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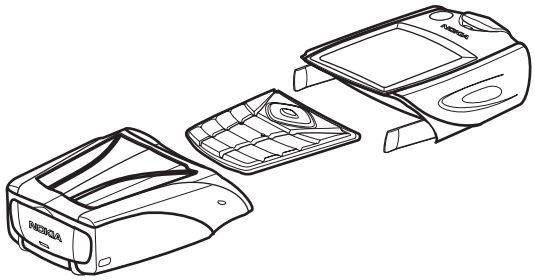
Nokia Mobile RFID Kit for Nokia 5140

User's Guide



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FOR YOUR SAFETY

Read these simple guidelines. Breaking the rules may be dangerous or illegal. Further detailed information is given in this manual.

QUALIFIED SERVICE

Only qualified personnel may repair this device.

WATER-RESISTANCE

Your device is not water-resistant. Keep it dry.

CONNECTING TO OTHER DEVICES

When connecting to any other device, read its user's guide for detailed safety instructions. Do not connect incompatible products.

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1. Introduction

Nokia Mobile RFID Kit enables you to use touch to automate different tasks in your Nokia 5140 phone. By touching Radio Frequency Identification (RFID) tags, you can launch predefined functions in the phone (such as call dialling and web browsing) and store time stamped data in the phone.

Nokia Mobile RFID Kit contains the following:

- Two Nokia Xpress-on™ RFID Reader Shells
- Two Java™ applications called Shortcut and RecordData
- Tags to identify objects and tasks

Your device and its enhancements may contain small parts. Keep them out of reach of small children.

Nokia Mobile RFID Kit is only compatible with the Nokia 5140 phone that is available separately. For information about the Nokia 5140 phone, see www.nokia.com.

Note: This User's Guide contains information and instructions for Nokia Mobile RFID Kit. For instructions on how to use your Nokia 5140 phone, see the Nokia 5140 user's guide.

For examples of how you can use your Nokia Mobile RFID Kit, see www.nokia.com/rfid.

■ Introduction to RFID

RFID technologies use radio waves to automatically identify individual objects. The most common method of identifying objects using RFID is to store a serial number that identifies the object on an RFID tag (also called an RFID transponder), and attaching the tag to the object.

The RFID tag is able to transmit the information it contains to an RFID reader device. The RFID reader converts the radio waves returned from the RFID tag into a format that can then be passed on to an application in the phone.

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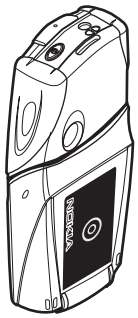
To transmit data from the RFID tag to the RFID reader, Nokia Mobile RFID Kit uses the radio frequency of 13.56 MHz, which is the most widely used globally available frequency for RFID.

■ Nokia Xpress-on™ RFID Reader Shell



Nokia Xpress-on™ RFID Reader Shell contains the RFID reader that enables you to read tags with your Nokia 5140 phone. The RFID reader is located inside the lower part of the shell (dark area in the picture).

The Xpress-on™ RFID Reader Shell also stores the Shortcut and RecordData applications, as well as a Cover browser application. When you install the Xpress-on™ RFID Reader Shell, the Cover browser application is automatically downloaded to the phone, after which you can use it to download the other two applications.

Both of the Xpress-on™ RFID Reader Shells in Nokia Mobile RFID Kit contain all three applications.

Note: The Xpress-on™ RFID Reader Shell is only compatible with the Nokia 5140 phone. Do not try to use it with other phones. Do not try to open the Xpress-on™ RFID Reader Shell.

The RFID reader in the Xpress-on RFID Reader Shell takes its power from the phone battery. Note that using the RFID reader may drain the phone battery faster.

■ Shortcut application and RecordData application

The Shortcut and RecordData applications are used for managing tag-related information and functions in your Nokia 5140 phone.

- The Shortcut application enables you to define functions that touching a tag will launch in your Nokia 5140 phone.

  You can define that when you touch a tag, the phone either makes a phone call to a predefined number, sends a text message using Short Message Service (SMS) to a predefined number, or connects to a predefined web site over a General Packet Radio Service (GPRS) connection.

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- The RecordData application enables you to store tag-specific information in the application each time you touch a tag.

  For example, in order to keep track of your travel expenses, you can attach a tag to the dashboard of a car, and store time stamped records of the beginning and ending of a journey to track mileage.

