



# DATECS BluePad-50 Plus MSR Handheld PIN Pad Device User Guide

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**DATECS BluePad-50 Plus MSR Handheld PIN Pad Device**



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BluePad-50 Plus MSR User Guide

## FCC NOTICE

### FCC ID: YRW-BP50PLUSM

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 the 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.

### **Specific Absorption Rate (SAR) information:**

This BluePad-50 Plus MSR 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 evaluations 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 the USA (FCC) is 1.6 W/kg averaging over one gram of tissue. Device types: BluePad-50 Plus MSR has also been tested against this SAR limit. This device was tested for typical body-worn operations with the back of the BluePad-50 Plus MSR kept 0mm 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 BluePad-50 Plus MSR. 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 BluePad-50 Plus.

### **Audience**

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

### **Organization**

This guide is organized as follows:

- **Chapter 1, Overview.** Provides an overview of the BluePad-50 Plus.
- **Chapter 2, Specifications.** Discusses power requirements and dimensions of BluePad-50 Plus, etc.
- **Chapter 3, Setup.** Explains setup and installation of BluePad-50 Plus. This chapter tells how to establish connections with other devices.
- **Chapter 4, Maintenance and Cleaning.** Explains maintenance of BluePad-50 Plus.
- **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 BluePad-50 Plus, refer to the following set of documents:

- BluePad-50 Plus Physical Security Features
- BluePad-50 Plus Firmware API Specifications
- BluePad-50 Plus 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
<u>Blue</u>	Text in blue indicates terms that are cross references.	See <u><a href="#">Guide Conventions</a></u>
<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.	BluePad-50 Plus 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 BluePad-50 Plus device.

### BluePad-50 Plus

The BluePad-50 Plus unit is a handheld PIN pad with an integrated smart, magnetic stripe and contactless card reader an optional wireless connectivity designed to be used with a variety of PDA's, offering advanced security and smart card processing capabilities. BluePad-50 Plus supports both symmetric encryption algorithms (DES, 3DES, and AES) and asymmetric encryption (RSA). 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 BluePad-50 Plus sleek and stylish ergonomic.

- Datecs ships variants of BluePad-50 Plus unit for different markets. Your unit may have a different configuration, such as a Bluetooth module, etc. However, the basic processes described in this guide remain the same, regardless of configuration.

	<h3>Features At a Glance</h3> <ul style="list-style-type: none"> <li>• Delivers <b>power</b> and <b>usability</b> in a <b>small convenient</b> hand-held design.</li> <li>• <b>Security</b> architecture meets specifications for PIN-entry devices (PED) and sophisticated <b>file authentication</b>.</li> </ul> <p>The BluePad-50 Plus provides the right combination of features and functions in a small stylish device that fits in the palm of your hand. This includes a magnetic stripe card reader, contactless card reader, smart card reader, an integrated PIN pad, and an optional wireless connectivity.</p>
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## Features and Benefits

### Exceptional Ease of Use

- Bold, ergonomic design is sleek, stylish, and lightweight for conveniently handing the unit to the consumer for PIN entry.
- Intuitive interface and large, colored control keys simplify training and reduce support requests.
- 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) and key management schemes, including single and 3DES Master Session, single, and 3DES Derived.

### Strong Feature Set

- Primary smart card reader support for synchronous and asynchronous smart cards.
- Support for international character sets and Unicode standard.
- BluePad-50 Plus has received EMV Level 1 approval for smart card solutions.
- BluePad-50 Plus has received EMV Level 2 approval for smart card solutions.
- BluePad-50 Plus has received PCI PTS 6.0 SRED Security Certification.

### Device Specifications

### Device Operation



Figure 1

1. Communication port (USB)
2. Contactless reader
3. Magnetic stripe reader

4. Contactless transaction status LEDs indication
5. LCD Display
6. On/Off button
7. Charging and communication (UART) pads
8. Keypad
9. Chip card reader

## GETTING STARTED

BluePad-50 Plus has rechargeable lithium-ion polymer battery. The battery can be charged from USB power adapter connected to USB port or when is attached to Docking station.

