

FCC Test Firm Designation Number: FR0014  
SED Wireless Device Testing Laboratory CAB Number: FR0004

Matériel testé :  
Equipment under test:

**IDENTEC SOLUTIONS / iQ350 RNB (IDS1009)**  
(Trademark / Marketing name or product reference)

Client / Demandeur:  
Customer / Applicant : **IDENTEC SOLUTIONS AG**  
Millennium Park 2  
A-6890 Lustenau – Austria

Rapport délivré à :  
Issued to: **IDENTEC SOLUTIONS AG**  
Millennium Park 2  
A-6890 Lustenau – Austria

Numéro d'affaire :  
Work number : 15234

Référence de la proposition :  
Proposal number: 062023-26234

Date de l'essai :  
Date of test: Du 1 au 6 Septembre 2023  
September 1<sup>st</sup> to 6<sup>th</sup>, 2023

Objectif des essais :  
Test purpose: EMC qualification according to following standards:  
- CFR 47, FCC Part 15, Subpart C  
(Chapter 15.249 - Operation within the bands 902–928 MHz, 2400–2483.5 MHz, 5725–5875 MHz, and 24.0–24.25 GHz)  
- Industry Canada, RSS-Gen Issue 5 & RSS-210 Issue 10, section B.10  
(Bands 902–928, 2400–2483.5 and 5725–5875 MHz)  
Measurement standards:  
ANSI C63.10 (2013)

Lieu du test:  
Test location: SMEE, 385 rue René Rambaud  
38500 VOIRON - France

Test réalisé par :  
Test realized by: Chemseddine KERMICHE

Conclusion :  
Conclusion: L'équipement satisfait aux prescriptions et essais des normes citées en référence.  
The appliance complies with requirements and tests of above mentioned standards.

| Ed. | Date                         | Modifications<br>Pages | Written by :<br>Visa                                                                                                          | Approved by:<br>Visa                |
|-----|------------------------------|------------------------|-------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| 1   | March 22, 2024 <sup>th</sup> | Initial Edition        | Chemseddine KERMICHE<br>Test operator<br> | Laurent Chapus<br>Technical Manager |

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## COORDONNEES

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## 1. Normative References

| FCC qualification according to:    |         |                                                                                                                      |
|------------------------------------|---------|----------------------------------------------------------------------------------------------------------------------|
| Standards                          | Applied | Title                                                                                                                |
| ANSI C63.10<br>(2013)              | X       | American National Standard for Testing Unlicensed Wireless Devices                                                   |
| CFR47, Part 15<br>(September 2023) | X       | Telecommunication – Federal Communication Commission – Radio frequency devices,<br>Sections 15.207 / 15.209 / 15.249 |

| ISED qualification according to:                    |         |                                                                                                                                                       |
|-----------------------------------------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Standards                                           | Applied | Title                                                                                                                                                 |
| RSS-Gen<br>(Issue 5/2018, amendments 2019 and 2021) | X       | General Requirements and Information for the Certification of Radio Apparatus                                                                         |
| RSS-210<br>(Issue 10/2019, amendments 2020)         | X       | Licence-exempt Radio Apparatus: Category I Equipment,<br>Section B.10: Devices Operating in Frequency Bands for Any Application, Band 2400-2483.5MHz. |

Deviation from standards: None.

## 2. Test synthesis

| TEST                                                                  | Paragraph number<br>FCC Part 15<br>IC RSS-210                                      | Spec.<br>FCC Part 15<br>IC RSS-210                                                                                                                                                                                                                                                                                                                                                                                  | RESULTS<br>(comments) |
|-----------------------------------------------------------------------|------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| Conducted emissions test                                              | 15.207 (a)<br>RSS-Gen: Issue 5, §8.8                                               | 15.207 (a)<br>Table 4, §8.8                                                                                                                                                                                                                                                                                                                                                                                         | N/A (1)               |
| Field Strength of fundamental                                         | 15.249 (a) (c)<br>RSS-210: Issue 9, §B.10 (a)                                      | 94dBµV/m @3m<br>(50mV/m @ 3m)                                                                                                                                                                                                                                                                                                                                                                                       | PASS                  |
| Field Strength of harmonics                                           | 15.249 (a) (c) (e)<br>RSS-210: Issue 9, §B.10 (a)                                  | 54dBµV/m @3m<br>(0.5mV/m @ 3m)                                                                                                                                                                                                                                                                                                                                                                                      | PASS                  |
| Unwanted emissions outside the specified frequency band and harmonics | 15.209 / 15.249 (d) (e)<br>RSS-210: Issue 9, §B.10 (b) /<br>RSS-Gen: Issue 5, §8.9 | Whichever is less stringent, either:<br>- 50dB below level of fundamental, or;<br>- General field strength limits, as follow:<br><u>Measure at 300m</u><br>9-490kHz: 2400µV/m/F(kHz)<br><u>Measure at 30m</u><br>0.490-1.705: 24000µV/m/F(kHz)<br>1.705-30MHz: 30µV/m<br><u>Measure at 3m</u><br>30MHz-88MHz : 40 dBµV/m<br>88MHz-216MHz : 43.5 dBµV/m<br>216MHz-960MHz : 46.0 dBµV/m<br>Above 960MHz : 54.0 dBµV/m | PASS                  |
| Occupied Bandwidth                                                    | FCC Part 15.215 c)<br>RSS-Gen: Issue 5, §6.7                                       | BW at 99% and at -20dB                                                                                                                                                                                                                                                                                                                                                                                              | PASS                  |

NA: Not Applicable

(1): Battery operated equipment.

### • General conclusion:

Measures and tests performed on the sample of the product *IDENITEC SOLUTIONS / iQ350 RNB (IDS1009)*, in configuration and description presented in this test report, show compliance with standards FCC CFR 47, PART 15, Subpart C and Industry Canada RSS-Gen & RSS-210.

## 3. Equipment Under Test (EUT)

Nom /  
Identification

**IDENTEC SOLUTIONS / iQ350 RNB (IDS1009)**  
(Trademark / Marketing name or product reference)

ID: 0.470.000.066

FCC ID: OO4-IDS1009  
IC: 3538A-IDS1009  
Model / HVIN: IDS1009  
Product name / PMN: iQ350 RNB  
FVIN: 00.05

Alimentation /  
Power supply 3.6VDC from internal battery

Auxiliaires /  
Auxiliaries - PC Laptop ASUS, model F200M  
- i-Point Si (Identec Solutions product)

Entrées-Sorties /  
Input / Output

|        | Câbles pour essai /<br>Cables for test | Blindé /<br>Shielded | Prévu pour >3m /<br>Intended for >3m |
|--------|----------------------------------------|----------------------|--------------------------------------|
| RS-232 | 1.1m                                   | No                   | No                                   |

Mode de fonctionnement /  
Running mode

Equipment running modes are:  
The tested sample is able to be set in following modes:  
- Transmit a modulated carrier frequency on low, middle and high channels (902.5/915/927.5MHz)

Programme de test /  
Test program /

PC test program "Gen3 Tag Certification tool Version: 1.0.1.18089"

Fréquence max interne  
EST /  
Max internal EUT  
frequency

927.5 MHz for RF data transmission.

Informations  
supplémentaires /  
Additional informations

Declaration of the applicant:  
- Type of technology: Proprietary RF protocol.  
- Emission bands: 902-928MHz.  
- Frequency transmission band: 902.5 to 927.5MHz.  
- Channel spacing 0.5MHz from 902.5 to 927.5MHz  
- Modulation: FSK 40kHz.  
- Equipment intended for use as a mobile equipment.  
- Equipment designed for continuous operation.  
- Antenna type: ceramic antenna (Antenova SR4L200)  
- Rated conducted output power setting: -1.0 dBm.

