one detected), the following dialog will be displayed:

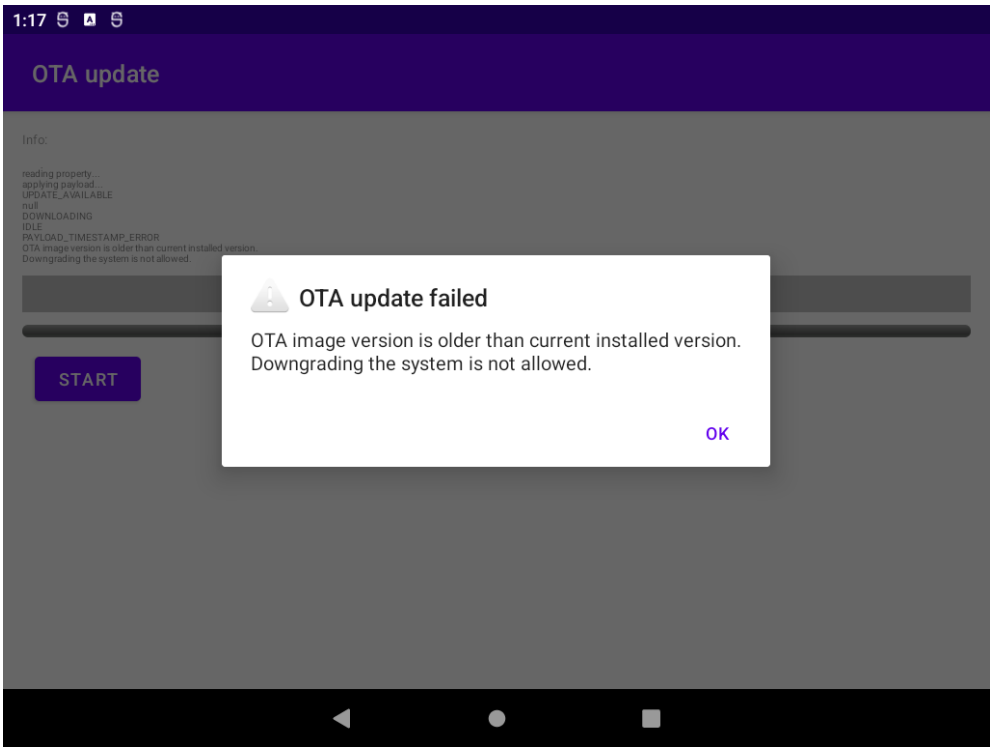


Figure 8-14: Apps Screen → OTA update failed

In this case, please confirm message with **OK** and select a correct image file to update to a newer version then already installed.

8.5.2. OTA update failed

In case of an unexpected power loss during the update process, the DLT-V73A terminal can eventually lead into a non-booting situation.

In this situation standard way of using Android OS features to restore the image cannot be used anymore.

Advantech offers a special way to use FASTBOOT connection from an external PC or laptop using USB type-C (OTG) port to restore the Android OS image again.

This process does not require an RMA and can be handled directly at side following a dedicated SOP (Standard operating procedure) provided by Advantech.

For more information and to receive the SOP please contact your Advantech Service Center for further support.

NOTE

It's not possible switching from Android AOSP image version to GMS version image of Android and vice versa.

*This is also valid in case the **FASTBOOT** image will be applied following the SOP!*

9. GOTA Update

9.1. Functional description

GOTA (Google OTA) requirements:

- DLT-V73A with installed **GMS image** (Android **AOSP** image **is not supported!**)
- The DLT-V73A needs access to internet-based Google OTA update server

NOTE

OTA updates are designed to upgrade the underlying operating system including the read-only apps installed on the system partition; these updates do not affect user and app data installed by the user.

Starting with Android 12 OS support at DLT-V73A there is currently one type of GOTA update possible to use:

"Full" → Major build of a standard Android 12 image release for DLT-V73A

9.2. GOTA update is available

There are two ways to apply GOTA updates at Android12 for DLT-V73A.

9.2.1. Apply GOTA Update via update icon

On the left of the screen a symbol of update availability will be showed.

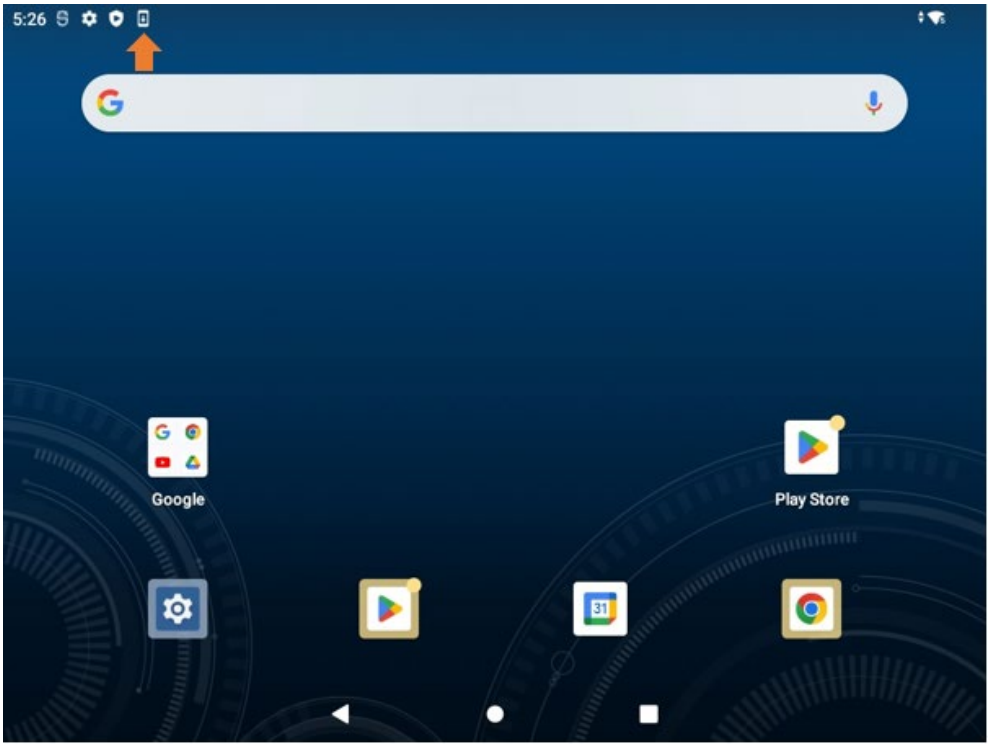


Figure 9-1: Nofitication of update availability

1. Perform a swipe down to open notification screen.

2. Scroll down the screen and see the notification in the window: **New system software available**.

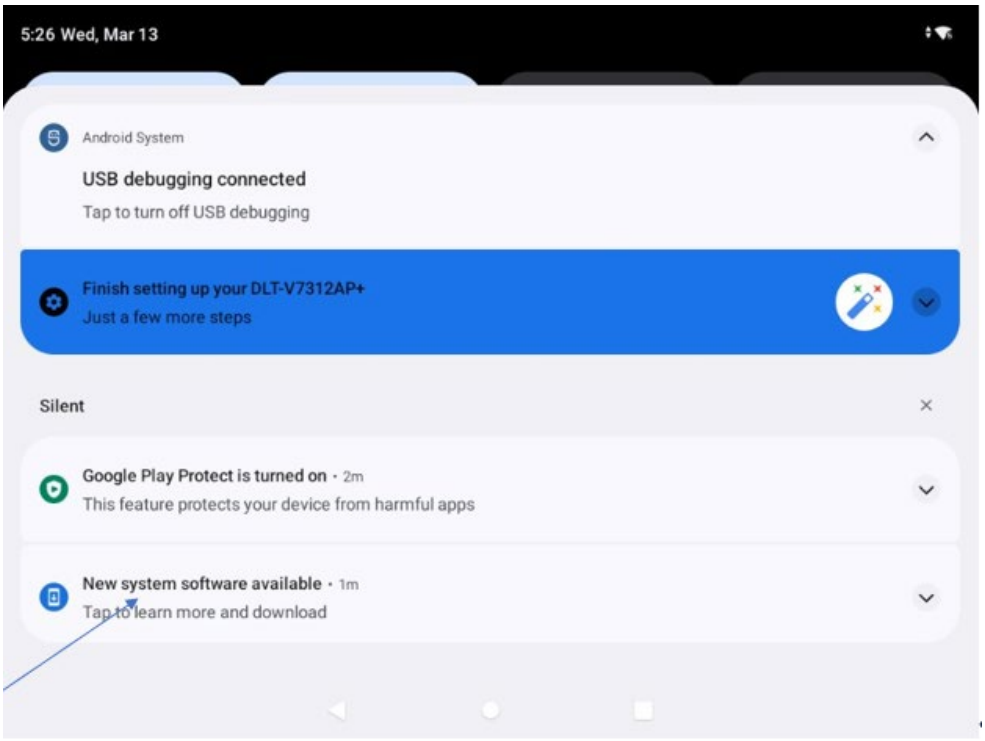


Figure 9-2: New system software available

3. Click on **New System Software available**.

Continue with section *9.3 Perform GOTA update*.

