



DAKT-50 USER GUIDE



DAKT-50 User Guide
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DAKT-50 User Guide

Revision History

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REGULATORY

FCC ID: YRW-DAKT50

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference in radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to the radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference in radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: Reorient or relocate the receiving antenna. —Increase the separation between the equipment and receiver. —Connect the equipment into an outlet on a circuit different from that to which the receiver is connected. —Consult the dealer or an experienced radio/TV technician for help.

Caution: Any changes or modifications to this device not explicitly approved by the manufacturer could void your authority to operate this equipment. This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.

PREFACE

This guide is the primary source of information for setting up and installing DAKT-50.

Audience

This guide provides simple descriptions of DAKT-50 features, as well as basic information for anyone installing and configuring DAKT-50.

Organization

This guide is organized as follows:

[Chapter 1, Overview](#). Provides an overview of the DAKT-50.

[Chapter 2, Specifications](#). Discusses power requirements and dimensions of DAKT-50, etc.

[Chapter 3, Setup](#). Explains setup and installation of DAKT-50.
This chapter tells how to establish connections with other devices.

[Chapter 4, Maintenance and Cleaning](#). Explains maintenance of DAKT-50.

[Chapter 5, Service and Support](#). Provides information on contacting your Datecs representative or service provider and information on how to order accessories or documentation from Datecs Ltd..

[Chapter 6, Troubleshooting Guidelines](#). Provides troubleshooting guidelines should you encounter a problem in terminal installation and configuration.

Related Documentation




To learn more DAKT-50, refer to the following set of documents:

- DAKT-50 *Physical Security Features*
- DAKT-50 *Firmware API Specifications*
- DAKT-50 *Software Design Specifications*

CONVENTIONS

Various conventions are used to help you quickly identify special formatting. [Table 1](#) describes these conventions and provides examples of their use.

Table 1 Document Conventions

Convention	Meaning	Example
Blue	Text in blue indicates terms that are cross references.	See Guide Conventions
<i>Italics</i>	Italic typeface indicates book titles or emphasis.	You <i>must</i> not use this unit underwater.
	The Information icon is used to highlight important information.	DAKT-50 is using USB communication
	The caution symbol indicates hardware or Software failure, or loss of data.	The unit is not waterproof or dustproof, and is intended for indoor use only.
	The warning symbol is used as a warning when bodily injury might occur.	Due to risk of shock do not use the terminal near water.

Overview

This chapter provides a brief description of Datecs's DAKT-50 device.

DAKT-50

The DAKT-50 unit is an integrated countertop Point-of-Interaction terminal with 5-inch display with capacitive touch screen. The DAKT-50 offers an integrated smart card, magnetic card and contactless card reader, offering advanced security and payment processing capabilities to handle credit and debit card transactions in an attended or semi-attended environment.

DAKT-50 supports both symmetric encryption algorithms (DES, 3DES, and AES) and asymmetric encryption (RSA and ECC). This device internally manages simultaneous multiple keys through either Master Session- or DUKPT-based processes, and offers high performance smart card processing, as well as support for the new generation of 3-volt cards.

The DAKT-50 sleek and stylish ergonomic design offers power and performance in a smart card, magnetic card and Contactless PIN pad device.



Datecs Ltd. ships variants of DAKT-50 unit for different markets. Your unit may have a different configuration. However, the basic processes described in this guide remain the same, regardless of configuration.



Figure 1

Features At a Glance

- **Security** architecture meets specifications for PIN-entry devices (PED) and sophisticated file authentication.

The DAKT-50 provides the right combination of features and functions for countertop device. This includes a magnetic card reader, contactless card reader, smart card reader, an integrated PIN pad, and an WiFi and 4G wireless mobile.

Features and Benefits

Exceptional Ease of Use

- Modern and stylish design
- Intuitive interface
- Highly readable display handles multiple languages.

Critical Security Protection

- Incorporates tamper-detection circuitry to resist unauthorized intrusion and supports a broad spectrum of hardware and software-based security features.
- Integrated security modules simultaneously support sophisticated encryption (AES, DES, 3DES, RSA, ECC) and key management schemes.

Strong Feature Set

- Primary smart card reader support for synchronous and asynchronous smart cards.
- DAKT-50 has received PCI PTS 6.x SRED Security Certification.