Dimensions de l'EST /  
Dimensions of EUT

136.7mm x 61.5 x 41.5

Note: The above information are declared by the manufacturer/customer and are under his responsibility.

## 4. Test conditions

Power supply voltage:

Equipment under test: 3.6V DC (New battery).  
Auxiliaries: None.

## 5. Modifications of the EUT

None.

## 6. Special accessories

None required for compliance with emission limits.

## 7. Measurement Uncertainty

| Test Description                                    | Expanded uncertainty |
|-----------------------------------------------------|----------------------|
| Conducted emissions test (150k-30MHz, AC mains)     | ± 3.5dB              |
| Radiated emission test (9kHz-30MHz, electric field) | ± 4.0dB              |
| Radiated emission test (30-200MHz, SAC 3m)          | ± 5.6dB              |
| Radiated emission test (200-1000MHz, SAC 3m)        | ± 5.3dB              |
| Radiated emission test (1-18GHz, FAC 3m)            | ± 5.6dB              |
| Radiated emission test (18-40GHz, FAC 3m)           | ± 5.6dB              |
| Conducted RF output power at antenna port           | ± 1.6dB              |
| Radiated RF output power (Peak, Power density)      | ± 5.6dB              |
| DTS Bandwidth, 99% OBW                              | ±4%                  |
| Temperature                                         | ± 1°C                |
| Time and duty cycle calculation                     | ±1%                  |
| AC and DC voltage                                   | ±1%                  |

Note: Expanded uncertainty at 95% confidence (k=2)

## 8. Field Strength Calculation

The field strength (level) is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain (if any) from the measured reading. The basic equation is as follow:

$$FS = RA + AF + CF - AG$$

Where FS = Field Strength (Level)

RA = Receiver Amplitude (Meter Reading)

AF = Antenna Factor

CF = Cable Factor

AG = Amplifier Gain

Margin value = Emission level – Limit value

Example:

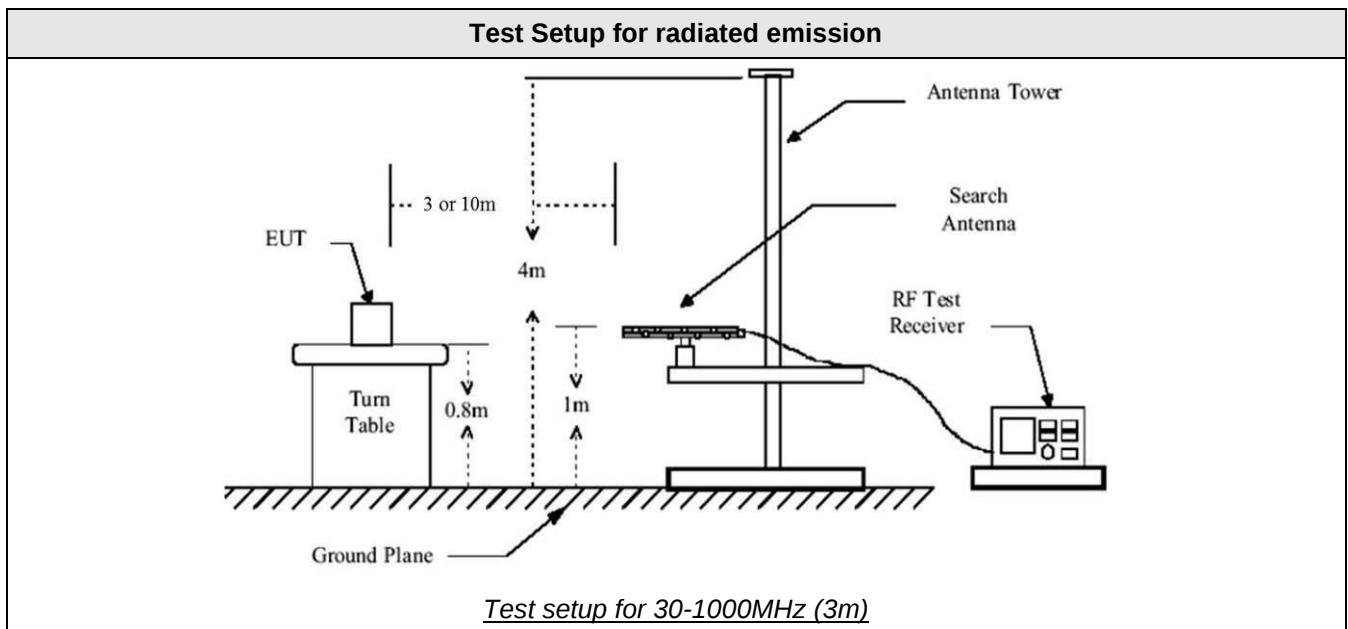
RA: 14.0dBμV / AF: 16.5 dBm<sup>-1</sup> / CF: 3.5dB / AG: 15dB

→ Total factor: 5dBm<sup>-1</sup>

→ Field level: 19.0dBμV/m (-21.0dB for margin if limit is 40dBμV/m)

## 9. Field Strength of fundamental

| TEST: Field strength of fundamental / FCC part 15.249 – RSS 210 §B.10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                             | Verdict         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|-----------------|
| <p><u>Method:</u> Measurements were made in a 3-meter Semi anechoic chamber (SAC) that complies with ANSI C63.4 / C63.10.</p> <p>Measurements were performed with a peak detector using a 100kHz RBW.</p> <p>The EUT was rotated 360° about its azimuth with the receive antenna located at various heights in horizontal and vertical polarities. Final measurements (Peak) were then performed by rotating the EUT 360° and adjusting the receive antenna height from 1 to 4 m.</p> <p>The tested equipment is set to transmit operation with modulation on lowest, middle and highest channels. Three orthogonal axis measurements on EUT are performed to obtain the maximum peak field strength.</p> |                             | Pass            |
| Laboratory Parameters:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Required prior to the test  | During the test |
| Ambient Temperature                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 20 to 30 °C                 | 24°C ± 2        |
| Relative Humidity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 30 to 70 %                  | 45% ± 5         |
| Limits – FCC Part 15.249 (a) (c) / RSS-210 §B.10 (a)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                             |                 |
| Frequency (MHz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Limits (dBμV/m)             |                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Level / Detector / Distance | Results         |
| 902 to 928 MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 94dBμV/m / Quasi-peak / 3m  | Pass            |
| <p>Supplementary information:</p> <p>Test location: SMEE</p> <p>Test date: September 1<sup>st</sup>, 2023. Tested by C. KERMICHE.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                             |                 |