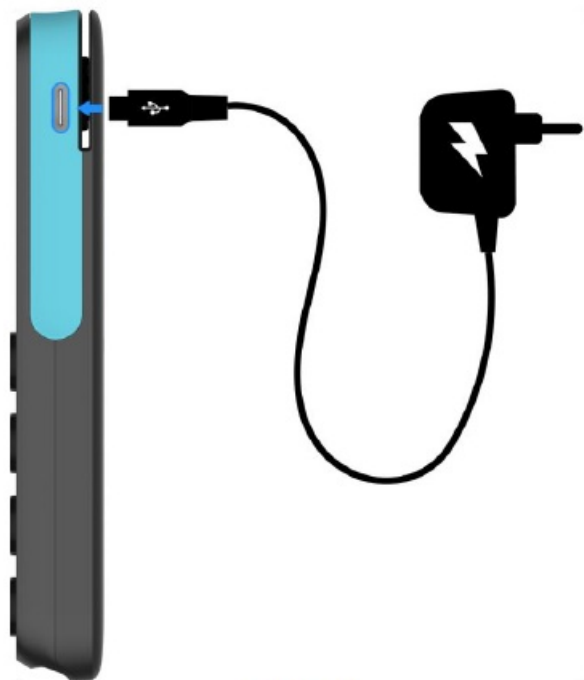


Figure 2

- The battery of BluePad-50 Plus is nonremovable, for replacement please see “Main battery replacement”.

### Setup

When a BluePad-50 Plus is switched on and the Power button is kept pressed, on the display will be shown the name and the version of the Secure Boot Loader and the firmware. Service personnel can access two different system modes: “System Mode” and “Application Download Mode”.

### SYSTEM MODE

To enter System mode on the BluePad-50 Plus, button 2 has to be maintained pressed while switching on the PINPAD. A characteristic sound is played and on the display appears the “SYSTEM MODE” menu.

The following keyboard buttons can be used in service mode:

- ① : move through the list one position upwards
- ② : move through the list one position downwards
- ⏻ : selection of the active option
- ⏹ : return to previous level or exit the service mode

The following menu options can be selected in service mode:

- INFO VERSION
- INFO HARDWARE
- INFO KEYS
- TEST DISPLAY
- TEST KEYBOARD
- TEST SCR
- COMMUNICATION MODE

## INFO VERSION

Shows the serial numbers and the versions of the detached program modules:

- DEV SN – BluePad-50 Plus serial number
- USIP SN – USIP serial number
- USIP VER – USIP version
- ISBL VER – USIP Boot loader version
- HAL VER – USIP Hardware Abstraction Layer (HAL) version
- LOAD VER – Secure Boot Loader (SBL) version and name
- FW VER – Firmware version and name
- PROM VER – Prompts version
- APPL VER – Application version and name
- PKFA VER – Version of the public key used for firmware authentication
- PKAA VER – Version of the public key used for application authentication
- PKKA VER – Version of the public key used for manufacturing keys authentication

## INFO HARDWARE

Gives information about the status of the following hardware properties:

- **BATT:** indicates the voltage of the battery
- **VBUS:** indicates if external power supply is plugged in
- **CHARGE:** indicates if the battery is charging

## INFO KEYS

Shows the version of the following keys: AIK keys version

## TEST DISPLAY

Performs a display test. Initially, a blank screen is displayed. When OK button is pressed once, completely black screen is displayed. When OK button is pressed twice, the checkmate background is displayed, its contrast can be changed with the UP and DOWN buttons. To exit the test at any time the button C has to be pressed.

## TEST KEYBOARD

Performs a keyboard test. At first, the symbols of all the keys appear on the display. Pressing a key makes its corresponding symbol to disappear. The test ends when all the buttons have been pressed.

## TEST MSR

Performs magnetic card reading test. The test waits for a card to be inserted. On a successful card reading, the tracks data are displayed.

## TEST SCR

Performs smart card reading tests. On the display appears a menu with the supported options. To perform a test, insert a card in the card slot and select the corresponding menu option:

1. **RESET**: performs card reset and returns the ATR
2. **GET CHALLENGE**: calls the command GET CHALLENGE and returns a random number

## KEYS DOWNLOAD

To download the Acquirer Initial Keys (AIK) the PINPAD has to be set in Keys Download Mode, in which it exchanges information in a secure way through the USB interface using a proprietary communication protocol. To exit the mode the "C" button has to be pressed.

## CLEAR DEA KEYS

Deletes the customer's DEA key hierarchy.


## EXIT

Exit the service menu forwarding the control to the application.