9.2.2. Apply GOTA Update via Settings

1. Scroll down the home screen, go to **Settings** and click on that.

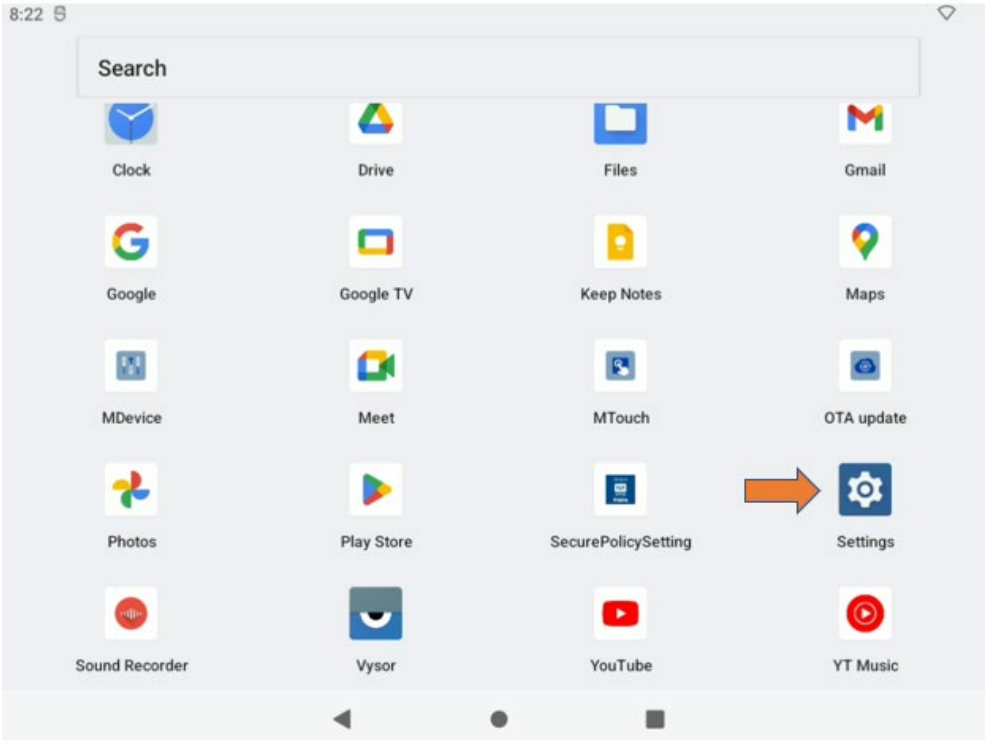


Figure 9-3: Apps Screen - Settings

2. Once, you are in **Settings**, scroll down until you find **System** and click on **System**.

Continue with section *9.3 Perform GOTA update*.

9.3. Perform GOTA update

This page shows information about available new version to be installed.