| Tabulated Results for Field Strength of fundamental |                        |                                         |          |        |             |
|-----------------------------------------------------|------------------------|-----------------------------------------|----------|--------|-------------|
| FREQ                                                | Field Strength<br>@ 3m | Detector                                | Limit    | Margin | Result      |
| (MHz)                                               | (dBμV/m)               |                                         | (dBμV/m) | dB     |             |
| 902.5                                               | 93.1                   | QP                                      | 94.0     | -0.9   | <b>Pass</b> |
| 915.0                                               | 93.4                   | QP                                      | 94.0     | -0.6   | <b>Pass</b> |
| 927.5                                               | 94.0                   | QP                                      | 94.0     | 0.0    | <b>Pass</b> |
| RBW:                                                |                        | 100kHz                                  |          |        |             |
| Measurement distance:                               |                        | 3m                                      |          |        |             |
| Limit:                                              |                        | FCC Part 15.249 (a) (c) / RSS-210 §B.10 |          |        |             |
| Final measurement detector:                         |                        | Quasi-Peak                              |          |        |             |
| RESULT:                                             |                        | PASS                                    |          |        |             |

## 10. Unwanted emissions & Field Strength of harmonics

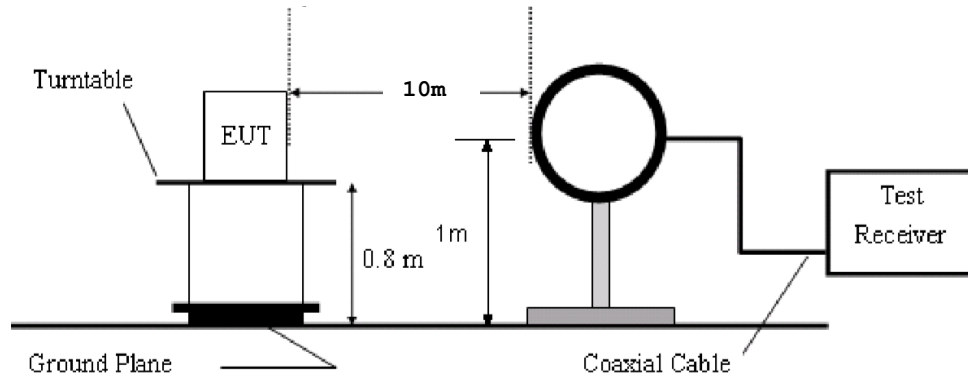
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                              |                             |                |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|-----------------------------|----------------|
| <b>TEST: Unwanted emissions outside fundamental and harmonics bands / FCC part 15.209, 15.249 - RSS-210 §B.10 / RSS-Gen §8.9</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                              |                             | <b>Verdict</b> |
| <p><b>Method:</b> Measurements were made in a 3-meter Semi Anechoic Room (SAR) for frequency 30MHz to 1GHz and in a 3-meter Full Anechoic environment (SAR with floor absorbers) above 1GHz. The Semi Anechoic Room complies with CISPR16-1-4 / ANSI C63.4 requirements. For frequency 9kHz to 30MHz, measurements are performed on a free-space open area test site at 10m distance.</p> <p>Preliminary (peak) measurements were performed at an antenna to EUT separation distance of 3 meter. The EUT was rotated 360° about its azimuth with the receive antenna located at various heights in horizontal and vertical polarities.</p> <p>Final measurements (Peak, Quasi-peak, Average) were then performed by rotating the EUT 360° and adjusting the receive antenna height from 1 to 4 m. All frequencies were investigated in both horizontal and vertical antenna polarity, where applicable.</p> |                                                                              |                             | <b>Pass</b>    |
| Laboratory Parameters:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Required prior to the test                                                   | During the test             |                |
| Ambient Temperature                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 20 to 30 °C                                                                  | 22°C ± 2                    |                |
| Relative Humidity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 30 to 70 %                                                                   | 45% ± 5                     |                |
| Fully configured sample scanned over the following frequency range                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Frequency range on each side of line                                         | Measurement Point           |                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 9kHz – 30MHz                                                                 | 10 m measurement distance   |                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 30MHz – 10GHz                                                                | 3 m measurement distance    |                |
| <b>Limits – FCC Part 15.209, 15.249 (a) (c) (d) (e) / RSS-Gen §8.9, RSS-210 §B.10 (a) (b)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                              |                             |                |
| <b>Whichever is less stringent, either:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                              |                             |                |
| Frequency (MHz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Limits (dBµV/m)                                                              |                             |                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Level / Detector / Distance                                                  | Level / Detector / Distance |                |
| 30 to 1000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 50dB below the fundamental / QP / 3m                                         | Not used                    |                |
| Above 1GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 50dB below the fundamental / Av / 3m<br>30dB below the fundamental / Pk / 3m | Not used                    |                |
| <b>Or</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                              |                             |                |
| Frequency (MHz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Limits (dBµV/m)                                                              |                             |                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Level / Detector / Distance                                                  | Results                     |                |
| 0.009 to 0.090                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 107.6 – 87.6 / AV / 10m<br>127.6 – 107.6 / PK / 10m                          | <b>Pass</b>                 |                |
| 0.090 to 0.110                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 87.6 – 85.9 / QP / 10m                                                       | <b>Pass</b>                 |                |
| 0.110 to 0.490                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 85.7 – 72.9 / AV / 10m<br>105.7 – 92.9 / PK / 10m                            | <b>Pass</b>                 |                |
| 0.490 to 1.705                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 52.9 – 42.1 / QP / 10m                                                       | <b>Pass</b>                 |                |
| 1.705 to 30                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 48.6 / QP / 10m                                                              | <b>Pass</b>                 |                |
| 30 to 88                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 40.0 / QP / 3m                                                               | <b>Pass</b>                 |                |
| 88 to 216                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 43.5 / QP / 3m                                                               | <b>Pass</b>                 |                |
| 216 to 960                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 46.0 / QP / 3m                                                               | <b>Pass</b>                 |                |
| 960-1000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 54.0 / QP / 3m                                                               | <b>Pass</b>                 |                |
| Above 1GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 54.0 / AV / 3m<br>74.0 / PK / 3m                                             | <b>Pass</b>                 |                |

Supplementary information:

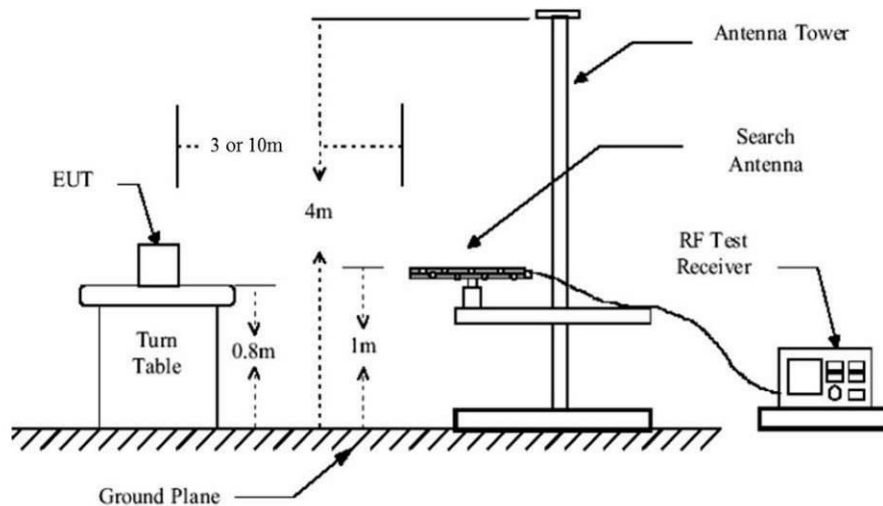
Test location: SMEE

Test date: September 1<sup>st</sup>, 2023. Tested by C. KERMICHE.