Device Specifications

Processor for payment and security functions	ARM Cortex® M4 Security Microcontroller
Memory	<ul style="list-style-type: none"> • 1MB Internal RAM • 4MB External Serial Flash
Processor for Android OS	Quad-Core ARM Cortex-A53 64-bit
Memory	<ul style="list-style-type: none"> • 16GB Flash • 2GB LPDDR4x RAM
Main Display	<ul style="list-style-type: none"> • Type – TFT • 16.7M colors • Size 5-inch • Resolution – 720x1280 px • Capacitive touchscreen
Smart Card Reader	<ul style="list-style-type: none"> • ISO7816 • EMV L1 certified
Magnetic Card Reader	<ul style="list-style-type: none"> • 3-track bi-directional reading • ISO 7810, 7811 and 7813
Contactless Card Reader for payment applications	<ul style="list-style-type: none"> • AMEX ExpressPay • Discover D-PAS • MasterCard Contactless • VISA PayWave • China Union Pay • JCB • Interac (Canada)
Contactless Card Reader	<ul style="list-style-type: none"> • NFC-A/ISO 14443 Type-A • NFC-B/ISO 14443 Type-B • NFC-F/Felica • NFC-V/ISO 15693
Camera	<ul style="list-style-type: none"> • Main - 2 MP
Battery(only for back up)	Rechargeable lithium-ion battery 3.7V, 220 mAh
Connectivity	<ul style="list-style-type: none"> • USB Type-C Port • RS232 • 2 x USB Type-A Ports • 3.5 mm TRRS Port • MDB Connector • WLAN <ul style="list-style-type: none"> - 2.4G/5G, 802.11 a/b/g/n/ac • Wireless mobile Data for Global version: <ul style="list-style-type: none"> - LTE FDD Band B1/ B2/ B3/ B4/ B5/ B7/ B8/ B12/ B13/ B14/ B17/ B18/ B19/ B20/ B25/ B26/ B28/ B66/ B71 - LTE TDD Band B34/ B38/ B39/ B40/ B41 - WCDMA Bands B1/ B2/ B4/ B5/ B6/ B8/ B19 - GSM/EDGE PCS 1900, DSC 1800, GSM 850, E-GSM 900 • GNSS; GPS, Galileo, Glonass and Beidou • 1 x Slot for Nano SIM • 1 x Slot for SAM card

Audio features	<ul style="list-style-type: none"> • Electro-Magnetic Buzzer • 1 x Speaker • 1 x Microphone
Indications	<ul style="list-style-type: none"> • LED Indication of the Smart Card Reader Area • LED Indication of the Magnetic Card Reader Area
Sensors	<ul style="list-style-type: none"> • Ambient light sensor • Accelerometer • Proximity sensor
Buttons	<ul style="list-style-type: none"> • Power button • Reset button • EXT button
OS	Android 13
Certifications	PCI PTS 6.x
Dimensions (LxWxH), mm	105 x 146 x 57
Weight, g	486g
Environmental	Operating: -20°C to +45°C / 35 to 85% RH Storage: -20°C to +70°C / 20 to 90% RH
Power Supply	<ul style="list-style-type: none"> • 12V through Power Adapter • 12 - 48 V DC via MDB or RS-232