1. Click on **Download and Install**.

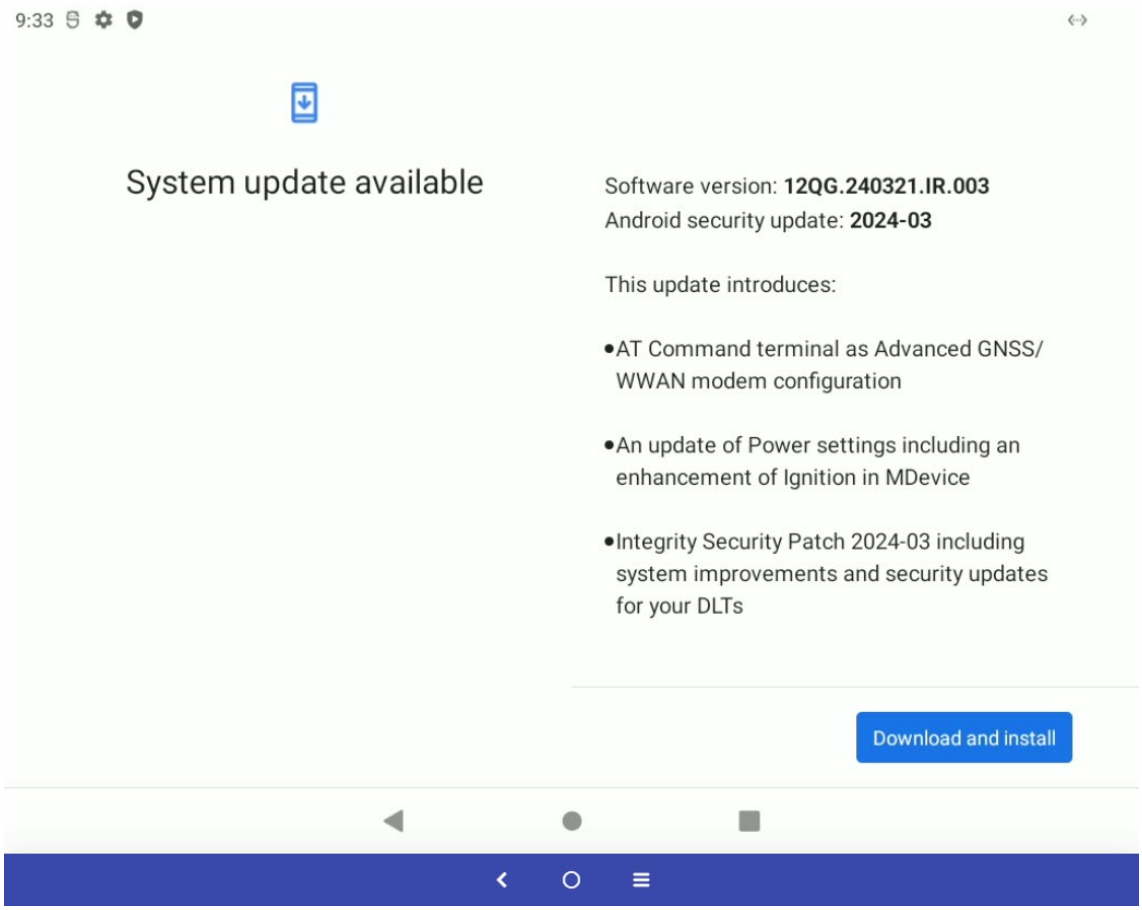


Figure 9-4: New version information

2. Once you click, please wait until download has been finished.

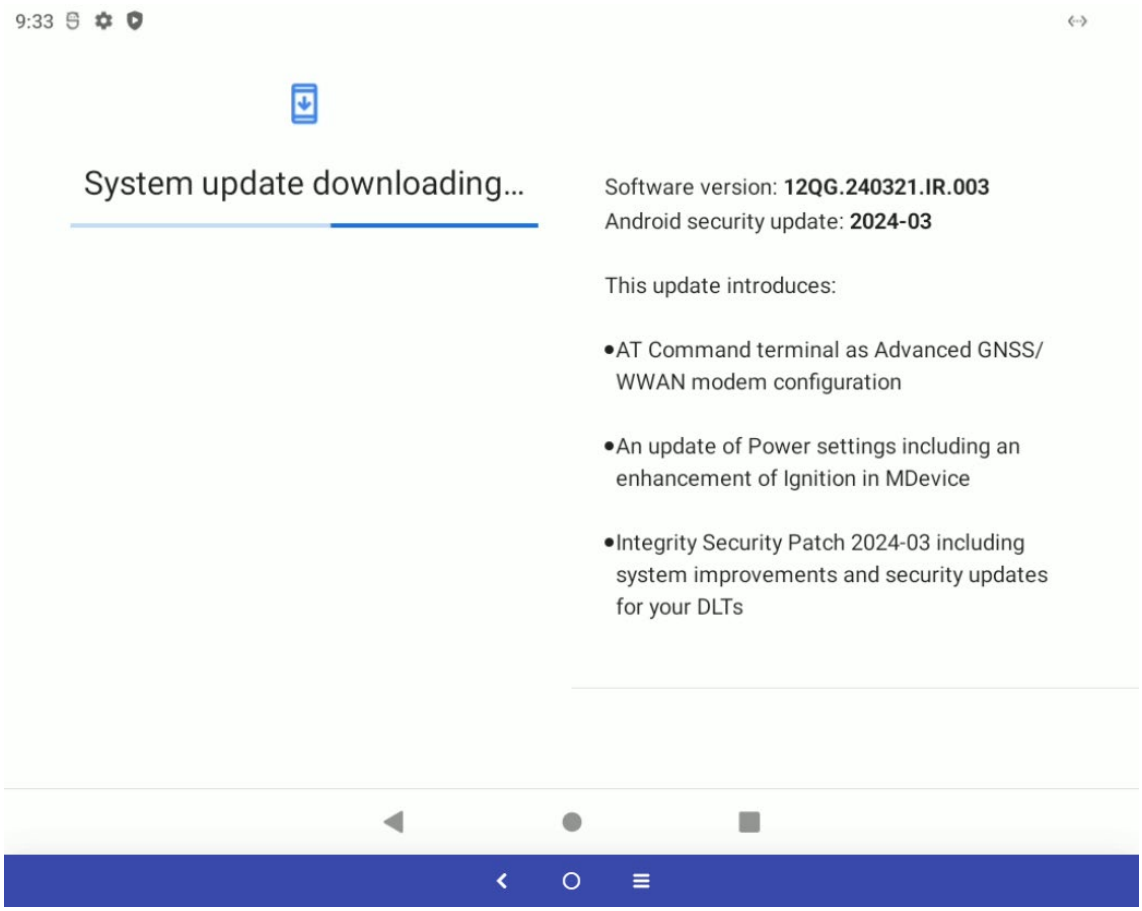


Figure 9-5: System update download in progress

3. After the download completed, the installation of new image will be started automatically.

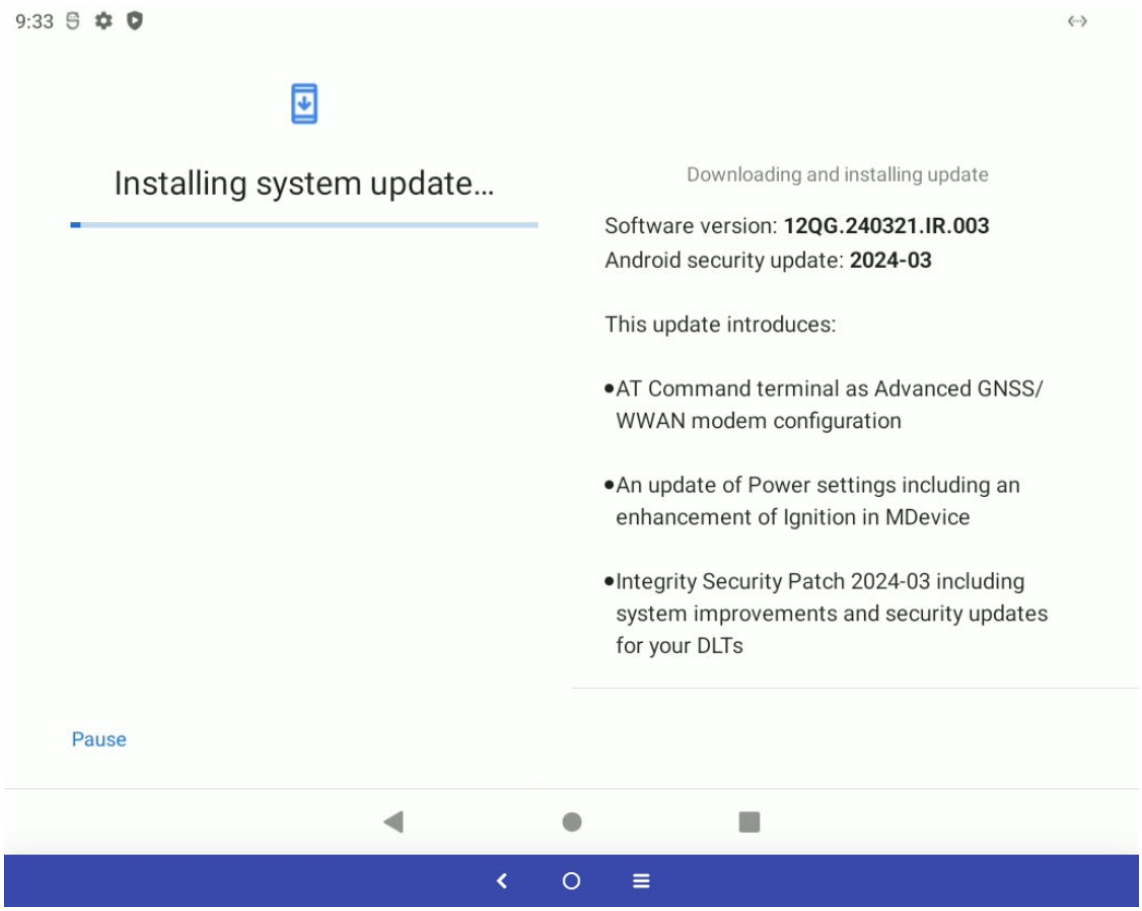


Figure 9-6: Installation system update

NOTE

*The progress bar will update multiple times during process and the whole process will take about **10 minutes** to complete.*

Please don't interrupt the installation process and don't switch off the terminal in between! → can lead into non-booting device condition!

4. After installation done click **Restart now.**

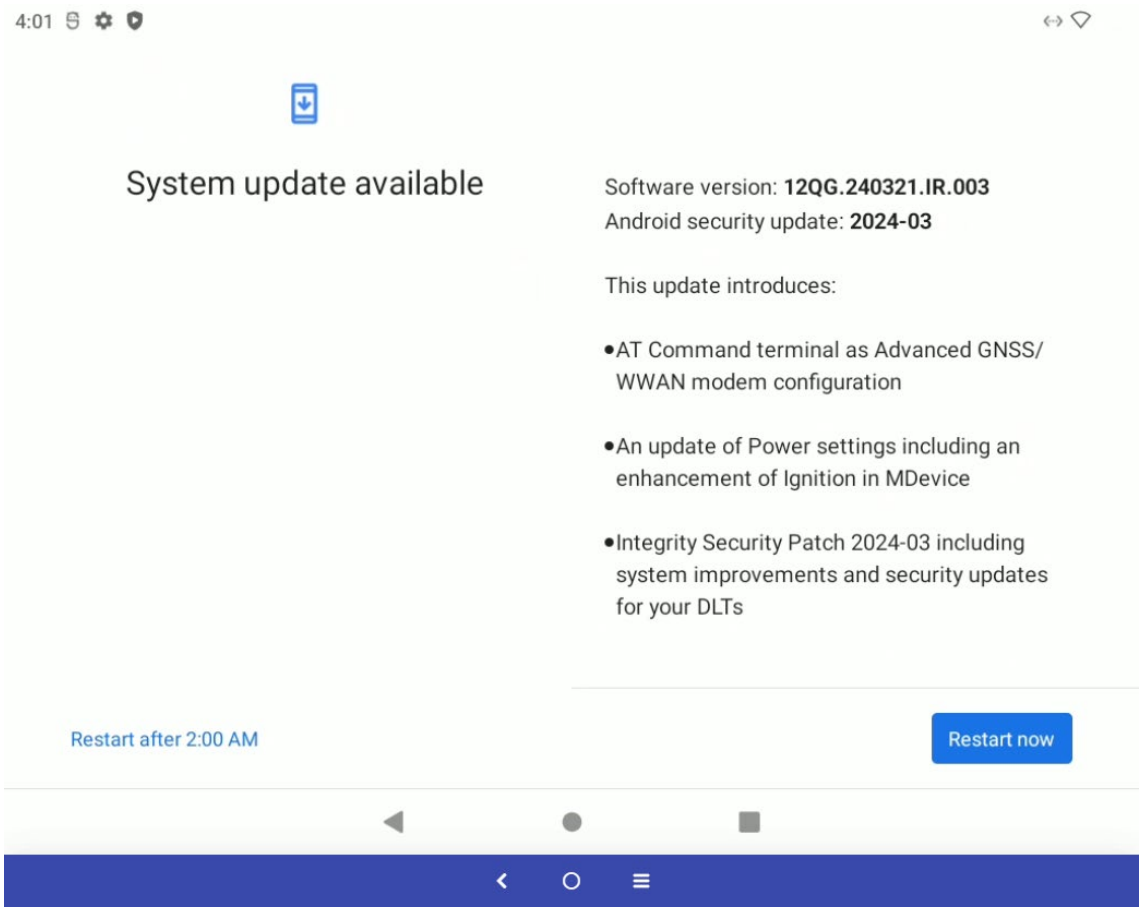


Figure 9-7: System update done – Restart now

After the successful reboot the system will inform you about performed update automatically after a few seconds.