## APPLICATION DOWNLOAD MODE (Firmware/Application update via USB interface)

To enter application download mode on the BluePad-50 Plus, button **1** has to be maintained and pressed while switching on the PINPAD. A characteristic sound is played and on the display appears the name and version of the Secure Boot Loader. When application download is initiated, the display is shown the progress in percentages

of the downloading process. To exit the mode, press  or Power buttons. The Application download process

shall not be interrupted to prevent memory corruption. If the buttons  or Power are pressed during the downloading process, the application integrity checking will fail on booting up and the process will have to be repeated.

## COMMUNICATION PARAMETERS

The default USB VC serial port communication parameters are the following:

- 115200bps
- 8bit
- 1 stop bit
- no parity

## SETTINGS IN APPLICATION(DEPENDS OF THE APPLICATION)

- RS SPEED 115200\*
- USB MODE DISABLE\*/DEVICE/HOST
- BLUETOOTH Settings
- Mode: ENABLE/DISABLE
- ADDR: MAC ADDRESS of the Bluetooth
- NAME: Bluetooth name
- PASS: Bluetooth password
- PAIR: DISCOVERABLE/HIDDEN
- AUTO: ENABLE/DISABLE
- VER: Bluetooth firmware version







- MASTER RESET: return to default settings FW UPDATE
- AUTO OFF 60min\*/120min/180min/240min/DISABLE/1min//5min/10min/ 15min/30min/45min

## OPERATING MODE

To start Operating mode on the BluePad-50 Plus, quick press the power button. A characteristic sound is played and on the display appears the clock and battery status. For entering in “SYSTEM MODE”, need to be pressed button **3**.





The following keyboard buttons can be used in System mode:

-  : move through the list one position upwards
-  : move through the list one position downwards
-  : selection of the active option
-  : return to previous level or exit the service mode

### Display

The device is equipped with 2” inch color display.

### Display Indications

-  • Battery indication for a discharged battery
-  • Battery indication for fully charged battery
-  • Outside power from USB cable – “Plug”
-  • Battery is charging from UBS cable or Power station – “Flash”
- “USB” – connection with USB

### Bluetooth Pairing

Turn on BluePad-50 Plus and Commercial off-the-shelf/smart device with Bluetooth capabilities. In smart device enter to Bluetooth menu and locate BluePad-50 Plus (used Bluetooth name in Air is BluePad-50 Plus serial number). Press on pair and confirm if passkey is same on both devices.

### Bluetooth Pairing with Apple device by using “Scan to Pairing”

1. Turn on BluePad-50 Plus (hold On/Off button, around ~2sec).
2. Run the iOS application, go to the settings “Scan barcode”:

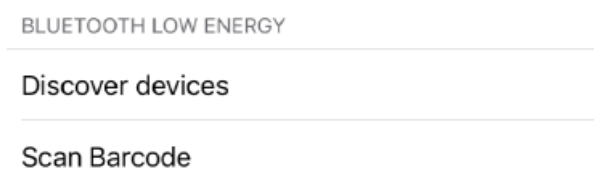


Figure 3

Then the camera of the phone will be activated.

3. Scan the serial number on the label of BluePad-55 with the back camera.

4. Then of the screens on both devices will be shown the “Pairing Request”.

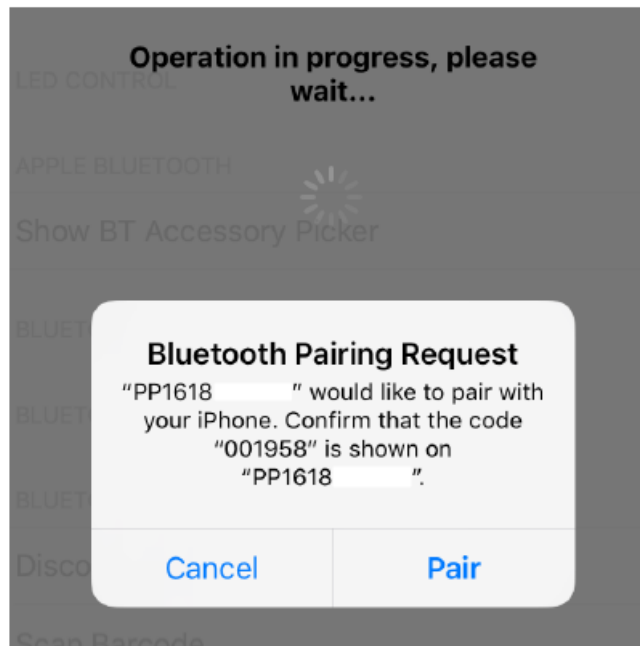


Figure 4

5. Please confirm if the passkey is the same on both devices.

### Update Firmware and Application using Firmware API

Loaded Firmware and Applications on BluePad-50 Plus can be updated via an Application that is using Firmware API. Pair BluePad-50 Plus to another device via External Interfaces (Please refer to device specification section “Connectivity”). Run the Application\* on COTS (smart device) and press “Update device firmware”.