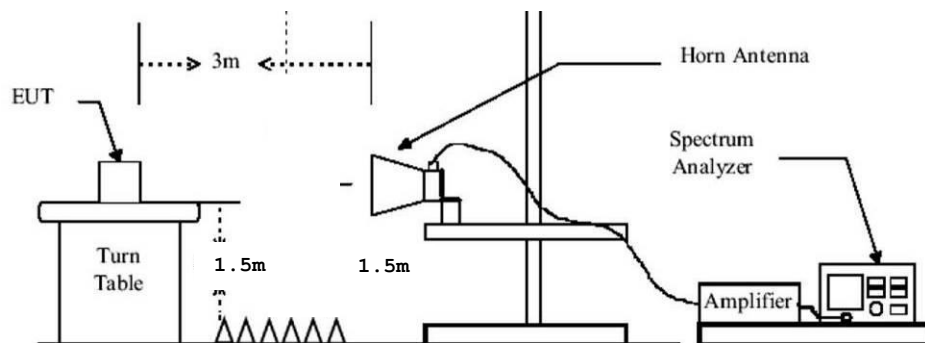
## Test Setup for radiated emission



Test setup for 9k-30MHz

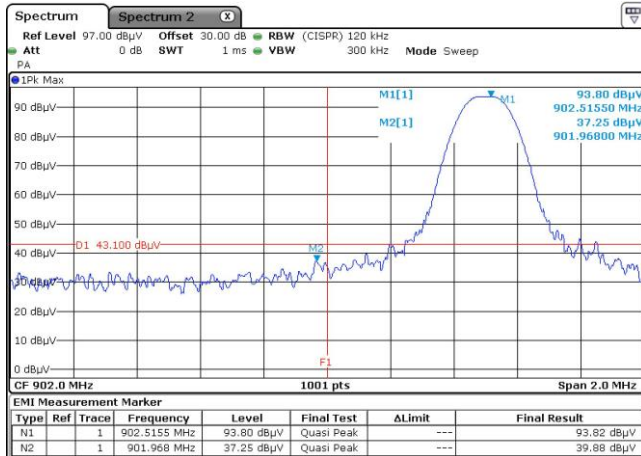


Test setup for 30-1000MHz (3m)



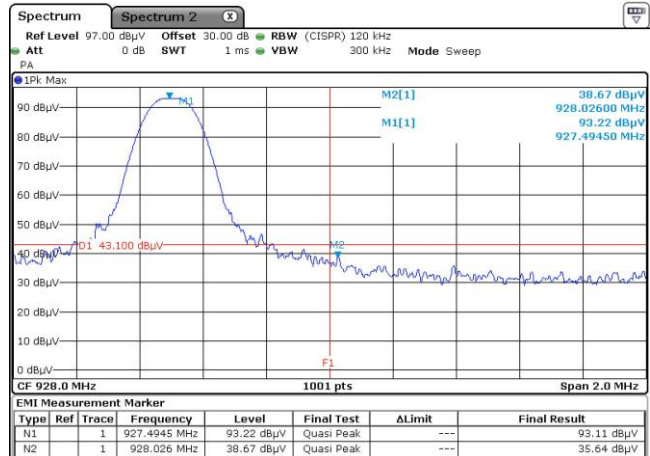
Test setup for 1-10GHz

## Graphical representation of Band-edge compliance (Radiated)



### Low band-edge compliance

M2 = 902MHz  
 Quasi-Peak level below 902MHz is 39.9dBµV/m max at 3m  
 (limit is 43.1dBµV/m)  
 RESULT: PASS  
 Note: Radiated measurement



### High band-edge compliance

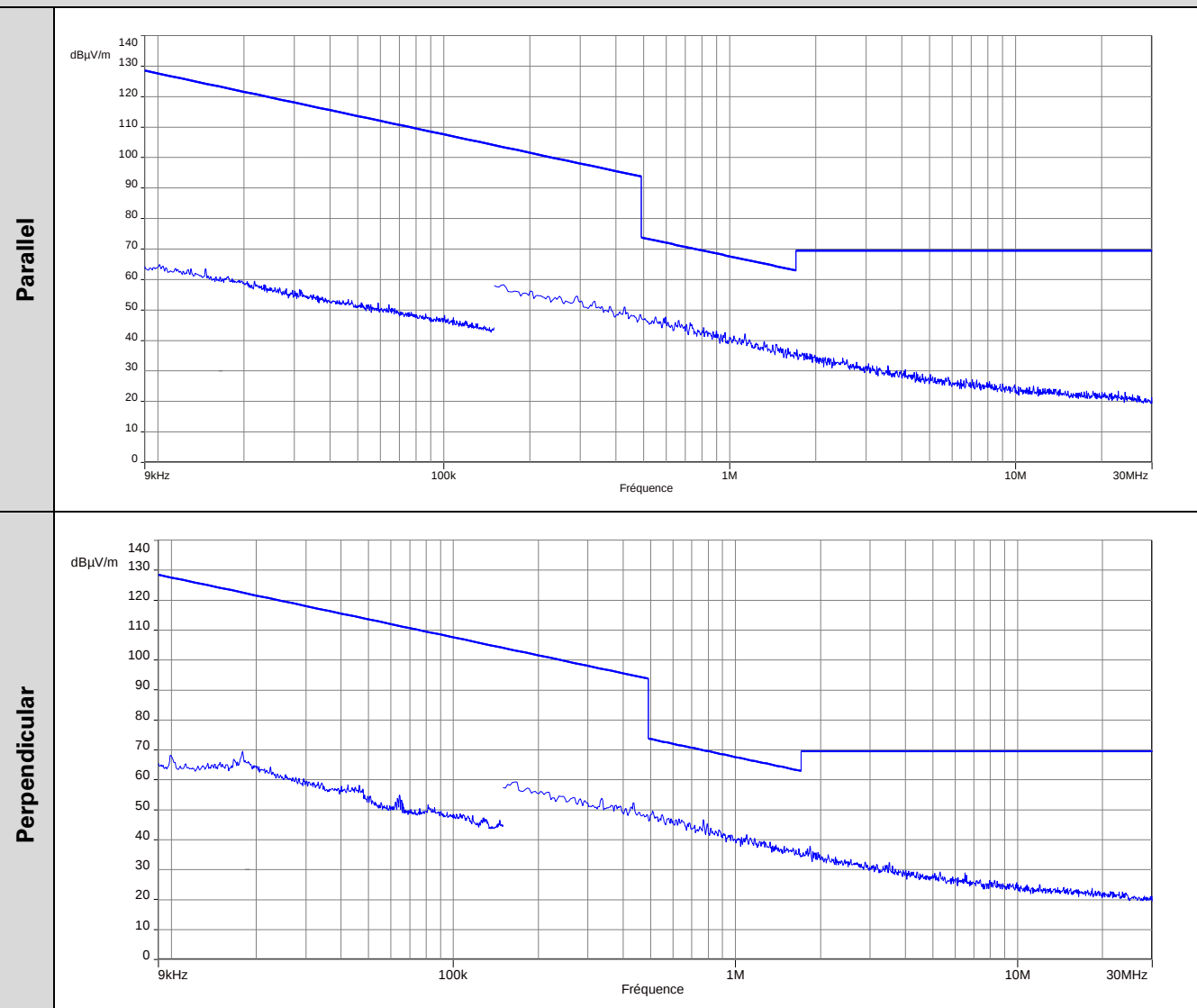
M2 = 928MHz  
 Quasi-Peak level below 902MHz is 35.6dBµV/m max at 3m  
 (limit is 43.1dBµV/m)  
 RESULT: PASS  
 Note: Radiated measurement