In both applications, data is stored in the phone memory.

■ Tags

The tags provided with Nokia Mobile RFID Kit are used to identify objects and tasks.

All tags have a unique serial number that the Shortcut and RecordData applications use to identify the tags. When taking a tag into use with an application, you associate the tag serial number with an object or task, depending on which application the tag is to be used with.

You can use each tag with one or both of the two applications. This means that depending on which application is active in the phone, touching a tag can either launch a predefined task in the Shortcut application (such as making a phone call to a number you have specified) or make the RecordData application ask you to enter information that will be recorded for the tag.

Nokia Mobile RFID Kit uses non battery-powered (passive) tags. Only tags that are compliant with the MIFARE® UltraLight protocol can be used.

Nokia Mobile RFID Kit contains two tags. If you need more tags, please contact your vendor for MIFARE® UltraLight tags.

Note: The tags may set off the Electronic Article Surveillance (EAS) alarms used, for example, for theft-protection in shops.

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2. Installation

■ Installing the Reader Shell and downloading the applications

When taking Nokia Mobile RFID Kit into use, first install the Xpress-on™ RFID Reader Shell to your Nokia 5140 phone.

When the Xpress-on™ RFID Reader Shell is installed, the Cover browser application is automatically downloaded from the shell to the phone. You can then use the Cover browser application to download the Shortcut and RecordData applications.

Note: Before removing the phone cover, always switch off the power and disconnect the charger and any other device. Avoid touching electronic components while changing the covers. Always store and use the device with the covers attached.

To install Reader Shell and download applications:

1. Remove the phone cover, and install the upper and lower part of the Xpress-on™ RFID Reader Shell as instructed in the user guide of your Nokia 5140 phone.
2. Switch on the phone.

   The Cover browser application is automatically downloaded into the **Collection** submenu of the **Applications** menu in the phone. Downloading may take a few minutes.
3. Press **Start** to start the Cover browser application.
4. To download the Shortcut or the RecordData application from the shell to the phone, select **Shortcut** or **RecordData** and press **Select**.

   The selected application is downloaded into the **Collection** submenu in the phone. Downloading may take a few minutes.

If you also wish to download the other application from the shell to the phone, start the Cover browser application in the **Collection** submenu and follow the instructions in step 4.

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Checking the phone settings

Ensure that your Nokia 5140 phone has the correct settings for using SMS and GPRS.

For the availability of the SMS or GPRS service, related fees, and appropriate settings, contact your network operator or service provider.

The vibrating alert should be on in the active profile in the phone.

■ Placing tags

Having installed Xpress-on™ RFID Reader Shell to your Nokia 5140 phone, you can start placing tags.

You can attach tags, for example, by using double-sided adhesive tape. You can also place tags under any non-conductive material, such as glass, plastic or wood.

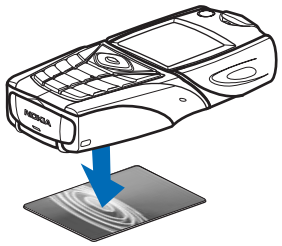
Do not place tags on metal or other conductive surfaces, as it may prevent the RFID reader from being able to read the tags.

3. Basic functions of Nokia Mobile RFID Kit

■ Touching tags with RFID reader

The RFID reader is located on the back of the lower part of the Xpress-on™ RFID Reader Shell, inside the area marked with the ◎ graphic sign.

When using the RFID reader, touch the tag with that area at close proximity. The reading range is typically 0-3 cm.



■ Starting an application

Note: If neither the Shortcut nor the RecordData application is active when you touch a tag with the RFID reader, the phone automatically starts the one that was last active in the phone.

To manually start an application:

1. Press **Menu**.
2. Scroll to **Applications** and press **Select**.
3. Select **Collection** and press **Select**.
4. Select **Select application** and press **Select**.
5. Select **Shortcut** or **RecordData** and press **Open**.

   Please touch tag is displayed.

Note: If you receive an incoming call while using an application, you can answer the call normally and continue using the application after ending the call.

You can view basic information about each application by pressing **Options** in the *Please touch tag* view, selecting **About** and pressing **Select**.

■ Closing an application

To close an application, either press **Exit** in the *Please touch tag* view, or press .

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■ Changing application language

You can change the user interface language of the Shortcut and RecordData applications by changing the phone language in your Nokia 5140 phone.