Device Operation



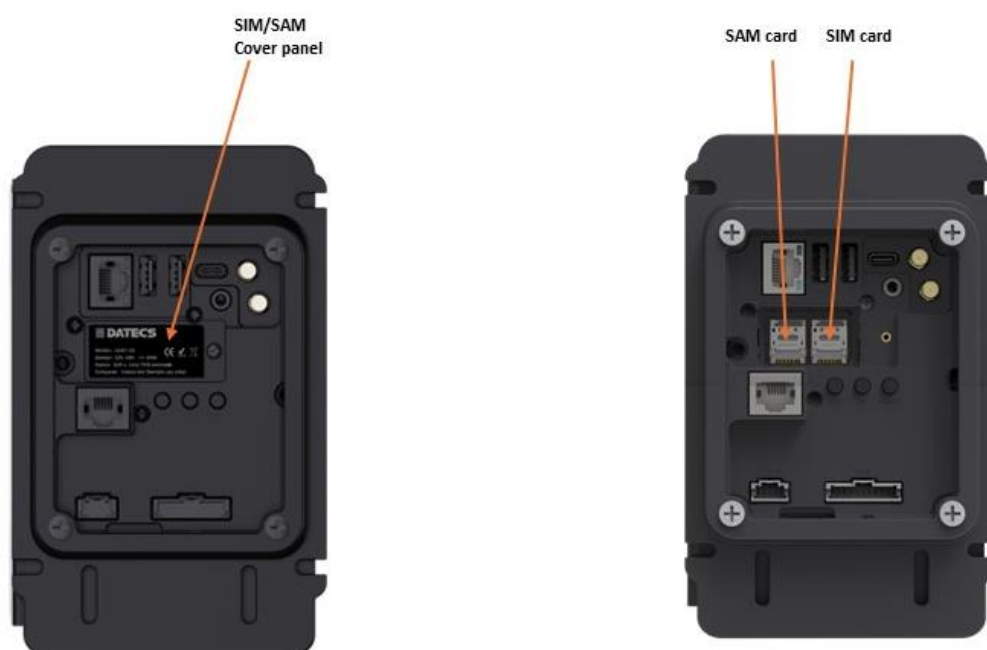
Figure 2

- 1. Main Camera
- 2. Magnetic Card Reader
- 3. WAN Connector
- 4. USB Type-A Connector
- 5. USB Type-A Connector
- 6. USB Type-C Connector
- 7. GPS Antenna Connector
- 8. 4G Antenna Connector
- 9. AUX Connector
- 10. RESET Button

- 11. POWER ON/OFF Button
- 12. EXT Button
- 13. MDB Connector
- 14. RS232 Connector
- 15. DC Connector
- 16. Secondary camera and Flashlight
- 17. Smart Card Reader
- 18. Speaker
- 19. Microphone
- 20. NFC Antenna
- 21. SIM/SAM Cover panel

(for more info see section: INSERT SIM/SAM CARD, page 14)

INSERT SIM/SAM CARD



1. Remove the SIM/SAM cover panel by unscrewing the screw on its right side.
2. Insert a SIM card into the right slot.
3. Insert a SAM card into the left slot.

GETTING STARTED

Setup

DAKT-50 has several USB communication modes.

- "File Transfer"
- "USB tethering"
- "MIDI"
- "PTP"
- "No data transfer"

COMMUNICATION PARAMETERS with Secure processor (Service Functions)

For communication with secure processor, please use only USB Type-C connector and connect special service cable and programming board. "APPLICATION DOWNLOAD MODE" and "SYSTEM MODE" are accessible only through USB Type-C connector.

APPLICATION DOWNLOAD MODE

To enter in application download mode on the DAKT-50, must be used the special service cable and programming board. Must be hold the boot button on programming board. Release the button after characteristic sound (first beep) is played. In this mode can be update Firmware or Application of Secure Processor.

SYSTEM MODE

To enter in system mode on the DAKT-50, must be used the special service cable with programming board. Must be hold boot button on programming board. Release the button after characteristic sound (second beep) is played. System mode is for key management.

UPDATING SECURE PROCESSOR FIRMWARE/APPLICATION

Firmware and application on Secure processor can be updated via Android application.

UPDATING Application processor FIRMWARE

Application processor firmware can be updated via OTA.

SOFTWARE VERSIONS

The product software version of Application processor can be retrieved using Android settings menu. From main screen by pressing "Settings" -> "General" -> "About Tablet":

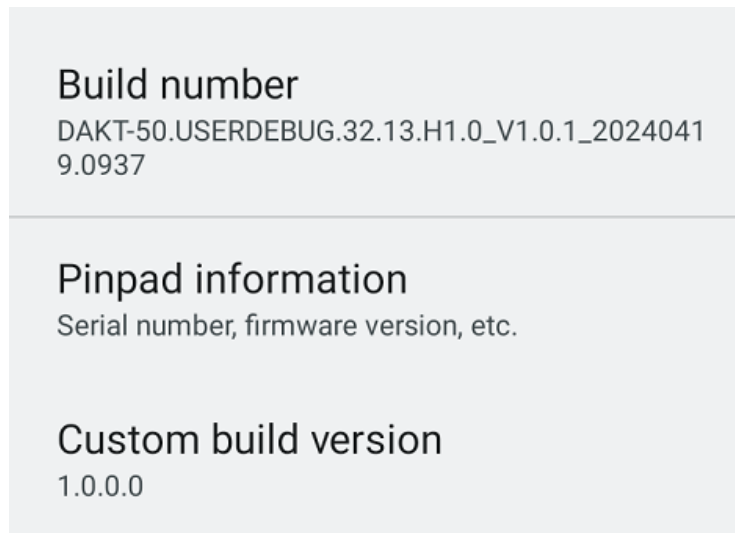


Figure 3

Android version
Software version
Build number

The product firmware and/or application versions of Security processor can be retrieved using Android settings menu. From main screen by pressing "Settings" -> "General" -> "About Tablet" -> "Pinpad information":