| Tabulated Results for Unwanted emissions (9kHz-490kHz)                                        |                 |                                                                                                                                                                                                                                                                                  |              |        |            |             |                    |
|-----------------------------------------------------------------------------------------------|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------|------------|-------------|--------------------|
| FREQ                                                                                          | RF field @ 300m | Limit @ 300m                                                                                                                                                                                                                                                                     | Detector     | Margin | Ant. angle | Table angle | Correc. Fact. (CF) |
| MHz                                                                                           | dBµV/m          | dBµV/m                                                                                                                                                                                                                                                                           | Pk / QP / AV | dB     | Degree     | Degree      | dB                 |
| All levels are at least 10dB below applicable limits                                          |                 |                                                                                                                                                                                                                                                                                  |              |        |            |             |                    |
| Supplementary information:<br>Frequency list measured has been created with pre-scan results. |                 |                                                                                                                                                                                                                                                                                  |              |        |            |             |                    |
| Frequency band investigated:                                                                  |                 | 9kHz-490kHz                                                                                                                                                                                                                                                                      |              |        |            |             |                    |
| RBW:                                                                                          |                 | 200Hz (9kHz-150kHz)<br>9kHz (150kHz-30MHz)                                                                                                                                                                                                                                       |              |        |            |             |                    |
| Measurement distance:                                                                         |                 | 10m                                                                                                                                                                                                                                                                              |              |        |            |             |                    |
| Final measurement detector:                                                                   |                 | Peak / Quasi-Peak / Average                                                                                                                                                                                                                                                      |              |        |            |             |                    |
| Limit:                                                                                        |                 | FCC Part 15.209 / RSS-Gen                                                                                                                                                                                                                                                        |              |        |            |             |                    |
| Note:                                                                                         |                 | CF: Correction factor = Antenna factor + Cable loss<br>*1: Measure have been done at 10m distance and corrected according to requirements of 15.209.e / RSS-Gen clause 6.5)<br>(M@300m = M@10m-59.1dB)<br>Loop antenna used and rotated about its axis to maximize any emission. |              |        |            |             |                    |

| Tabulated Results for Unwanted emissions (490kHz-30MHz)                                       |                |                                                                                                                                                                                                                                                            |          |        |            |             |                    |
|-----------------------------------------------------------------------------------------------|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--------|------------|-------------|--------------------|
| FREQ                                                                                          | RF field @ 30m | Limit @ 30m                                                                                                                                                                                                                                                | Detector | Margin | Ant. angle | Table angle | Correc. Fact. (CF) |
| MHz                                                                                           | dBµV/m         | dBµV/m                                                                                                                                                                                                                                                     | Pk / QP  | dB     | Degree     | Degree      | dB                 |
| All levels are at least 10dB below applicable limits                                          |                |                                                                                                                                                                                                                                                            |          |        |            |             |                    |
| Supplementary information:<br>Frequency list measured has been created with pre-scan results. |                |                                                                                                                                                                                                                                                            |          |        |            |             |                    |
| Frequency band investigated:                                                                  |                | 490kHz-30MHz                                                                                                                                                                                                                                               |          |        |            |             |                    |
| RBW:                                                                                          |                | 9kHz (150kHz-30MHz)                                                                                                                                                                                                                                        |          |        |            |             |                    |
| Measurement distance:                                                                         |                | 10m                                                                                                                                                                                                                                                        |          |        |            |             |                    |
| Final measurement detector:                                                                   |                | Quasi-Peak                                                                                                                                                                                                                                                 |          |        |            |             |                    |
| Limit:                                                                                        |                | FCC Part 15.209 / RSS-Gen                                                                                                                                                                                                                                  |          |        |            |             |                    |
| Note:                                                                                         |                | CF: Correction factor = Antenna factor + Cable loss<br>*1: Measure have been done at 10m distance and corrected according to requirements of 15.209.e)<br>(M@30m = M@10m-19.1dB)<br>Loop antenna used and rotated about its axis to maximize any emission. |          |        |            |             |                    |

| Tabulated Results for Radiated Disturbance<br>(3m measurement in semi anechoic room, 30MHz-1GHz) |                |                                                             |                |        |             |                |              |         |
|--------------------------------------------------------------------------------------------------|----------------|-------------------------------------------------------------|----------------|--------|-------------|----------------|--------------|---------|
| FREQ                                                                                             | Field level    | Field level                                                 | Limit          | Margin | Table angle | Antenna height | Total factor | Pol H/V |
| MHz                                                                                              | (Pk)<br>dBµV/m | (QP)<br>dBµV/m                                              | (QP)<br>dBµV/m | dB     | Degree      | m              | dB           |         |
| All levels are at least 10dB below applicable limits                                             |                |                                                             |                |        |             |                |              |         |
| Frequency band investigated:                                                                     |                | 30MHz-1GHz                                                  |                |        |             |                |              |         |
| RBW:                                                                                             |                | 120kHz                                                      |                |        |             |                |              |         |
| Measurement distance:                                                                            |                | 3m                                                          |                |        |             |                |              |         |
| Limit:                                                                                           |                | FCC Part 15.209 – 15.249 / RSS-Gen §8.9 – RSS-210 §B.10 (b) |                |        |             |                |              |         |
| Final measurement detector:                                                                      |                | Quasi-Peak                                                  |                |        |             |                |              |         |
| Wide Measurement Uncertainty:                                                                    |                | PASS                                                        |                |        |             |                |              |         |
| RESULT:                                                                                          |                | Limits used are FCC part 15.209 / RSS-Gen.                  |                |        |             |                |              |         |

## Graphical representation of Radiated Disturbance Measurement (Peak detection, Anechoic chamber pre-scan, 9kHz-30MHz / 3m / Parallel & Perpendicular antenna position / Transmit mode)

