M24SR-DISCOVERY

Discovery kit for the M24SR series
Dynamic NFC/RFID tag

Data brief

Features

- Ready-to-use printed circuit board (PCB) including:
  - M24SR64-Y Dynamic NFC/RFID tag
  - 31 mm x 30 mm 13.56 MHz double layer inductive antenna etched on the PCB (ANT14)
  - STM32F103RGT6 64LQFP 32-bit microcontroller, with 1Mbytes of Flash memory
  - LCD Color Screen (320*200 pixels)
  - Different color LEDs
  - USB microB connector for board powering
  - JTAG connector for microcontroller firmware upgrade and debug
  - Joystick for menu selection

- M24SR-DISCO-PREM specific features:
  - Bluetooth module with audio outputs connected to Jack 3.5
  - Headset

Table 1. Device summary

<table>
<thead>
<tr>
<th>Reference</th>
<th>Order code</th>
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<tbody>
<tr>
<td>M24SR-DISCOVERY</td>
<td>M24SR-DISCO-STD</td>
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<td>M24SR-DISCO-PREM</td>
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Figure 1. M24SR Discovery board (top side, Premium edition)

Figure 2. M24SR Discovery board (back side, Premium edition)
Description

The M24SR-DISCOVERY is a demonstration kit to evaluate the features and capabilities of the M24SR series and is based on the M24SR64 device. Two versions of this kit are available: the Standard Edition and the Premium Edition.

The Premium Edition includes all of the Standard edition features, plus a headset and a Bluetooth module to demonstrate the convenience to pair it with a smartphone via NFC.

The M24SR64 device is a dynamic NFC/RFID tag IC with a dual interface. It embeds a 64 Kbits EEPROM memory. It can be operated from an \( \text{I}^2\text{C} \) interface or by a 13.56 MHz RFID reader or an NFC phone.

The \( \text{I}^2\text{C} \) interface uses a two-wire serial interface, consisting of a bidirectional data line and a clock line. It behaves as a slave with respect to the \( \text{I}^2\text{C} \) protocol.

The RF protocol is compatible with ISO/IEC 14443 Type A and NFC Forum Type 4 Tag.

The board is powered through the USB bus. It also includes a microcontroller STM32F103 to drive the EEPROM via \( \text{I}^2\text{C} \) and the LCD screen via SPI bus.

The M24SR-DISCOVERY (MB1138) schematics, BOM, gerber files, drivers and firmware can be downloaded from [www.st.com](http://www.st.com).

**Figure 3. Block diagram**

1. Available only on premium edition.
1  Revision history

Table 2. Document revision history

<table>
<thead>
<tr>
<th>Date</th>
<th>Revision</th>
<th>Changes</th>
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<tbody>
<tr>
<td>06-Jan-2014</td>
<td>1</td>
<td>Initial release.</td>
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<tr>
<td>08-May-2015</td>
<td>3</td>
<td>Updated Figure 1: M24SR Discovery board (top side, Premium edition)</td>
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<td></td>
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<td>Updated Figure 2: M24SR Discovery board (back side, Premium edition)</td>
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