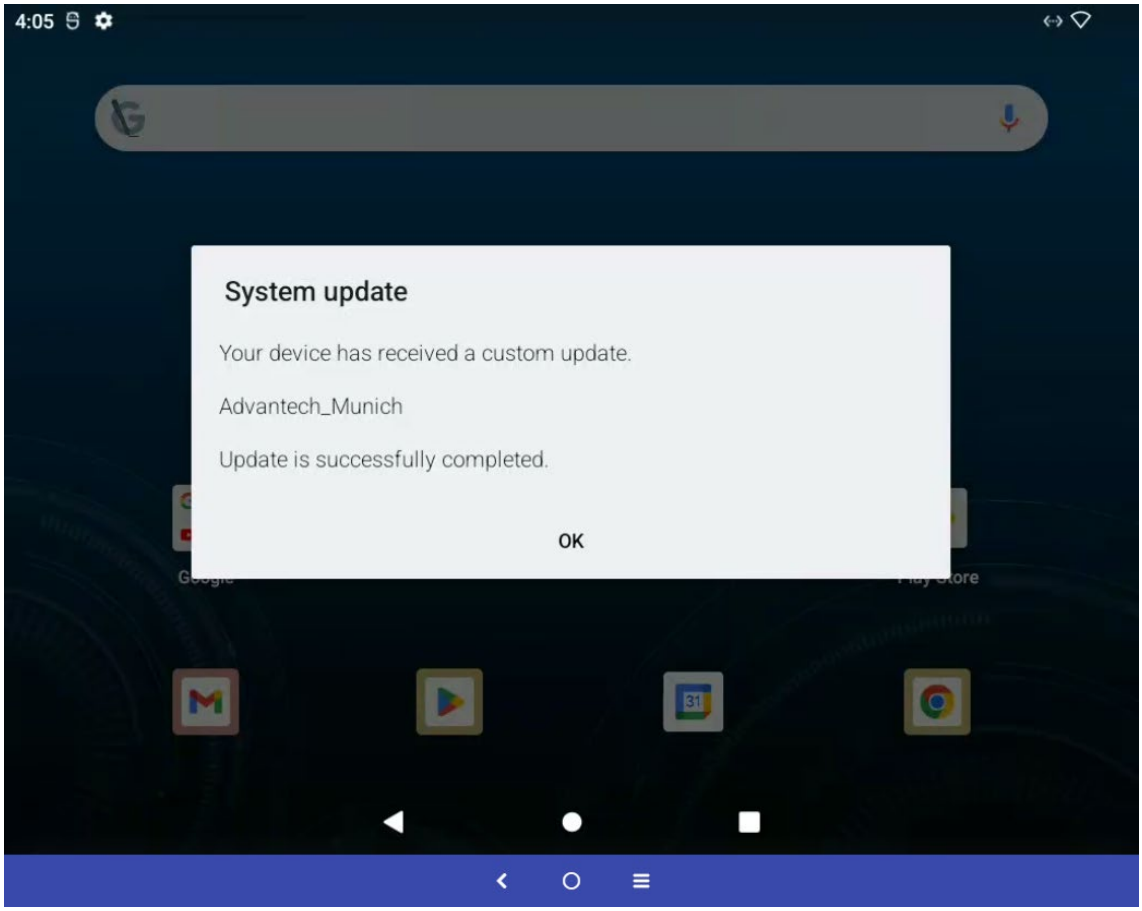


Figure 9-8: System first start after GOTA update

9.4. GOTA problem solving

9.4.1. Network connection not available (before GOTA update)

NOTE

If the network connection is not available or does not respond on download request the following message will be shown.

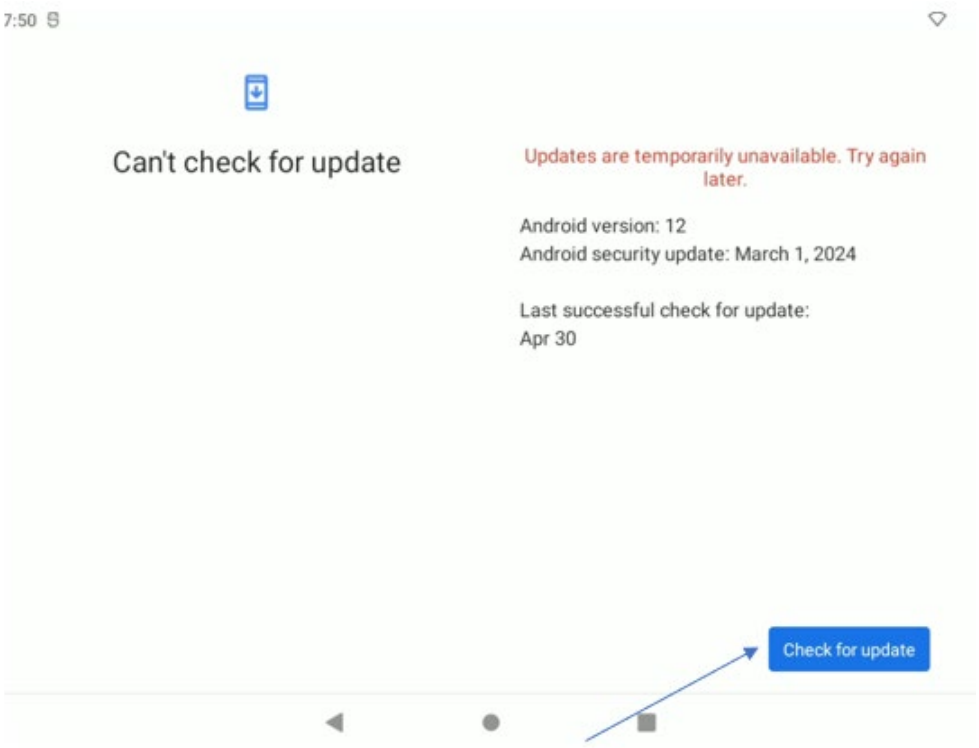


Figure 9-9: network connection not available (before GOTA update)

1. In this case, please check network connection and try again.

9.4.2. Network connection lost (during GOTA update)

NOTE

If the network connection gets lost or is not responding during GOTA installation the following message will be shown.