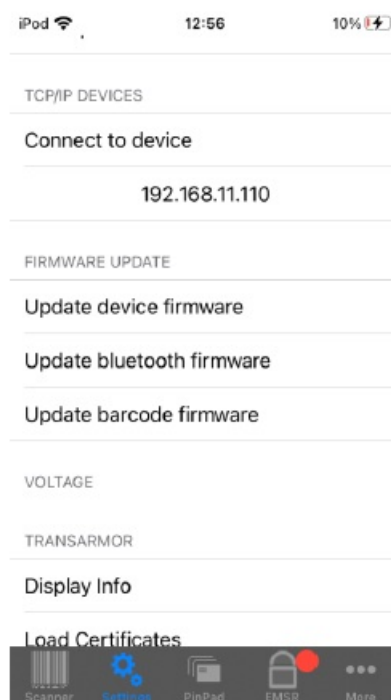


Figure 5

- In order to use the BluePad-50 Plus functions with COTS(smart device), special software must be used. Please contact your distributor in order to get the latest demo application and SDK.

### Magnetic Card Reader Use

The magnetic card transaction procedure can vary depending on the application loaded on the BluePad-50 Plus.

Verify the proper procedure with your application provider before performing a magnetic card transaction.

### **To Conduct a Magnetic Credit/Debit Card Transaction**

1. Position a magnetic card as shown in Figure 6.
2. Insert it into the MS card reader slot and then quickly swipe it.
3. Hand BluePad-50 Plus to the customer for signature or PIN entry



Figure 6

### **Smart Card Reader Use**

The smart card transaction procedure can vary depending on the application loaded on the BluePad-50 Plus. 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.
2. Insert it into the ICC card reader slot in a smooth, continuous motion until it seats firmly.
3. Hand BluePad-50 Plus to the customer for PIN entry
4. Remove the card when the display indicates the transaction is completed.



Figure 7

- 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 BluePad-50 Plus. Verify the proper procedure with your application provider before performing a contactless card transaction. In order to use the Contactless card reading function, special software must be used. Please contact your distributor in order to get the latest demo application and SDK.

### **To Conduct a Contactless Credit/Debit Card Transaction**

1. Place a contactless card to shown on the BluePad-50 Plus display contactless logo.
2. Remove the card when the display indicates the transaction is completed.



Figure 8

## Troubleshooting Guidelines

This chapter lists typical examples of malfunctions you may encounter while operating your BluePad-50 Plus 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 BluePad-50 Plus units. If you are having problems operating your BluePad-50 Plus 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 BluePad-50 Plus 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 BluePad-50 Plus unit display does not show correct or clearly readable information:

- Check battery power.
- If the problem persists, contact your local Datecs service provider.

### Keypad Does Not Respond

If the keypad 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 Magnetic Card Reader

- Perform a test transaction using one or more different magnetic stripe cards to ensure the problem is not a

defective card.

- Ensure that you are swiping cards properly (see Magnetic Card Reader Use).
- If the problem persists, contact your local Datecs representative.

### **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.

Due to risk of shock or damage, do not use the BluePad-50 Plus unit near water, including a bathtub, wash bowl, kitchen sink or laundry tub, in a wet basement, or near a swimming pool.

### **Maintenance and Cleaning**

BluePad-50 Plus 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 keypad or display.

### **Main battery replacement**

To replace the main battery of BluePad-50 Plus please contact with your 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 BluePad-50 Plus problems, product service, and repair information, contact your local Datecs representative or service provider.


- International – Contact your local Datecs distributor

### **Service Returns**

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

return, or replacement.

**Documents / Resources**

	<p><a href="#">DATECS BluePad-50 Plus MSR Handheld PIN Pad Device</a> [pdf] User Guide</p> <p>BluePad-50 Plus MSR Handheld PIN Pad Device, BluePad-50 Plus MSR, Handheld PIN Pad Device, PIN Pad Device, Pad Device</p>
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**References**

- [DATECS LTD](#)