# EM MICROELECTRONIC

A COMPANY OF THE **SWATCH GROUP**

# EM NF4
# Development Board

## General Description

The EM NF4 Development Board EMDB415 is designed to offer the maximum flexibility to R&D engineers who would like to profit from all the benefits and all the functionalities provided by the NF4 dual interface NFC memory chip.

The EMDB415 includes a set of two development boards each equipped with a NF464DUAL IC in an SO8 package, mounted on an antenna. This gives instant access to the full feature set of the NF4 IC.

The first development board has PICC Class 1 size antenna (ISO10373-6). This is the typical size of a credit card format, used in access control applications. The second development board offers the smaller PICC Class 3 antenna size, more suitable for applications with smartphones.

A spy coil is in-built on the reverse side of the PCBs, providing access point to monitor the contactless communication exchanges between a PCD and the NF4 chip.

In case there is a need for customer specific antenna size it is also possible to remove zero Ohm connections R1 and R2 and attach a specific antenna into C2 holes. The position C1 is reserved for external resonant capacitor which would be required to tune external specific antenna to desired resonant frequency.

Both boards have an identical contact interface connector plug, providing access to the contact pins of NF464 device (DUAL mode).

## Tools & Support

EM Microelectronic provides additional Support Package which includes software and descriptions to facilitate development on NF4

l NF4 Product Family Datasheet

l Card Studio for Windows for RF communication via contactless reader, and example scripts

l NF4 Android application

l Application note with a C code library to emulate 2 wire serial interface using GPIO on a generic external CPU

To receive Support Package, please, contact EMdirect@emmicroelectronic.com

## EM NF4 Development Board Items

l EM NF4 Development Board PICC Class 1

l EM NF4 Development Board PICC Class 3
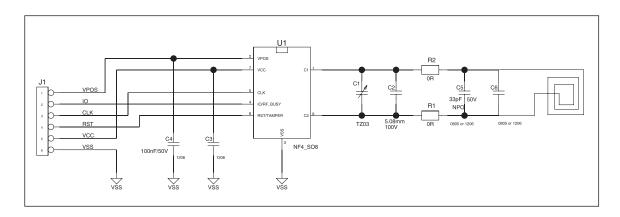
l 5 x NF464RF credit card size RF cards

## Ordering Information

To order, please, use following part number EMDB415+

## Interface Connector Description

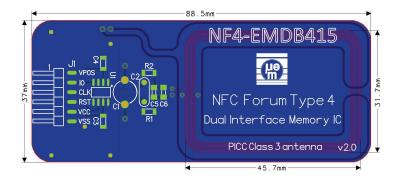| EMDB415 | | NF464 | |
|---|---|---|---|
| Nb. | Name | Nb. | Name |
| 1 | VPOS | 2 | VPOS / Field detector |
| 2 | IO | 4 | IO / RF BUSY |
| 3 | CLK | 5 | CLK |
| 4 | RST | 6 | RST / Tamper |
| 5 | VCC | 7 | VCC |
| 6 | VSS | 3 | VSS |

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**FACT SHEET | EMDB415**
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## EMDB415 Schematic



## EMDB415 PICC Class 3 antenna dimensions



## EMDB415 PICC Class 1 antenna dimensions