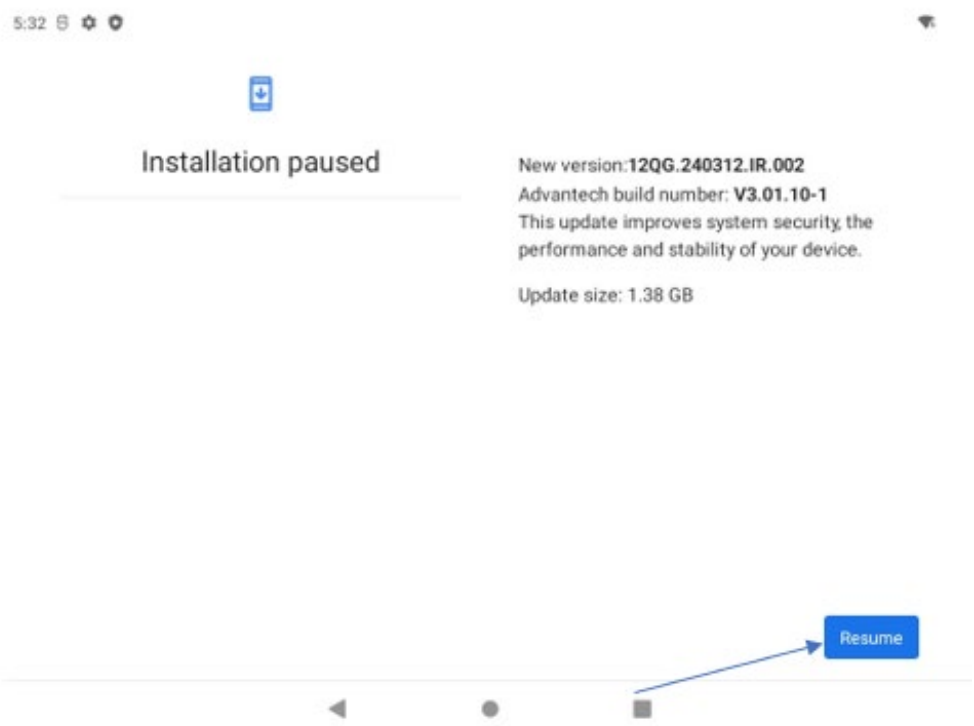


Figure 9-10: network connection lost (during GOTA update)

1. Check network connection and click **Resume** to continue with GOTA image installation. Text will change back to **Installing system update**.

9.4.3. GOTA update failed

In case of an unexpected power loss during the update process, the DLT-V73A terminal can eventually lead into a non-booting situation.

In this situation standard way of using Android OS features to restore the image cannot be used anymore.

Advantech offers a special way to use FASTBOOT connection from an external PC or laptop using USB (Type-C) OTG port to restore the Android OS image again.

This process does not require an RMA and can be handled directly at side following a dedicated SOP (Standard operating procedure) provided by Advantech.

For more information and to receive the SOP please contact your Advantech Service Center for further support.

NOTE

It's not possible switching from Android AOSP image version to GMS version image of Android and vice versa.

*This is also valid in case the **FASTBOOT** image will be applied following the SOP!*

10. MTouch

10.1. MTouch

MTouch is a software utility provided by Advantech to allow users during normal operation to change the PCAP touch sensitivity setting between different modes for glove usage without the need to have Administrator rights.

By default, the permanent value of this settings is normally set by the Administrator inside the Advantech MDevice utility and will be automatically restored during an OS boot up.

For further information about general configuration of PCAP touch sensitivity level please check the following chapter *5.7 Display Setting.*

NOTES

Changes done for PCAP touch sensitivity setting using MTouch application are not permanent saved.

The original set value inside MDevice utility will always be restored at an OS boot up.

To permanently change, enable or disable the PCAP touch sensitivity level can only be done by a system Administrator inside MDevice utility.

*The DLT-V73A supports three **(non glove, glove and thick glove)** sensitivity modes.*

10.1.1. MTouch application

To change the PCAP touch sensitivity level using MTouch, launch the MTouch application from Apps Screen.

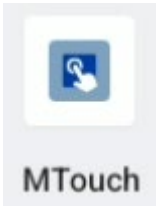


Figure 10-1: Apps Screen → MTouch

10.1.2. MTouch (PCAP)

At DLT-V73A MTouch utility will allow switching between three sensitivity settings:

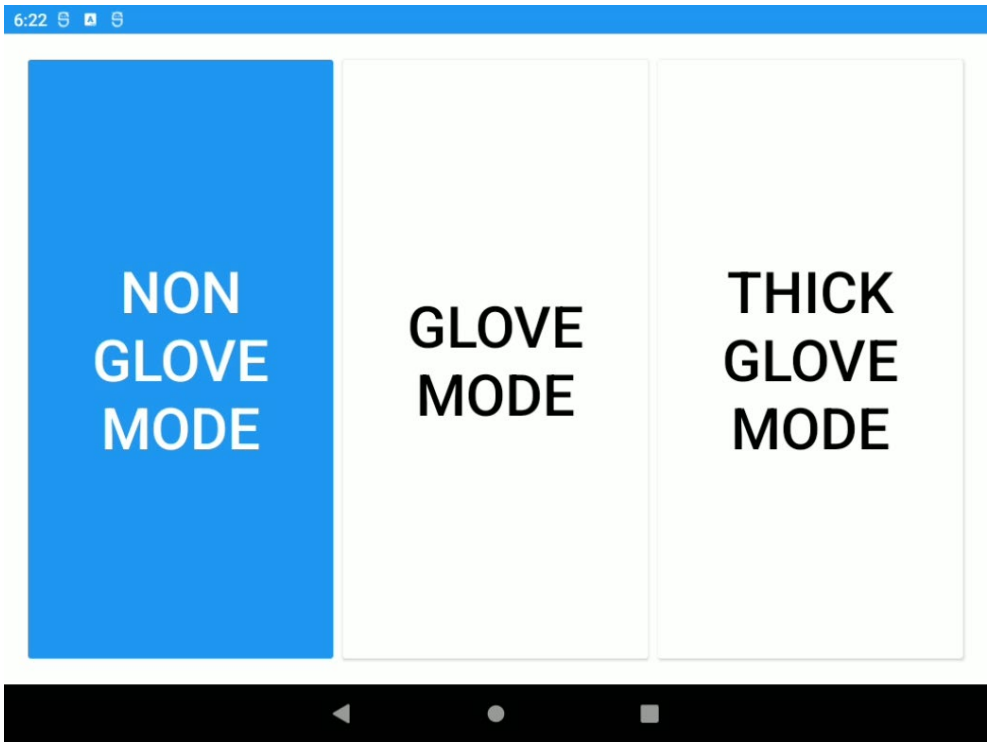


Figure 10-2: MTouch – (PCAP)

10.1.3. MTouch (PENMOUNT)

At non supported resistive touch controller (PENMOUNT), the following information will be displayed after opening the MTouch application:

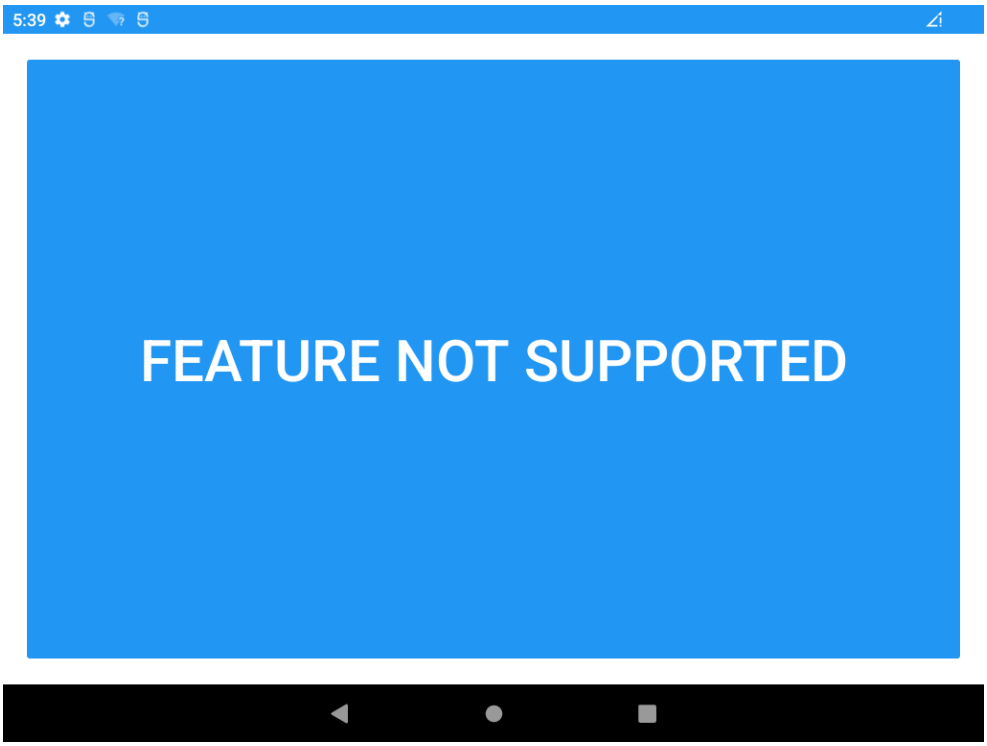


Figure 10-3: MTouch – (PENMOUNT)

11. MWedge

11.1. MWedge

MWedge is a software utility to transfer scanner data into the Android OS from external connected scanners attached to the DLT-V73A via the COM1 serial port.

