



BlueCash-05 USER GUIDE



BlueCash-05 User Guide

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BlueCash-05 User Guide

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REGULATORY

FCC NOTICE

FCC ID: YRW-BLUECASH05

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 to 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:

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 to 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 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.

Specific Absorption Rate (SAR) information: This BlueCash-05 meets the government's requirements for exposure to radio waves. The guidelines are based on standards that were developed by independent scientific organizations through periodic and thorough evaluation of scientific studies. The standards include a substantial safety margin designed to assure the safety of all persons regardless of age or health. FCC RF Exposure Information and Statement the SAR limit of USA (FCC) is 1.6 W/kg averaged over one gram of tissue. Device types: BlueCash-05 has also been tested against this SAR limit. This device was tested for typical body-worn operations with the back of the BlueCash-05 kept 5mm from the body. To maintain compliance with FCC RF exposure requirements, use accessories that maintain an 0mm separation distance between the user's body and the back of the phone. The use of

belt clips, holsters and similar accessories should not contain metallic components in its assembly. The use of accessories that do not satisfy these requirements may not comply with FCC RF exposure requirements, and should be avoided.

PREFACE

This guide is the primary source of information for setting up and installing BlueCash-05.

Audience

This guide provides simple descriptions of BlueCash-05 features, as well as basic information for anyone installing and configuring BlueCash-05.

Organization

This guide is organized as follows:

[Chapter 1, Overview](#). Provides an overview of the BlueCash-05.

[Chapter 2, Specifications](#). Discusses power requirements and dimensions of BlueCash-05, etc.

[Chapter 3, Setup](#). Explains setup and installation of BlueCash-05.
This chapter tells how to establish connections with other devices.

[Chapter 4, Maintenance and Cleaning](#). Explains maintenance of BlueCash-05.

[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.

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

Related Documentation

To learn more BlueCash-05, refer to the following set of documents:

- BlueCash-05 *Physical Security Features*
- BlueCash-05 *Firmware API Specifications*
- BlueCash-05 *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.	BlueCash-05 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 BlueCash-05 device.

BlueCash-05

The BlueCash-05 unit is an integrated countertop Point-of-Interaction terminal with 3.5-inch display with capacitive touch screen. The BlueCash-05 offers an integrated smart 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.

BlueCash-05 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 BlueCash-05 sleek and stylish ergonomic design offers power and performance in a smart card and Contactless PIN pad device.



Datecs ships variants of BlueCash-05 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 BlueCash-05 provides the right combination of features and functions for countertop device. This includes a 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.
- BlueCash-05 has received PCI PTS 6.2 SRED Security Certification.

Device Specifications

Processor for payment and security functions	ARM Cortex® M4 Security Microcontroller
Memory	• 1MB Internal RAM • 4MB External Serial Flash
Processor for Android OS	Quad-Core ARM Cortex-A53 64-bit
Memory	• 16GB Flash • 2GB LPDDR4x RAM • 1 x Slot for SD Card
Main Display	• Type – IPS • 16.7M colors • Size 3.5 inch • Resolution – 480x480 • Backlight • Capacitive touchscreen
Smart Card Reader	ISO7816, EMV L1 certified
Contactless Card Reader for payment applications	• AMEX ExpressPay • Discover D-PAS • MasterCard Contactless • VISA PayWave • China Union Pay • JCB
Contactless Card Reader	• NFC-A/ISO 14443 Type-A • NFC-B/ISO 14443 Type-B • NFC-F/Felica • NFC-V/ISO 15693
Camera	• Main - 2 MP
Battery(only for back up)	Rechargeable lithium-ion battery 3.8V, 1800 mAh
Connectivity	• USB - Device - Host • WLAN - 2.4G/5G, 802.11 a/b/g/n/ac • Wireless mobile Data for Europe version: - LTE FDD Band 1, 3, 5, 7, 8, 19, 20, 26 - LTE TDD Band 38, 40, 41 - WCDMA Band 1, 5, 8 - GSM/EDGE PCS 1900, DSC 1800, GSM 850, E-GSM 900 • Wireless mobile Data for Latin America version: - LTE FDD Band 1, 2, 3, 4, 5, 7, 12, 17, 19, 25, 26, 28A, 28B, 66 - LTE TDD Band 38, 41 - WCDMA Band 1, 2, 4, 5, 8 - 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	• Electro-Magnetic Buzzer • 1 x Speaker • 1 x Microphone
Indications	• 2 x LEDs for Security Processor statuses • 2 x LEDs for Application processor statuses
Sensors	• Ambient light sensor • Accelerometer • Proximity sensor
Buttons	• Power button
OS	Android 13
Certifications	PCI PTS 6.2
Dimensions (LxWxH), mm	78 x 89.5 x 15.6
Weight, g	140g
Environmental	Operating: -20°C to +45°C / 35 to 85% RH Storage: -20°C to +70°C / 20 to 90% RH
Power Supply	• 5V through USB-C • Wireless charging • Docking connector