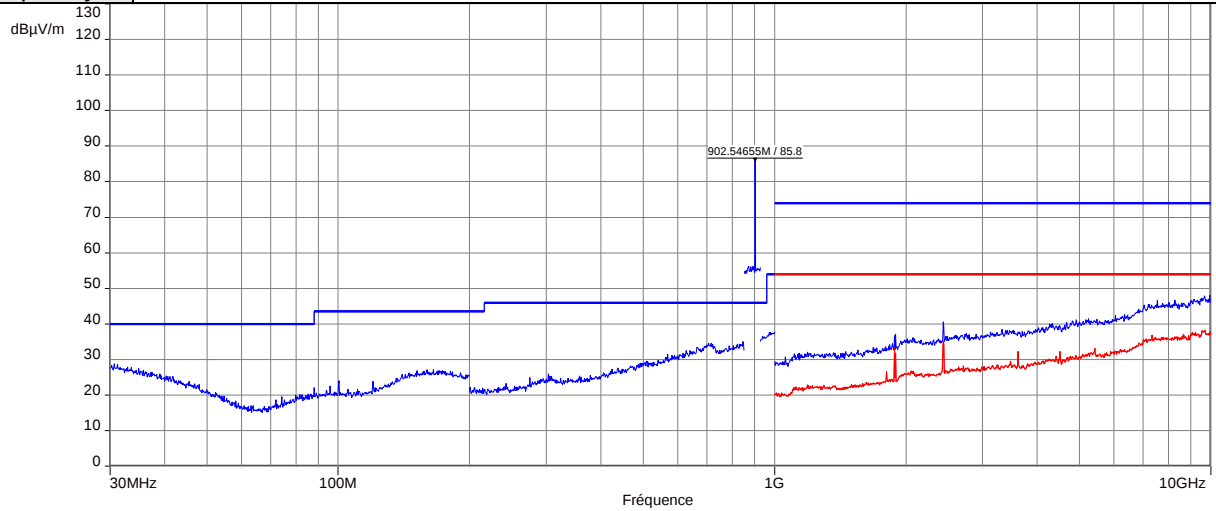


|                              |                                                 |
|------------------------------|-------------------------------------------------|
| Frequency band investigated: | 9kHz-30MHz                                      |
| Unit :                       | dBμV/m                                          |
| RBW :                        | 200Hz (9kHz-150kHz)<br>9kHz (150kHz-30MHz)      |
| Antenna polarization :       | Parallel & Perpendicular to measurement axis    |
| Measurement detector:        | Peak                                            |
| Notes:                       | Pre-scan graph only for identification purpose. |

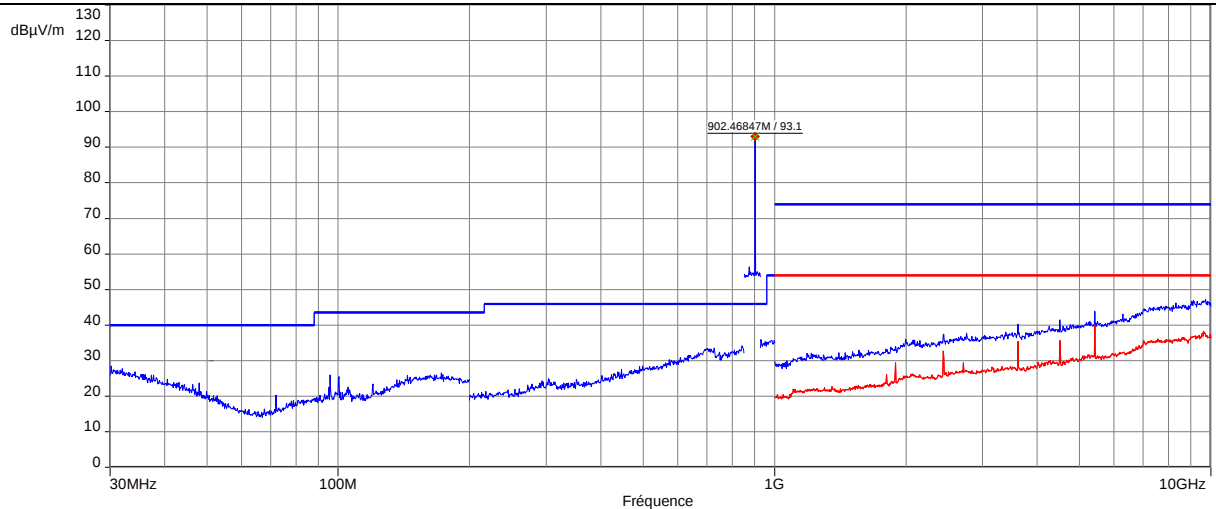
## Graphical representation of Radiated Disturbance Measurement (Peak detection, Full Anechoic Chamber pre-scan, 30MHz-10GHz / 3m / Transmit mode / Worst position)

Center frequency: 902.5 MHz

HORIZONTAL POLARIZATION



VERTICAL POLARIZATION

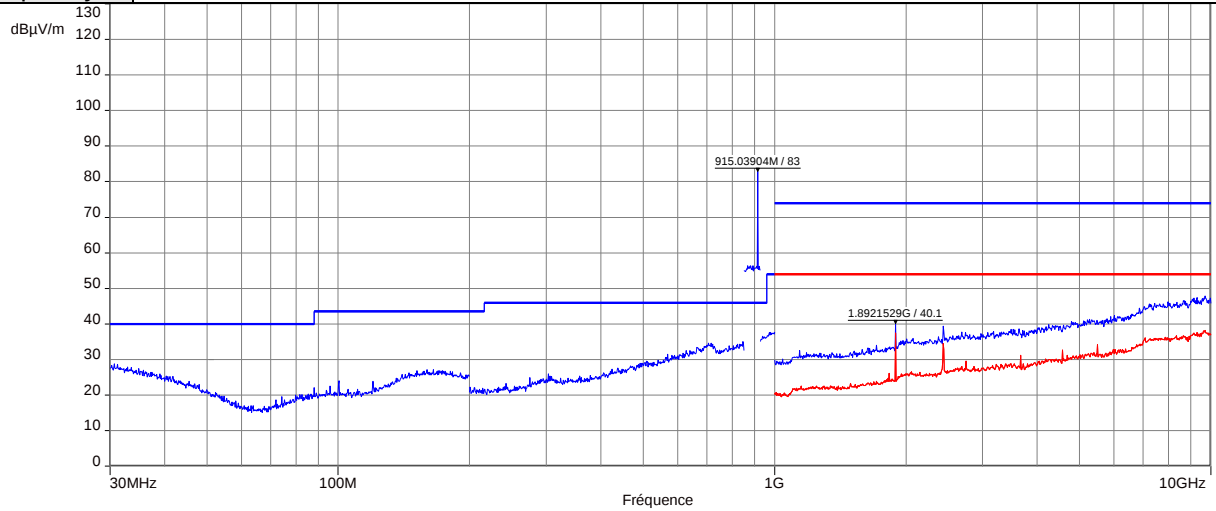


| FREQ                                                 | Field level  | Field level | Limit                                                        | Limit       | Margin  | Margin  | Table angle | Ant height | Total factor | Pol | Note |
|------------------------------------------------------|--------------|-------------|--------------------------------------------------------------|-------------|---------|---------|-------------|------------|--------------|-----|------|
| MHz                                                  | (PK) dBμV /m | (AV) dBμV/m | (PK) dBμV/m                                                  | (AV) dBμV/m | (PK) dB | (AV) dB | Degree      | m          | dB           |     |      |
| All levels are at least 10dB below applicable limits |              |             |                                                              |             |         |         |             |            |              |     |      |
| RBW :                                                |              |             | 100kHz < 1GHz and 1MHz > 1GHz.                               |             |         |         |             |            |              |     |      |
| Final measurement detector:                          |              |             | Quasi-Peak below 1GHz.<br>Peak and CISPR Average above 1GHz. |             |         |         |             |            |              |     |      |