The software contains two items:

- A background service that is responsible to transfer the incoming scanner data into the Android OS.
- A user settings app that allows user to update the settings for attached serial scanner and software setup.

NOTICE ***Prevent system malfunction and property damage.***

Incorrect settings of the Scanner Wedge can interfere with or interrupt the function of the system. MWedge settings may therefore only be made by skilled personnel such as IT administrators with professional experience in software handling. Improper changes to the MWedge settings will void any warranty of the Advantech Co., Ltd.

11.1.1. MWedge configuration

To change the Scanner Wedge settings, launch the MWedge application.

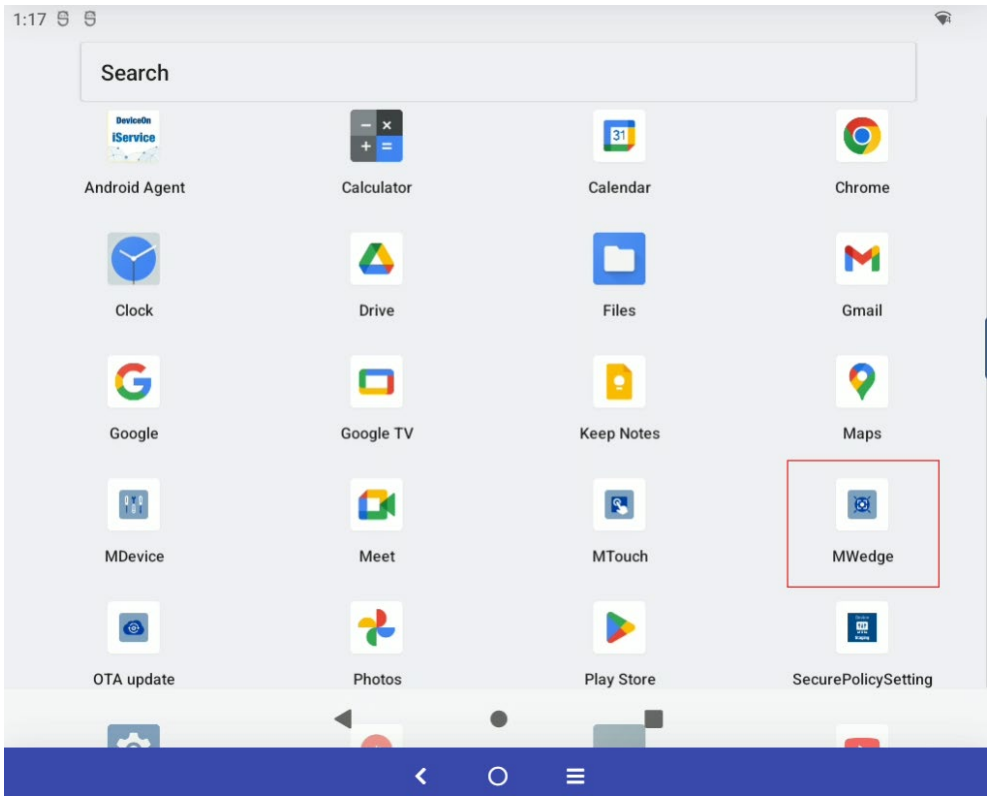


Figure 11-1: App Screen – MWedge

11.1.2. MWedge (Serial)

The first section **Serial** contains serial port parameters.

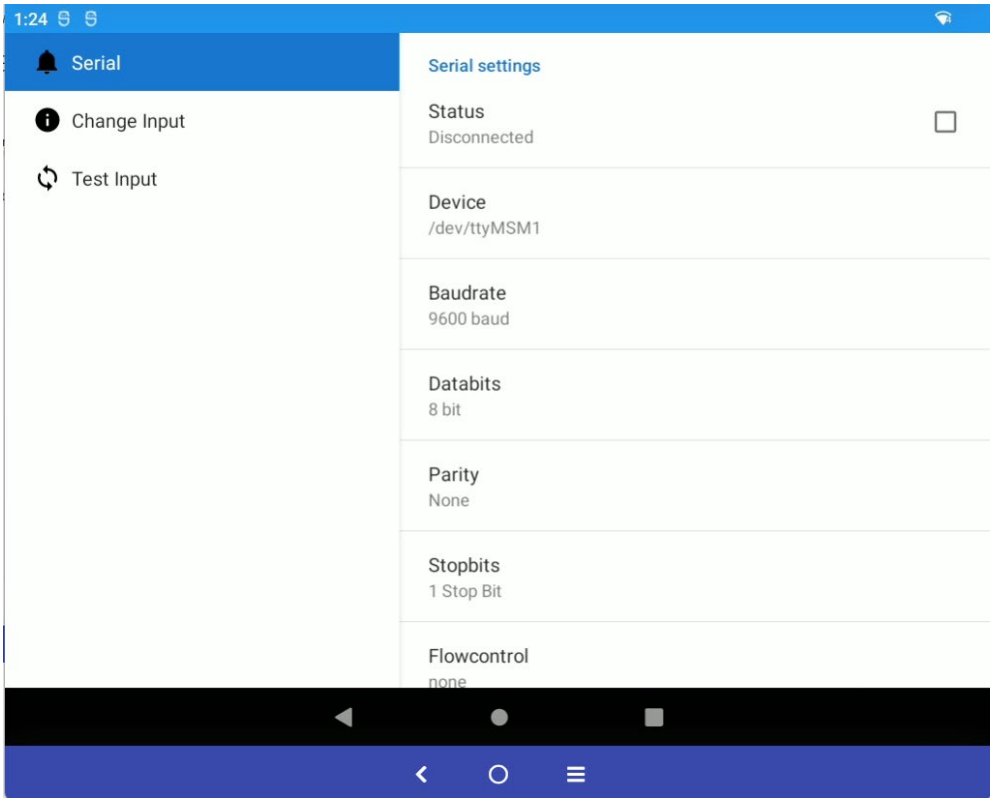


Figure 11-2: MWedge (Serial) – serial port parameters

Please make sure that status is **Connected.** To do this, enable the checkbox.

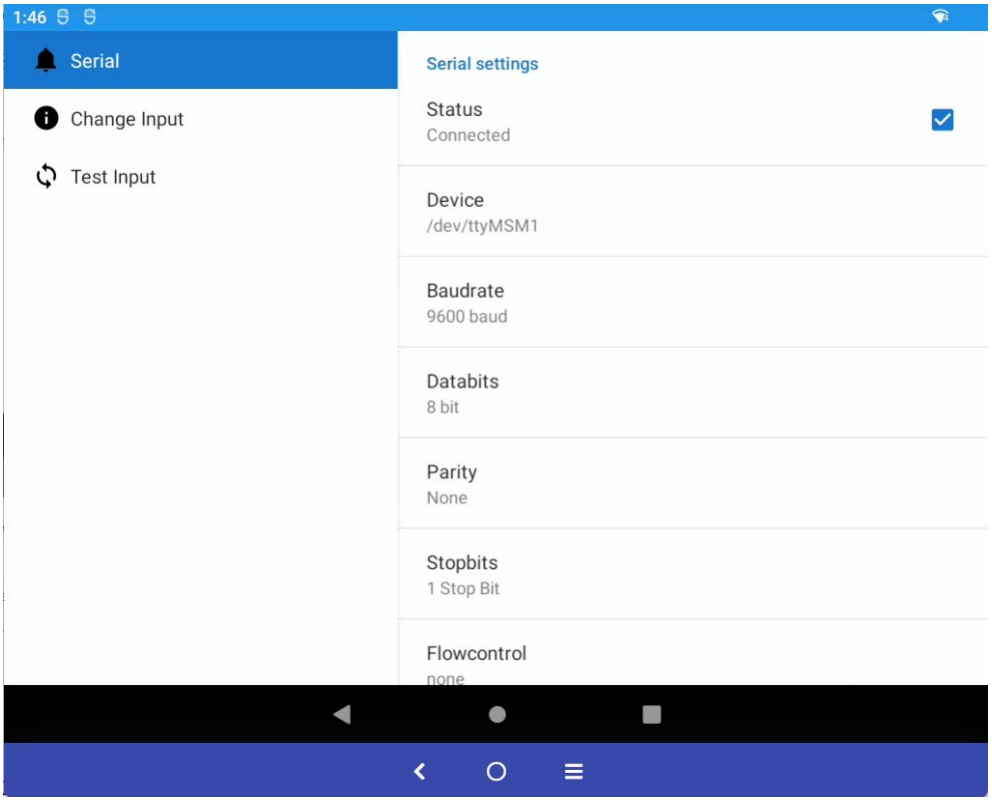
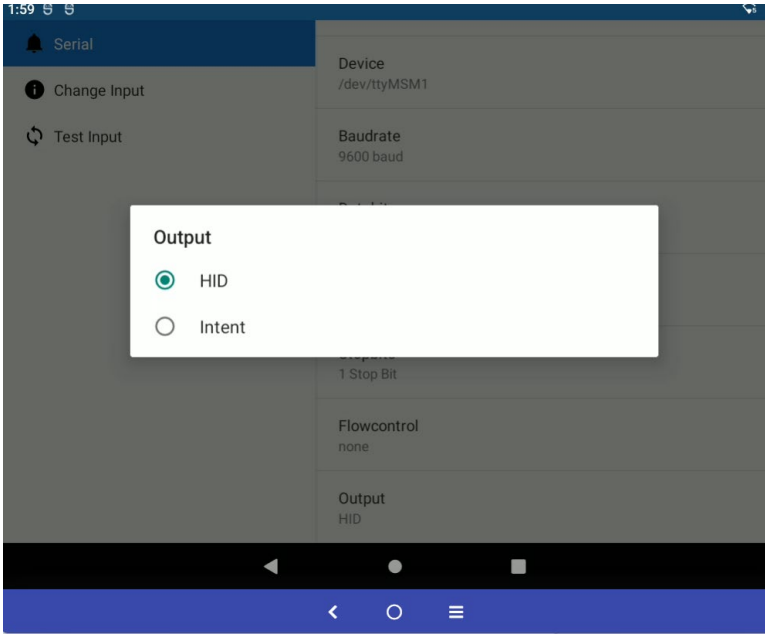


