



Test report issued under the responsibility of:

EMITECH MONTPELLIER laboratory

MRA US-EU Designation Number: FR0006

Registration Number: 954701

Canadian CAB Identifier: FR0003

Registration Number: 4379C

# RF EXPOSURE TEST REPORT

KDB 447498 D01 V06

RSS-102 - Issue 6, December 2023

**Company** .....: **STMICROELECTRONICS (Rousset) SAS**  
**Address**.....: 190 AVENUE CELESTIN COQ  
13106 ROUSSET  
FRANCE

**Test item description** .....: **NFC extension board**  
**Trade Mark** .....:   
life.augmented  
**Manufacturer**.....: STMICROELECTRONICS  
**Model/Type reference**.....: X-NUCLEO-NFC13A1  
**FCC ID** :.....: YCPNFC13A1  
**IC** : .....: 8976A-NFC13A1  
**Ratings**.....: 5Vdc (2.5W, via Mini USB)

**Testing Laboratory** .....: **EMITECH MONTPELLIER laboratory**  
**Address**.....: 145 rue de Massacan  
34740 VENDARGUES  
FRANCE

**Report Reference No**.....: **RE-EVE-25G757-2A**  
**Test procedure** .....: FCC IC Certification  
**Diffusion**.....: M. MAURAN Julien  
**Applicant's name** .....: STMICROELECTRONICS (Rousset) SAS  
**Date of issue**.....: April 1, 2026  
**Total number of pages**.....: 10  
**Revision** .....: 0  
**Compiled by**.....: Célien FOUGEROLLE  
**Approved by (+ signature)** .....: David MONTAULON (Laboratory Manager)



*Duplication of this test report is only permitted for an integral photographic facsimile. It includes the number of pages referenced here above.  
This document is the result of testing a specimen or a sample of the product submitted. It does not imply an assessment of the conformity of  
the whole manufactured products of the tested sample.*

**REPORT INDEX:**

|                                                    |           |
|----------------------------------------------------|-----------|
| <b>1. GENERAL INFORMATIONS .....</b>               | <b>3</b>  |
| <b>2. REFERENCE DOCUMENT(S) .....</b>              | <b>4</b>  |
| <b>3. EQUIPMENT TECHNICAL DESCRIPTION .....</b>    | <b>5</b>  |
| 3.1. TEST CONDITIONS .....                         | 5         |
| 3.2. E.U.T. MARKING PLATE .....                    | 5         |
| 3.3. E.U.T. MODIFICATION(S) .....                  | 6         |
| 3.4. E.U.T. GENERAL VIEW .....                     | 6         |
| 3.5. E.U.T. ELECTRONIC BOARD .....                 | 6         |
| 3.6. E.U.T. MECHANICAL AND ELECTRICAL DESIGN ..... | 8         |
| 3.7. E.U.T. INPUT/OUTPUT PORTS .....               | 8         |
| 3.8. SUPPORTING EQUIPMENT USED DURING TEST .....   | 8         |
| 3.9. EUT RADIO SPECIFICATIONS .....                | 9         |
| <b>4. RF EXPOSURE .....</b>                        | <b>10</b> |

**REVISION HISTORY:**

| Revision | Date          | Modified pages | Modifications |
|----------|---------------|----------------|---------------|
| 0        | April 1, 2026 | /              | Creation      |

## 1. GENERAL INFORMATION

This document submits the results of Radio tests performed on the equipment **NFC extension board X-NUCLEO-NFC13A1** (denominated hereafter E.U.T.: equipment under test) according to document(s) listed in §2 of this test report.