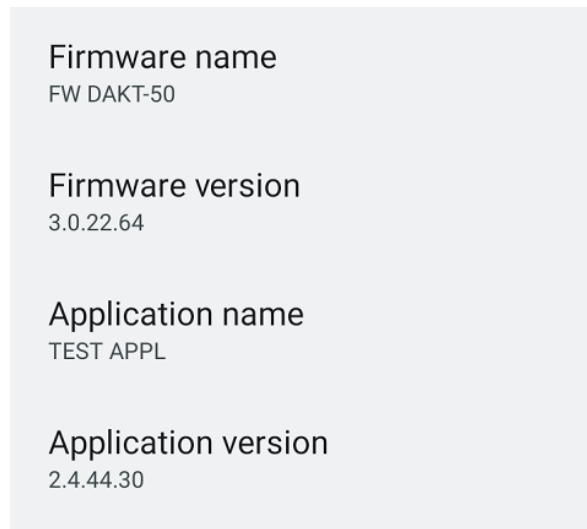


Figure 4

Status of the Secure processor On/Off
Serial Number of the device
CPU serial number – USIP serial number
Capabilities of the device
Firmware name of the loaded FW
Firmware version of the loaded FW
Application name of the loaded AP
Application version of the loaded AP
Firmware key version
Application key version
Loader key version
Hardware version
Device name

Smart Card Reader Use

The smart card transaction procedure can vary depending on the application loaded on the DAKT-50. Verify the proper procedure with your application provider before performing a smart card transaction.

To Conduct a Smart Card Transaction

- 1** Position a smart card with the gold contacts facing upward (Figure 5).
- 2** Insert it into the ICC card reader slot in a smooth, continuous motion until it seats firmly.
- 3** Remove the card when the display indicates the transaction is completed.



Figure 5



Leave the smart card in the card reader until the transaction is completed. Premature removal can void the transaction.

Magnetic Card Reader Use

The magnetic card transaction procedure can vary depending on the application loaded on the DAKT-50. Verify the proper procedure with your application provider before performing a magnetic card transaction.

To Conduct a Smart Card Transaction

- 1** Position a magnetic card so the magnetic strip facing the magnetic head (Figure 6).
- 2** Slide it into the magnetic card reader slot in a smooth, continuous motion.
- 3** Remove the card when the display indicates the transaction is completed.