Figure 11-3: MWedge (Serial) – Status connected

The following settings depend on current attached serial scanner configuration.

NOTE Please refer to the scanner manufacturer manual for further information how to setup.

Status	Option to enable / disable MWedge. COM1 port will be available for other programs while status reads **Disabled**.
Device	Android only supports external provided power at COM1 port (5/12V support). This option needs to be enabled inside MDevice utility as described in chapter *5.4 Power Settings*. The related system device name reads “/dev/ttyMSM1”. ***IMPORTANT NOTE***: *Do not make any changes to this entry.*
BaudRate	BaudRate to be used: Possible values to select from are 1200 to 230400 Baud. Default value: 9600

Databits	Databits to be used: Possible values to select from are 5 to 8 bits. Default value: 8
Parity	Parity to be used: Possible values to select from are none / odd / even / mark / space. Default value: none
Stopbits	Stopbits to be used: Possible values to select from are 1 / 2. Default value: 1
Flowcontrol	Flowcontrol to be used: Possible values to select from are none / RTSCTS / Xon-Xoff / RS485-HalfDuplex (RTS). Default value: none
Output	By default, **HID** is selected that incoming scanner data is automatically sent as keyboard data input (cursor position)  Figure 11-4: MWedge (Serial – Output configuration
Output	By selecting **Intent** scanner data is sent as BROADCAST message: "advantech.mwedge.BARCODE_SCANNED", extra filed "barcode_data" scanned barcodestring.

NOTE

Important:

If the scanner configuration differs, make sure to set identical settings to MWedge configuration, otherwise the communication will not work correctly!

The settings will be auto-saved when closing the app.

11.1.3. MWedge (Change Input)

In this section, incoming scanner data format can be manipulated.

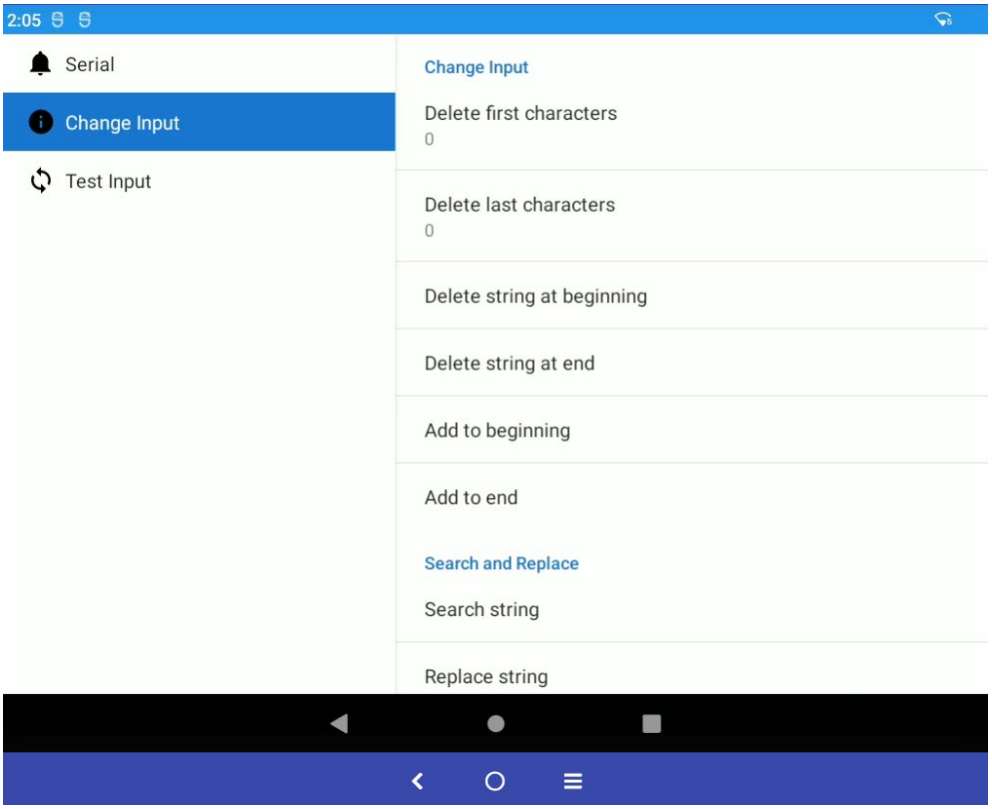


Figure 11-5: MWedge (Change Input)

By default configuration, the scanner data is transferred to the Android OS without modification. The following settings are available:

Change Input

Delete first characters	Defines the amount of characters to be deleted at the start of the string received from the scanner before sending to the Android OS. ***IMPORTANT NOTE***: *Do not leave this entry blank. A blank entry will lead to software malfunction*
Delete last characters	Defines the amount of characters to be truncated from the end of the string received from the scanner before sending to the Android OS. ***IMPORTANT NOTE***: *Default setting is "0". Do not make any changes to this entry.*
Delete string at beginning	A static string to be removed from the beginning of each string received from the scanner can be defined in this section. ***IMPORTANT NOTE***: *The string defined here must be identical to incoming data from the scanner to be removed successfully before sending to Android OS.*
Delete string at the end	A static string to be removed from the end of each string received from the scanner can be defined in this section. ***IMPORTANT NOTE:*** *The string defined here must be identical to incoming data from the scanner to be removed successfully before sending to Android OS.*
Add to beginning	Defines a string that will be added in front of the string received from the scanner before sending to Android OS.
Add to end	Defines a string that will be appended to the string received from the scanner before sending to Android OS.

Search and replace

Search String	A static string to be searched within each string received from the scanner can be defined in this section.
Replace String	A static string to be added, replacing the one searched previously, within each string received from the scanner can be defined in this section. You can also delete the string searched, just leaving this entry blank.

11.1.4. MWedge (Test)

This dialog text field can be used to test the current settings.