| TESTING PROCEDURE AND TESTING LOCATION:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                |                                                                            |                         |     |                     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|----------------------------------------------------------------------------|-------------------------|-----|---------------------|
| <b>Testing Location</b> .....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                | EMITECH MONTPELLIER laboratory<br>& Open Area Test Site in SALINELLES (30) |                         |     |                     |
| <b>Address</b> .....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                | 145 rue de Massacan<br>34740 VENDARGUES<br>FRANCE                          |                         |     |                     |
| <b>Test procedure</b> .....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                | FCC IC Certification                                                       |                         |     |                     |
| <b>Tested by</b> .....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                | Célien FOUGEROLLE                                                          |                         |     |                     |
| <b>Test supervisor</b> .....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                | Olivier AELBRECHT                                                          |                         |     |                     |
| <b>Date of receipt of test item</b> .....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                | December 8 <sup>th</sup> , 2025                                            |                         |     |                     |
| <b>Date (s) of performance of tests</b> .....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                | December, the 9 <sup>th</sup> and the 10 <sup>th</sup> of 2025             |                         |     |                     |
| APPLICANT'S GENERAL INFORMATIONS:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                |                                                                            |                         |     |                     |
| <b>Company name</b> .....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                | STMICROELECTRONICS (Rousset) SAS                                           |                         |     |                     |
| <b>Company address</b> .....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                | 190 AVENUE CELESTIN COQ<br>13106 ROUSSET<br>FRANCE                         |                         |     |                     |
| <b>Person(s) present during the tests</b> .....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                | No representative for company attended the tests.                          |                         |     |                     |
| <b>Responsible</b> .....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                | M. MAURAN Julien                                                           |                         |     |                     |
| GENERAL REMARKS:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                |                                                                            |                         |     |                     |
| <p><b>The information in <i>italics</i> is declared by the manufacturer and is under his responsibility</b></p> <p><b>The test results presented in this report relate only to the object tested.</b></p> <p><b>The results contained in this report reflect the results for this particular model and serial number. It is the responsibility of the manufacturer to ensure that all production models meet the intent of the requirements detailed within this report.</b></p> <p>"(see Enclosure #)" refers to additional information appended to the report.</p> <p>"(see appended table)" refers to a table appended to the report.</p> <p>Throughout this report the decimal separator is point.</p> |                                |                                                                            |                         |     |                     |
| POSSIBLE TEST CASE VERDICTS:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                |                                                                            |                         |     |                     |
| Test case does not apply to the test object.:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                | N/A                                                                        |                         |     |                     |
| Test case not performed.....:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                | N/P                                                                        |                         |     |                     |
| Test object does meet the requirement.....:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                | P (Pass)                                                                   |                         |     |                     |
| Test object does not meet the requirement. ....:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                | F (Fail)                                                                   |                         |     |                     |
| DEFINITIONS AND ABBREVIATIONS:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                |                                                                            |                         |     |                     |
| E.U.T.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Equipment Under Test           | AE                                                                         | Ancillary Equipment     | Pk  | Peak detector       |
| RBW                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Resolution BandWidth           | VBW                                                                        | Video BandWidth         | QP  | Quasi-peak detector |
| FSOATS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Free Space Open Area Test Site | FAR                                                                        | Full Anechoic Room      | Av  | Average detector    |
| VP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Vertical Polarization          | HP                                                                         | Horizontal Polarization | RMS | Root Mean Square    |
| RF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Radio Frequency                | N.T.R                                                                      | Nothing To Report       | N/C | Not Communicated    |
| SAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Semi Anechoic Chamber          |                                                                            |                         |     |                     |

## 2. REFERENCE DOCUMENT(S)

### NORMATIVE REFERENCES:

The following referenced documents are necessary for the application of the present test report.

**FCC 47 CFR PART 15**

Code of federal regulations – Title 47 telecommunication  
Part 15- Radio frequency devices

**KDB 447498 D01 v06**

RF exposure procedures and equipment authorization policies for mobile and portable devices.

**RSS-102 - Issue 6, December 2023**

Radio Frequency (RF) Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands)

**RR-EVE-25G757-2A**

Radio Test Report Emitech.

Although the product standard uses obsolete technical standards, the latest versions of standards achievable by the laboratory will be used for testing. The evolution of methods that increase the requirements of the product standard are not considered.

### INFORMATIVE REFERENCES:

The following referenced documents are not necessary for the application of the present test report but they assist the user with regard to a particular subject area.

### 3. EQUIPMENT TECHNICAL DESCRIPTION

#### 3.1. Test Conditions

Test item description. .... : NFC extension board  
Model/Type reference..... : X-NUCLEO-NFC13A1  
Trade Mark. .... :   
Serial number (S/N)..... : Not communicated  
Part number (P/N). .... : Not communicated  
Software version..... : *Not communicated*  
Firmware version..... : *Not communicated*  
Type of sample..... : Serial  
Function(s)..... : NFC extension board for use in designs offices, R&D centers, schools etc..  
Manufacturer name. .... : STMICROELECTRONICS  
Address. .... : 776 Rue ALBERT CAQUOT  
SKY SOPHIA BAT B  
06410 BIOT  
FRANCE