Device Operation

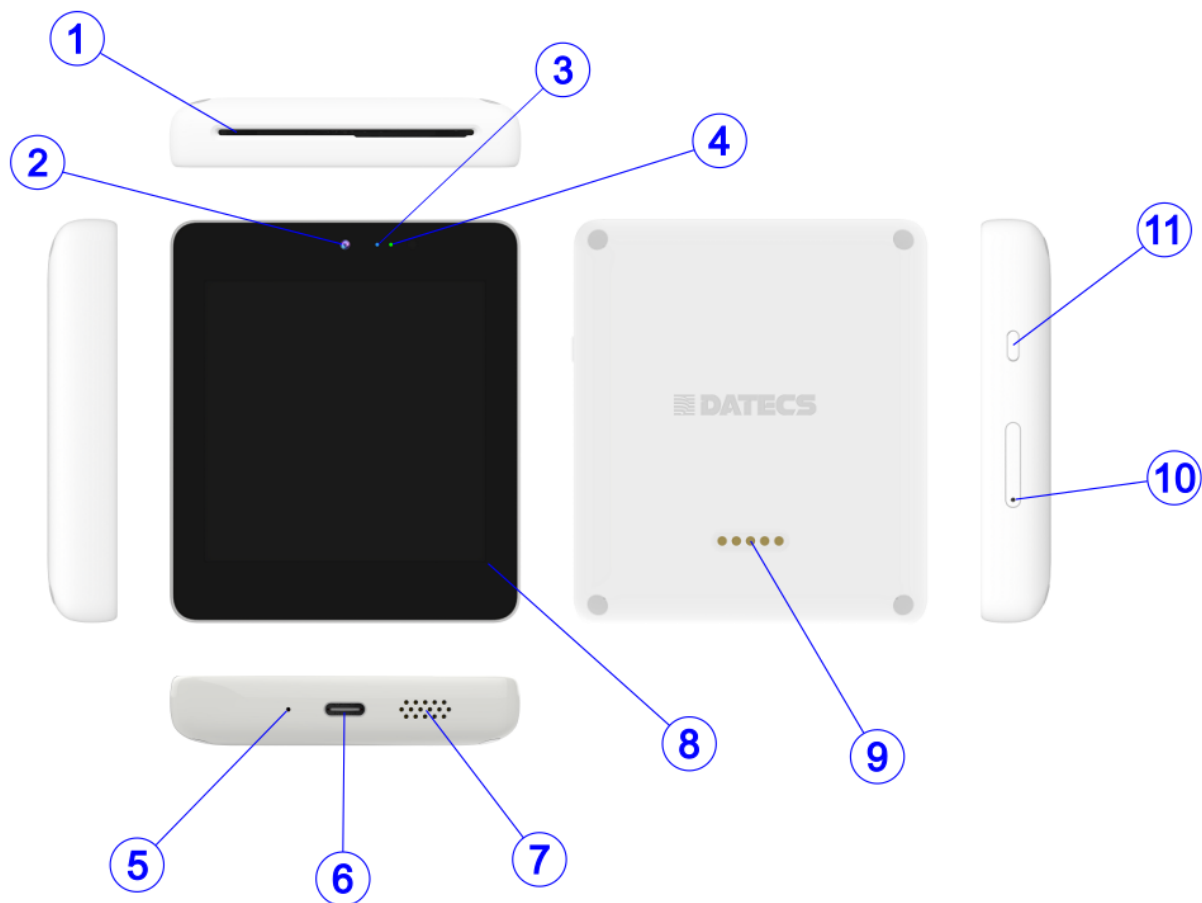


Figure 2

1. Smart Card Reader
2. Front Camera
3. LED Status Application processor
4. LED Status Security processor
5. Microphone
6. Communication Port (USB)
7. Speaker
8. Main display and touch screen/Contactless Card Reader
9. UART Connector
10. SIM Card Holder
11. On/Off Button

GETTING STARTED

Setup

BlueCash-05 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 connector and connect special service cable and programming board. "APPLICATION DOWNLOAD MODE" and "SYSTEM MODE" are accessible only through USB connector.

APPLICATION DOWNLOAD MODE

To enter in application download mode on the BlueCash-05, 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 BlueCash-05, 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":

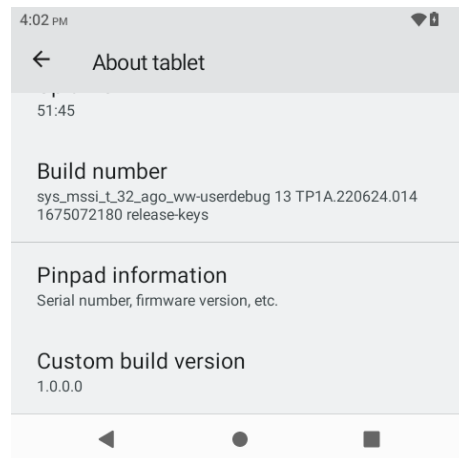


Figure 3

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”:

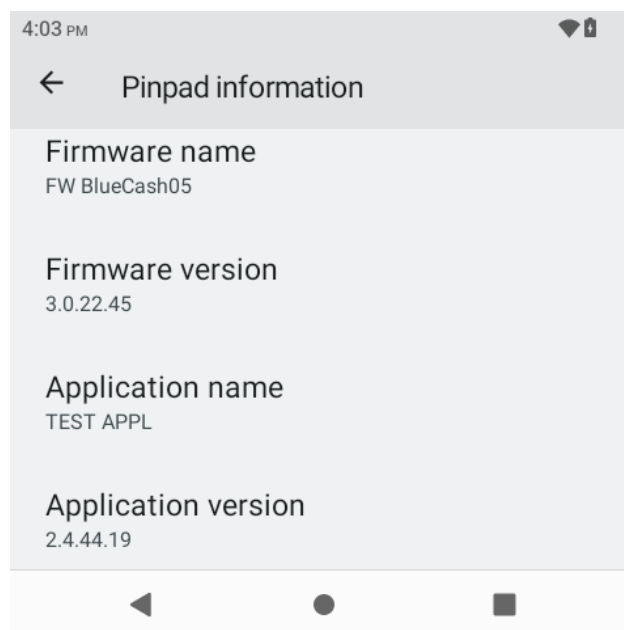


Figure 4

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 BlueCash-05. 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.

Contactless Card Reading

The contactless card transaction procedure can vary depending on the application loaded on the BlueCash-05. 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 BlueCash-05 display contactless logo ([Figure 6](#)).
2. Remove the card when the display indicates the transaction is completed.



Figure 6

Troubleshooting Guidelines

This chapter lists typical examples of malfunction you may encounter while operating your BlueCash-05 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 BlueCash-05 units. If you are having problems operating your BlueCash-05 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 representative for assistance.



The BlueCash-05 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 service provider. Service conducted by parties other than authorized Datecs representatives may void any warranty.

Blank Display

When the BlueCash-05 unit display does not show correct or clearly readable information:

- Check the attached power supply.
- If the problem persists, contact your local Datecs 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 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 representative.

Maintenance and Cleaning

BlueCash-05 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 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 battery of BlueCash-05 please contact with your local Datecs 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 BlueCash-05 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.