The supported languages are English, German, French, Spanish, Italian, Finnish and Swedish. If an unsupported language is selected as the phone language, the default language English is used for the Shortcut and RecordData applications.

4. Using Shortcut application

■ Launching a shortcut

Touching a tag with the RFID reader launches a shortcut defined in the Shortcut application.

To launch a shortcut:

1. Touch the tag with the RFID reader.

   The phone function defined for the tag is displayed.

   Note: If the tag does not have a shortcut defined for it yet, define the shortcut by first selecting a phone function on the list, and then entering the required information. For detailed information, see step 5 in section Defining a shortcut.

2. When the phone asks you for a confirmation, press **Yes**.

   Depending on the type of shortcut, the phone either makes a phone call or sends an SMS to the predefined phone number, or connects to the predefined web site over a GPRS connection.

   When connecting to a web site, press **Yes** when the phone asks you for a second confirmation.

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■ Defining a shortcut

You can define shortcuts for new tags, as well as tags that already have a shortcut defined in the Shortcut application. In the latter case, the old shortcut information and all related log data is deleted.

To define a shortcut:

1. In the *Please touch tag* view, select **Options**.
2. Select **Define tag** and press **Select**.

   Touch to define is displayed.
3. Touch the tag with the RFID reader.
4. Select the phone function **Call**, **Url** or **SMS** and press **Create**.
5. Define information for the tag in the fields that appear.

   You can move between fields by using the arrow keys, and select a field for editing by pressing **Edit**. Having edited a field, press **OK**.

   - **Call** - enter the name of the call recipient and the number that the phone call is to be made to.
   - **Url** - enter the name for the URL link and the URL.
   - **SMS** - enter the name of the SMS recipient, the SMS text content, and the number that the SMS is to be sent to.

   When defining phone numbers for the **Call** and **SMS** functions, you can also use a phone number defined in your phone's **Contacts**:

   1. When editing the phone number field, press **Options**.
   2. Select **Search** and press **Select**.
   3. Select a contact on the list and press **Select**.
   4. When the phone number is displayed, press **OK**.

   If you later edit or delete the contact, this does not affect the information stored in the Shortcut application in any way.
6. Select **Save** and press **OK**.

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Note: You can also edit the shortcut information later.

Select **Shortcuts** in the *Please touch tag* view, select the shortcut and press **Edit**. Edit the fields, select **Save** and press **OK**. When editing the shortcut information, if you wish to restore the information in the fields to what it was before editing, press **Options**, select **Reset** and press **Select**.

If you wish to change the phone function for the shortcut, you must define the shortcut again.

■ Viewing the log

In the Shortcut application log, you can view the phone calls that have been made, the SMS messages that have been sent and the web sites that have been connected to through the application. Cancelled attempts are also logged.

To view the log:

1. In the *Please touch tag* view, select **Options**.
2. Select **Log** and press **Select**.

   A list of the events logged for the tag is displayed. Events are listed in chronological order, starting with the most recent event.

   If you wish to delete all logged events, press **Options**, select **Delete all** and press **Yes**.
3. To view detailed information about a logged event, select the event on the list and press **Details**.

■ Deleting a shortcut

To delete a shortcut:

1. In the *Please touch tag* view, select **Shortcuts**.
2. Select the shortcut and press **Options**.
3. Select **Delete** and press **Select**.

   If you wish to delete all shortcuts, select **Delete all**.

   Alternatively, you can launch the shortcut by selecting **Launch** and pressing **Select**, and pressing **Yes** when the phone asks you for a confirmation. In this case step 4 is skipped.

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4. When the phone asks you for a confirmation, press **Yes**.

Information about the shortcut and all related log data is deleted.

5. Using RecordData application

■ Recording data

Touching a tag with the RFID reader records time stamped information for the tag in the RecordData application.

Note: When touching a new tag, you must also define information about the tag in the RecordData application.

To record data:

1. Touch the tag with the RFID reader.
2. *Optional*: If the tag is not defined in the RecordData application yet, specify a name and record type for the tag.
   1. Specify a name for the tag in the **Name** field. Press **Edit**, enter the name and press **OK**.
   2. Under **Record type**, select the record type for the tag and press **Select**.

      The record type defines what kind of information the application asks you to enter when you read the tag.