#### General product information:

N/A

#### 3.2. E.U.T. Marking plate



### 3.3.E.U.T. Modification(s)

No modifications

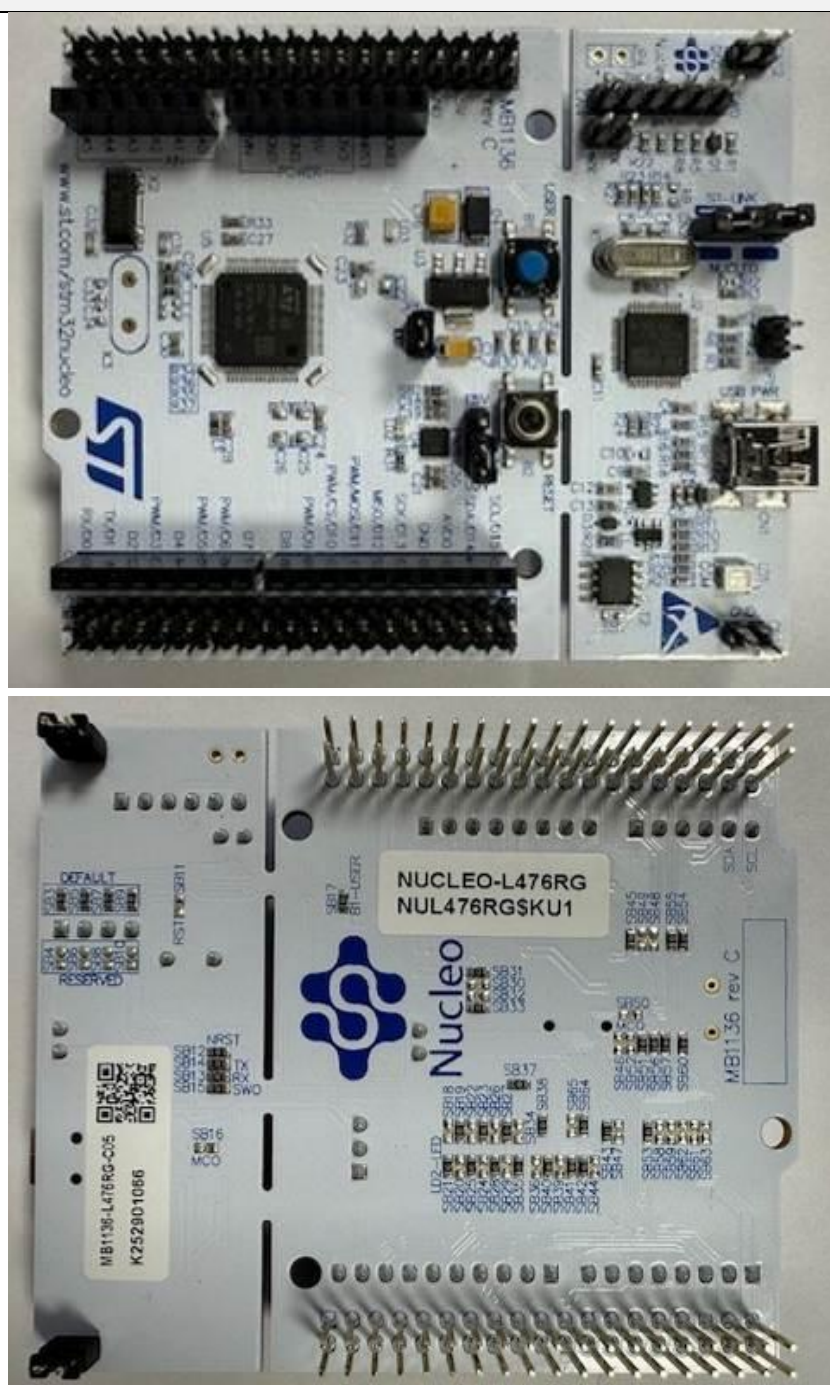
### 3.4.E.U.T. General view



### 3.5.E.U.T. Electronic board



### 3.5.E.U.T. Electronic board



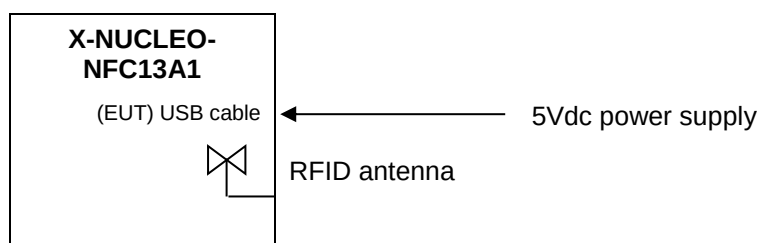
### 3.6.E.U.T. Mechanical and Electrical Design