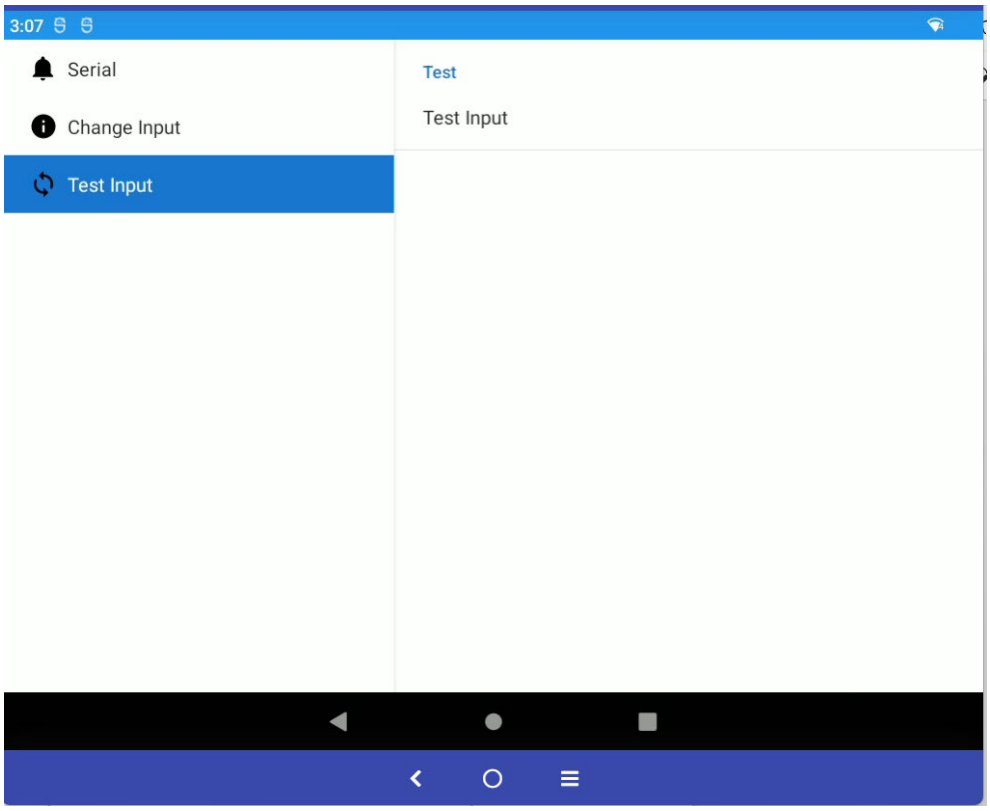


Figure 11-6: MWedge (Test)

1. Perform a double click on the Text field called **Test Input** to begin a test scan. The string received from the scanner will be shown in the **Test Input** pop up window. In the screenshot below this is the text light blue background fill.

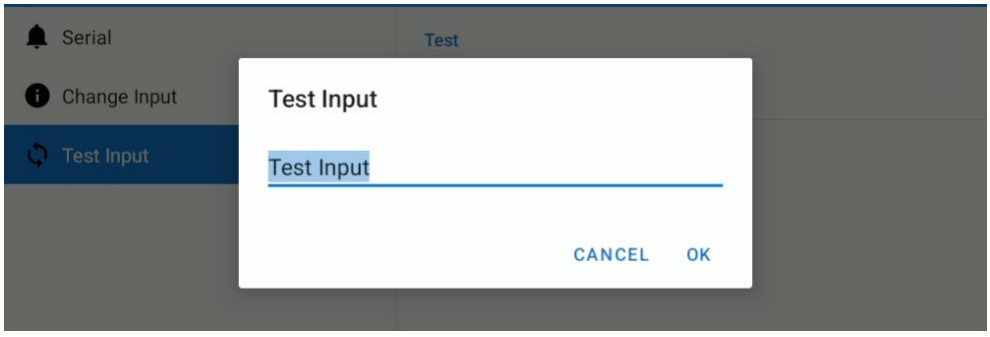


Figure 11-7: MWedge – Test Input

2. Close window with **CANCEL** or **OK.**

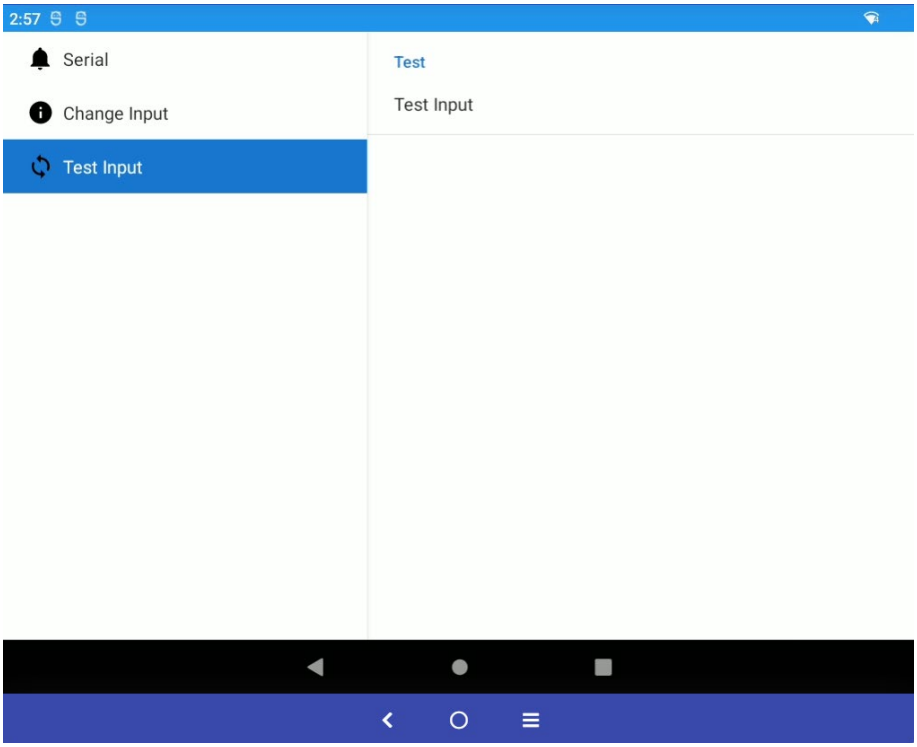


Figure 11-8: MWedge – Test Input

3. Press button ■ and perform a touch swipe to close the MWedge.

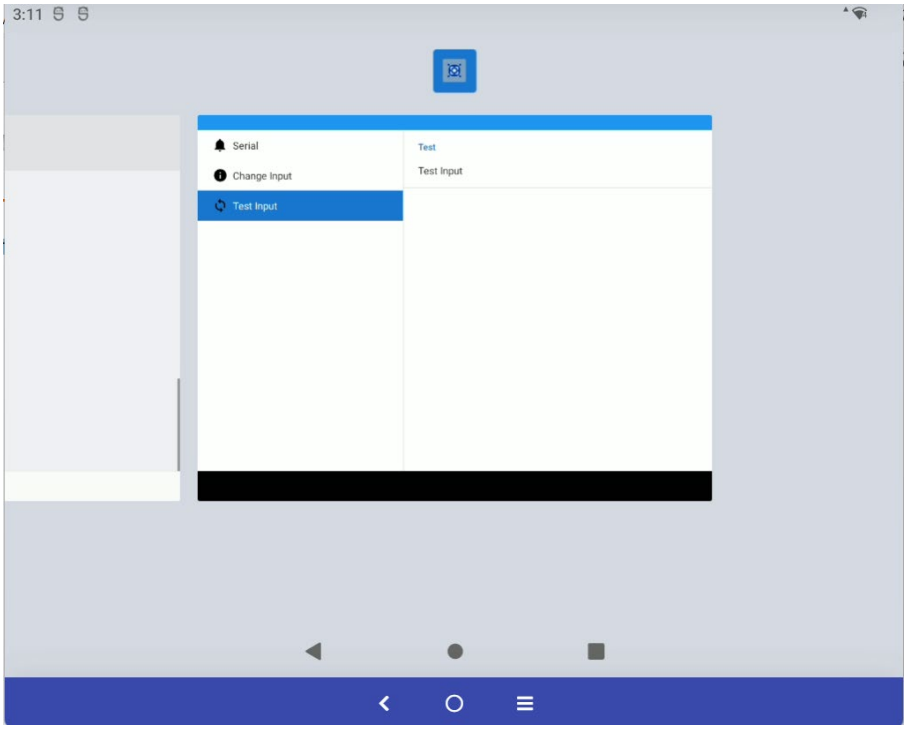


Figure 11-9: Close MWedge Android OS 12

Parameters will be auto-saved on exit.

12. List of figures