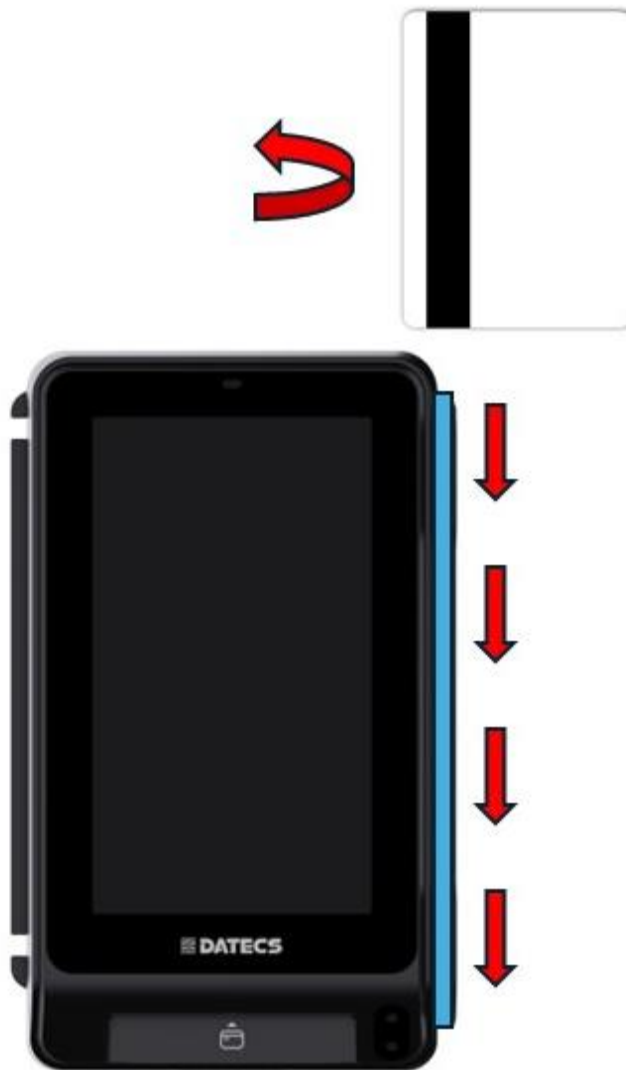


Figure 6

Contactless Card Reading

The contactless card transaction procedure can vary depending on the application loaded on the DAKT-50. Verify the proper procedure with your application provider before performing a contactless card transaction.

To Conduct a Contactless Credit/Debit Card Transaction

1. Place a contactless card to shown on the DAKT-50 display contactless logo (Figure 7).
2. Remove the card when the display indicates the transaction is completed.



Figure 7

Troubleshooting Guidelines

This chapter lists typical examples of malfunction you may encounter while operating your DAKT-50 unit and steps you can take to resolve them.

The troubleshooting guidelines provided in the following section are included to assist successful installation and configuration of DAKT-50 units. If you are having problems operating your DAKT-50 unit, please read through these troubleshooting examples. If the problem persists even after performing the outlined guidelines or if the problem is not described, contact your local Datecs Ltd. representative for assistance.



The DAKT-50 unit contains no user-serviceable parts. Do not, under any circumstance, attempt to disassemble the unit. Perform only those adjustments or repairs specified in this guide. For all other services, contact your local Datecs Ltd. service provider. Service conducted by parties other than authorized Datecs Ltd. representatives may void any warranty.

Blank Display

When the DAKT-50 unit display does not show correct or clearly readable information:

- Check the attached power supply.
- If the problem persists, contact your local Datecs Ltd. service provider.

Touchscreen Does Not Respond

If the touchscreen does not respond properly:

- Check the display. If it displays is not blank, follow the steps outlined in [Transactions Fail To Process](#).
- If the problem persists, contact your local Datecs Ltd. representative.

Transactions Fail To Process

There are several possible reasons why the unit may not be processing transactions. Use the following steps to troubleshoot failures.

Check Smart Card Reader

- Perform a test transaction using several different smart cards to ensure the problem is not a defective card.
- Ensure that the card is inserted correctly (see [Smart Card Reader Use](#)).
- If the problem persists, contact your local Datecs Ltd. representative.

Maintenance and Cleaning

DAKT-50 units have no user-serviceable parts.

To clean the unit, use a clean cloth slightly dampened with water and a drop or two of mild soap. For stubborn stains, use alcohol or an alcohol-based cleaner.

Do not attempt to clean the card readers. Doing so can void any warranty. For card reader service, contact your Datecs Ltd. distributor or service provider.



Never use thinner, trichloroethylene, or ketone-based solvents – they can deteriorate plastic or rubber parts. Do not spray cleaners or other solutions directly onto the display.

Battery replacement

For replacing the back battery of DAKT-50 please contact with your local Datecs Ltd. representative or service provider.

Safety

- To prevent damage to your device's parts or internal circuits, do not use it in dusty, smoky, damp, or dirty environments or near magnetic fields.
- Using an unapproved or incompatible power adapter, charger, or battery may damage your device, shorten its lifespan, or cause a fire, explosion, or other hazards.
- Keep the device and battery away from excessive heat and direct sunlight. Do not place them on or in heating devices, such as microwave ovens, stoves, or radiators.
- Dispose the battery, and accessories according to local regulations. They should not be disposed of in normal household waste. Improper battery use may lead to fire, explosion, or other hazards.
- Do not use, store or transport the device where flammables or explosives are stored (in a gas station, oil depot, or chemical plant, for example). Using your device in these environments increases the risk of explosion or fire.

Service and Support

For DAKT-50 problems, product service, and repair information, contact your local Datecs Ltd. representative or service provider.

- International – Contact your local Datecs Ltd. distributor

Service Returns

All customers, please contact your local Datecs Ltd. representative or distributor for assistance with your service, return, or replacement.