Power supply. .... : 5Vdc  
Power supply range..... : 5Vdc  
Power type..... : Mini USB  
Power (W)..... : 2.5W  
Nominal current (A). .... : 0.5  
Dimensions (L x W x H) (m). .... : 104 mm x 54 mm x 10 mm  
Weight (kg). .... : 0.01  
Temperature range (°C). .... : 0-60°C  
Ground bounding strap..... : No

#### Comments:

For testing purposes, some tests were carried out with a standard external power supply 110-230Vac; 50/60Hz

### 3.7.E.U.T. Input/Output ports



| PORT | NAME              | TYPE | LENGTH | CABLE TYPE | COMMENTS              |
|------|-------------------|------|--------|------------|-----------------------|
| 0    | Main frame        | N/E  | N/A    | N/A        | Electronic demo board |
| 1    | 5Vdc power supply | DC   | 0.5m   | µUSB       |                       |
| 2    | RFID antenna      | RF   | N/A    | N/A        | 13.56MHz              |

AC/DC : AC/DC Converter port      AC..... : Alternative current port      DC..... : Direct current port  
I/O ..... : Input or Output port      TP ..... : Telecommunication port      RF ..... : Radio frequency port  
N/E ..... : Non Electrical port

### 3.8. Supporting Equipment Used During Test

Sample subject to the tests was tested with following equipment.

| PRODUCT TYPE      | MANUFACTURER                           | MODEL       | N°EMITECH / COMMENTS |
|-------------------|----------------------------------------|-------------|----------------------|
| Switching adapter | HN Electronic Components GmbH & Co. KG | HNP06-USBL6 |                      |
| Tagstand          | STMICROELECTRONICS                     | ST25T02KC   |                      |

### 3.9. EUT Radio Specifications

| a) GENERAL INFORMATIONS                    |                                                         |
|--------------------------------------------|---------------------------------------------------------|
| According to manufacturer's declarations : |                                                         |
| EUT type.....                              | Demo board                                              |
| Technology .....                           | RFID (NFC)                                              |
| Environmental profile.....                 | Residential (School) and light industry (Design office) |
| Temperature range.....                     | 0-60°C                                                  |
| Antenna type .....                         | Integral                                                |
| Antenna Gain.....                          | Integrated                                              |
| <b>Comments:</b>                           |                                                         |
| EUT is a demo board for design offices     |                                                         |
| b) TRANSMITTER PARAMETERS (Tx)             |                                                         |
| Frequency bands.....                       | 13.56MHz +/- 7kHz                                       |
| RF Power.....                              | N/C                                                     |
| Number of channels / Separation.....       | 1                                                       |
| Modulation type .....                      | N/C                                                     |
| Duty cycle .....                           | N/C                                                     |
| Tested frequency.....                      | 13.56MHz                                                |
| c) RECEIVER PARAMETERS (Rx)                |                                                         |
| Frequency bands.....                       | 13.56MHz +/- 7kHz                                       |
| Category/Class .....                       | 1                                                       |
| Bandwidth .....                            | 14kHz                                                   |

#### 4. RF EXPOSURE

Maximum Radiated magnetic field at 10 m = -7.97 dB $\mu$ A/m (0.40  $\mu$ A/m ) at 13.56 MHz (see Radio test report referenced in §2)

From ANSI C63.10 Annexe G.2 :  $EIRP = (E \times d)^2/30 = (377H \times d)^2/30$

where

E = electric field strength in V/m

H = magnetic field strength in A/m

D = measurement distance in m

Then equivalent EIRP = 0.00 W and equivalent ERP = 0.00 W

##### For USA

| Frequency (MHz) | Max H (dB $\mu$ A/m) | Max ERP (W) | Limit (W) |
|-----------------|----------------------|-------------|-----------|
| 13.56           | 0.40                 | 0.00        | 0.44      |

In accordance with KDB 447498 D01 Appendix A, as ERP is lower than 443 mW at 13.56 MHz, SAR exemption for FCC can be considered for a distance  $\leq$  5mm.

##### For Canada

| Frequency (MHz) | Max H (dB $\mu$ A/m) | Max EIRP (W) | Limit (W) |
|-----------------|----------------------|--------------|-----------|
| 13.56           | 0.40                 | 0.00         | 0.07      |

In accordance with RSS-102, Issue 6, Section 6.3., as EIRP is lower than 71 mW at 13.56 MHz, SAR exemption for ICSED can be considered for a distance  $\leq$  5mm.

●●● End of test report ●●●