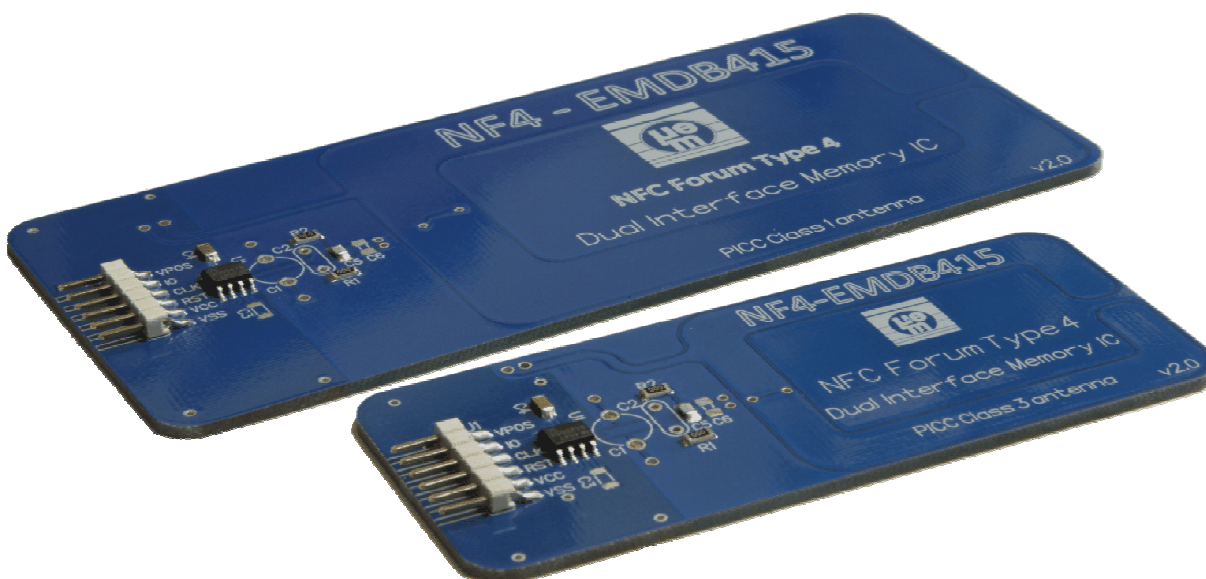# EMDB415 - EM NF4 Development Board

EM NF4 Development Board 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).

Interface connector description

EMDB415		NF464	
Nb.	**Name**	**Nb.**	**Pin 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

Tools and support

EM Microelectronic provides additional software and descriptions to facilitate development on NF4

- ❑ NF4 Datasheet
- ❑ Card Studio PC Software to communicate with the NF4 IC using a PC/SC compliant PCD reader
- ❑ Application note with a C code library to emulate 2 wire serial interface using GPIO on a generic external CPU

All related items which can be found in EM website link http://www.emmicroelectronic.com/products/rf-identification-security/nfc-high-frequency-ics/nf4
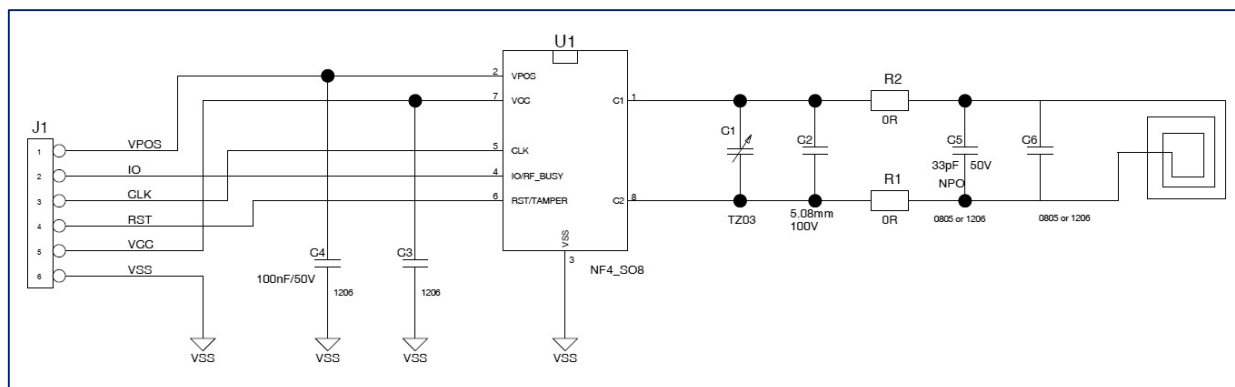
EM NF4 Development Board Items

- ❑ EM NF4 Development Board PICC Class 1
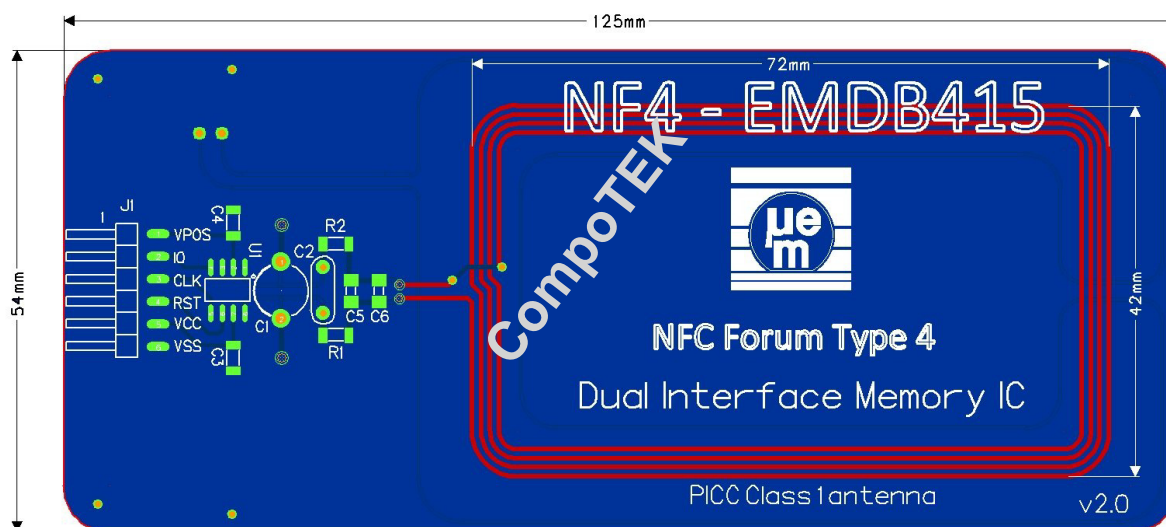- ❑ EM NF4 Development Board PICC Class 3

Ordering Information:

To order, please, use following part number **EMDB415+**

EMDB415 Schematic

EMDB415 PICC Class 1 antenna dimensions

EMDB415 PICC Class 1 antenna dimensions

www.emmicroelectronic.com