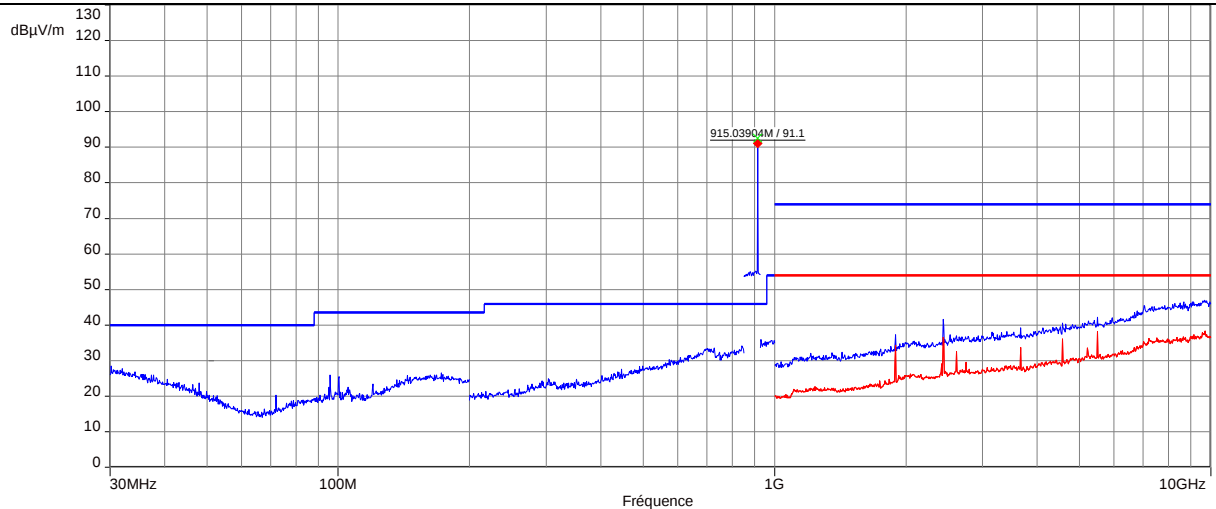
## Graphical representation of Radiated Disturbance Measurement (Peak detection, Full Anechoic Chamber pre-scan, 30MHz-10GHz / 3m / Transmit mode / Worst position)

Center frequency: 915 MHz

HORIZONTAL POLARIZATION



VERTICAL POLARIZATION



| FREQ | Field level  | Field level | Limit       | Limit       | Margin  | Margin  | Table angle | Ant height | Total factor | Pol | Note |
|------|--------------|-------------|-------------|-------------|---------|---------|-------------|------------|--------------|-----|------|
| MHz  | (PK) dBμV /m | (AV) dBμV/m | (PK) dBμV/m | (AV) dBμV/m | (PK) dB | (AV) dB | Degree      | m          | dB           |     |      |

All levels are at least 10dB below applicable limits

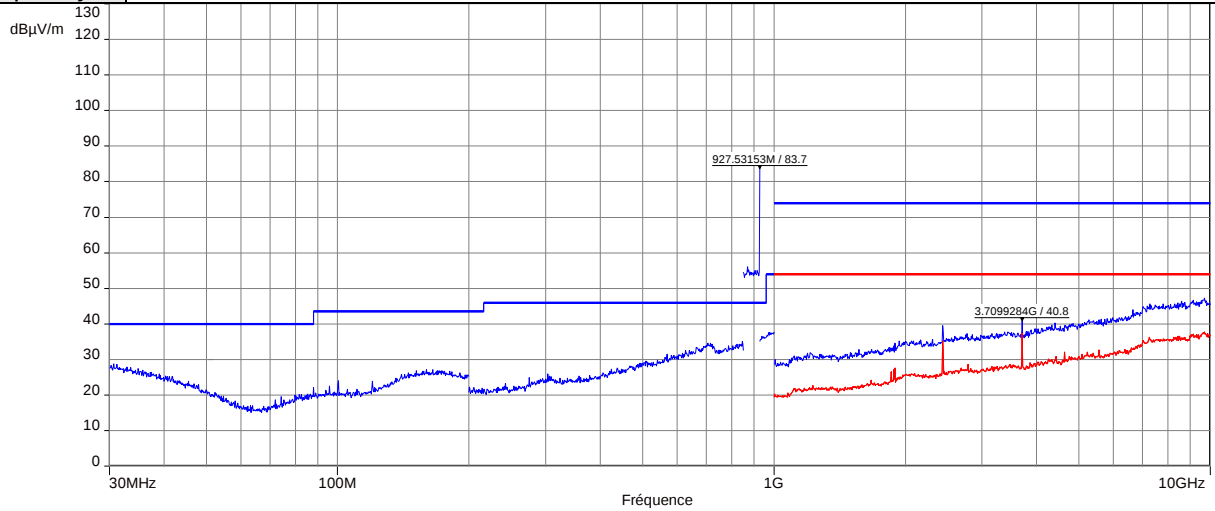
Final measurement detector:

Quasi-Peak below 1GHz.  
Peak and CISPR Average above 1Ghz.

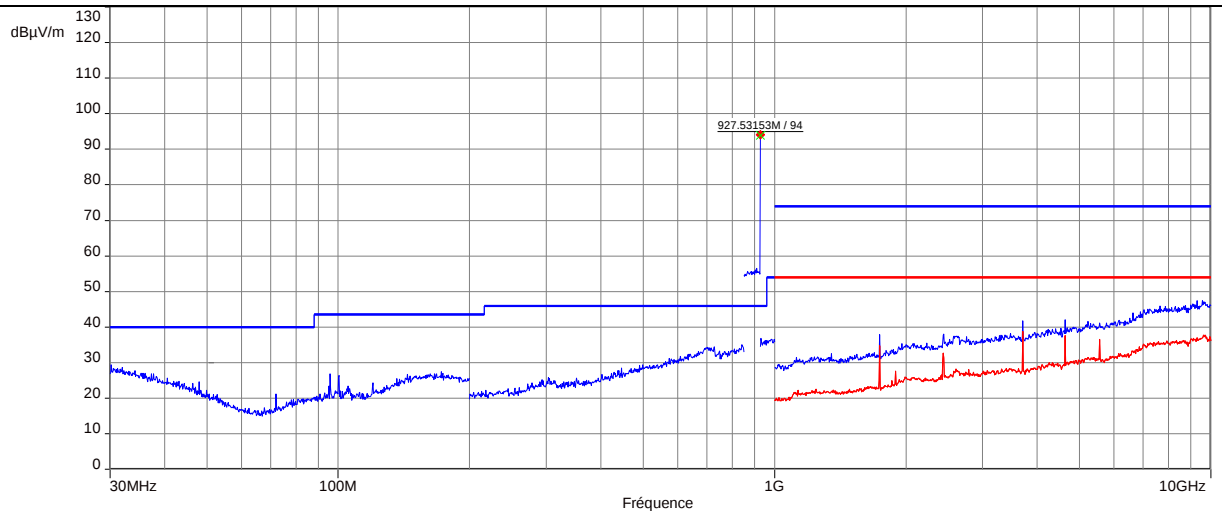
## Graphical representation of Radiated Disturbance Measurement (Peak detection, Full Anechoic Chamber pre-scan, 30MHz-10GHz / 3m / Transmit mode / Worst position)