      - **None** - When you read a tag, the application does not ask you for any input, it only records the time you touched the tag.
      - **Text** - When you read a tag, the application asks you to enter input which can be text and/or numbers.
      - **Number** - When you read a tag, the application asks you to enter input as numbers.
3. Depending on the record type you selected, do one of the following:
   - If you selected record type **None**, select **Save** and press **OK**. The tag information and the recorded data are stored in the application and step 4 is skipped.

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- If you selected record type **Text** or **Number**, select **Continue** and press **OK**.

4. *Optional*: Enter information for the recorded data. First press **Edit**, enter the information and press **OK**. Then select **Save** and press **OK**.
   - If the record type is **Text**, you can enter both text and numbers. You can use all the message typing functions available in the Nokia 5140 phone (such as the dictionary). Press **Options** and use the functions as instructed in the user guide of your Nokia 5140 phone.
   - If the record type is **Number**, you can only enter numbers. When entering a number, you can enter a decimal point by pressing .

   The tag information and the recorded data are stored in the application.

You can later edit the information you entered for the recorded data. See section Editing recorded data.

■ Viewing recorded data

You can either view recorded data for a specific tag, or view all recorded data stored in the RecordData application.

To view recorded data for a tag:

1. In the *Please touch tag* view, select **Tags**.
2. Select the tag and press **Records**.

   A list of all records for the tag is displayed.
3. Select a record and press **Details**.

   Information about the tag and the input you entered when reading the tag is displayed. Records are listed in chronological order, starting with the most recent record.

To view all recorded data in RecordData application:

1. In the *Please touch tag* view, select **Options**.
2. Select **Log** and press **Select**.

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A list of all recorded data in the RecordData application is displayed. Records are listed in chronological order, starting with the most recent record.

You can also view detailed information about a record by selecting the record and pressing **Details**.

■ Editing recorded data

To edit recorded data:

1. In the *Please touch tag* view, select **Tags**.
2. Select a tag and press **Records**.
3. Select a record and press **Options**.
4. Select **Edit record** and press **Select**.
5. Press **Edit**, edit the information and press **OK**.

   If you also wish to edit the name and record type of the tag, you must edit the tag information. See section Editing tag information.
6. Select **Save** and press **OK**.

■ Deleting recorded data

To delete recorded data for a tag:

1. In the *Please touch tag* view, select **Tags**.
2. Select a tag and press **Records**.
3. Select a record and press **Options**.
4. Select **Delete** and press **Select**.

   If you wish to delete all recorded data for the tag, select **Delete all**.
5. When the phone asks you for a confirmation, press **Yes**.

To delete all recorded data in the RecordData application:

1. In the *Please touch tag* view, select **Options**.
2. Select **Log** and press **Select**.
3. Press **Options**.
4. Select **Delete all** and press **Select**.

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5. When the phone asks you for a confirmation, press **Yes**.

■ Editing tag information

To edit tag information:

1. In the *Please touch tag* view, select **Tags**.
2. Select the tag and press **Options**.
3. Select **Edit tag** and press **Select**.
4. Edit the name and record type of the tag.

   For detailed information, see step 2 in section Recording data.
5. Select **Save** and press **OK**.

■ Deleting a tag

To delete a tag:

1. In the *Please touch tag* view, select **Tags**.
2. Select a tag and press **Options**.
3. Select **Delete** and press **Select**.

   If you wish to delete all tags, select **Delete all**.
4. When the phone asks you for a confirmation, press **Yes**.

Information about the tag and all related record data is deleted.

6. Care and maintenance

Your device is a product of superior design and craftsmanship and should be treated with care. The suggestions below will help you protect your warranty coverage.

- Keep the device dry. Precipitation, humidity and all types of liquids or moisture can contain minerals that will corrode electronic circuits.
- Do not use or store the device in dusty, dirty areas. Its moving parts and electronic components can be damaged.

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- Do not store the device in hot areas. High temperatures can shorten the life of electronic devices, damage batteries, and warp or melt certain plastics.
- Do not store the device in cold areas. When the device returns to its normal temperature, moisture can form inside the device and damage electronic circuit boards.
- Do not attempt to open the device other than as instructed in this guide.
- Do not drop, knock, or shake the device.
- Do not use harsh chemicals, cleaning solvents, or strong detergents to clean the device.
- Do not paint the device. Paint can clog the moving parts and prevent proper operation.
- Use a soft, clean, dry cloth to clean any lenses (such as the RFID sensor).

If any device is not working properly, take it to the nearest authorised service facility for service.