Center frequency: 927.5 MHz

HORIZONTAL POLARIZATION



VERTICAL POLARIZATION

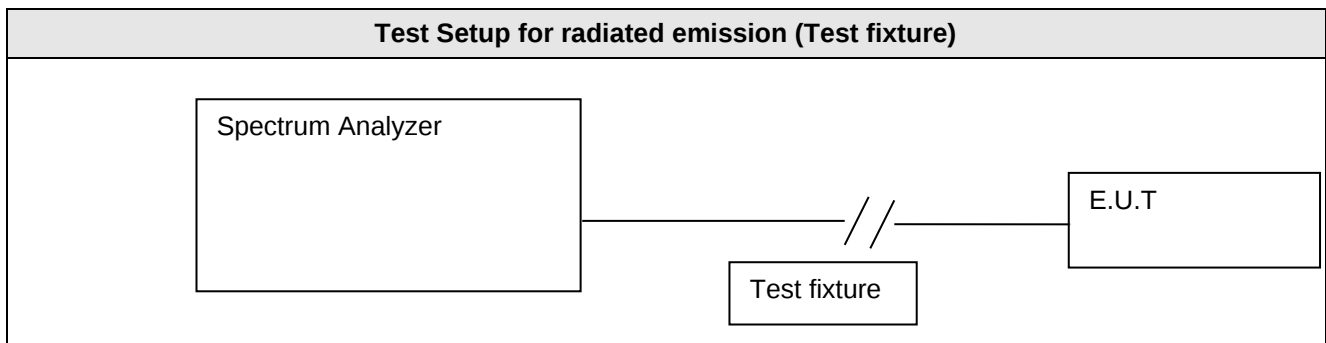


| FREQ                                                 | Field level  | Field level | Limit                                                        | Limit       | Margin  | Margin  | Table angle | Ant height | Total factor | Pol | Note |
|------------------------------------------------------|--------------|-------------|--------------------------------------------------------------|-------------|---------|---------|-------------|------------|--------------|-----|------|
| MHz                                                  | (PK) dBμV /m | (AV) dBμV/m | (PK) dBμV/m                                                  | (AV) dBμV/m | (PK) dB | (AV) dB | Degree      | m          | dB           |     |      |
| All levels are at least 10dB below applicable limits |              |             |                                                              |             |         |         |             |            |              |     |      |
| RBW :                                                |              |             | 100kHz < 1GHz and 1MHz > 1GHz.                               |             |         |         |             |            |              |     |      |
| Final measurement detector:                          |              |             | Quasi-Peak below 1GHz.<br>Peak and CISPR Average above 1Ghz. |             |         |         |             |            |              |     |      |

## 11. Occupied bandwidth (99%)

| TEST: Occupied bandwidth (99%) / RSS-GEN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                            |                 | Verdict |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|-----------------|---------|
| <p><u>Method:</u> The setup is in an anechoic chamber. The spectrum analyzer is connected to the measuring antenna. A radiated measurement is performed.</p> <p>The RBW is set in the range of 1% to 5% of the occupied bandwidth, with VBW ≥ 3 x RBW.</p> <p>The SPAN is wide enough to capture all products of the modulation process.</p> <p>A Peak detector is used.</p> <p>Measure is performed with OBW 99% function of the spectrum analyser.</p> <p>The tested equipment is set to transmit operation with modulation on low, mid and high channels.</p> |                            |                 | Pass    |
| Laboratory Parameters:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Required prior to the test | During the test |         |
| Ambient Temperature                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 20 to 30 °C                | 23°C ± 2        |         |
| Relative Humidity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 30 to 70 %                 | 48% ± 5         |         |
| Supplementary information:<br>Test location: SMEE<br>Test date: September 6 <sup>th</sup> , 2023. Tested by C. KRMICHE.                                                                                                                                                                                                                                                                                                                                                                                                                                          |                            |                 |         |

### Test Setup for radiated emission (Test fixture)



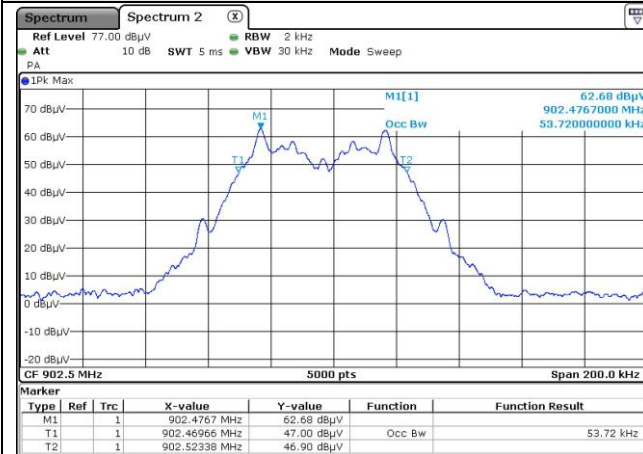
### Tabulated Results for Occupied Bandwidth

| Frequency (MHz) | 99% Occupied Bandwidth (kHz) |
|-----------------|------------------------------|
| 902.5           | 53.72                        |
| 915.0           | 53.80                        |
| 927.5           | 53.80                        |

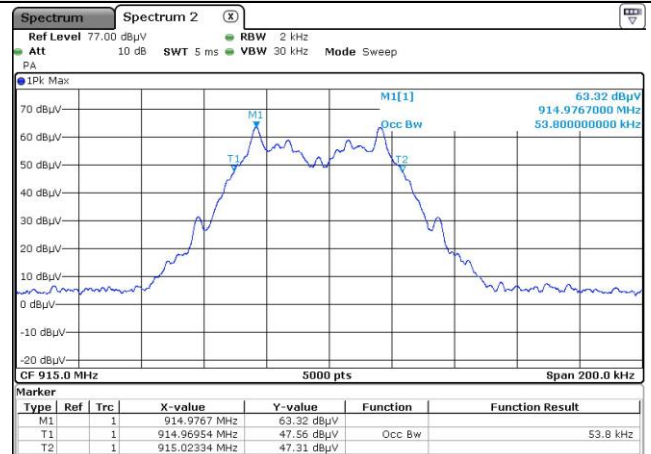
### Tabulated Results for Occupied Bandwidth

| Frequency (MHz) | 20dB Bandwidth (kHz) |
|-----------------|----------------------|
| 902.5           | 58.9                 |
| 915.0           | 58.8                 |
| 927.5           | 58.8                 |

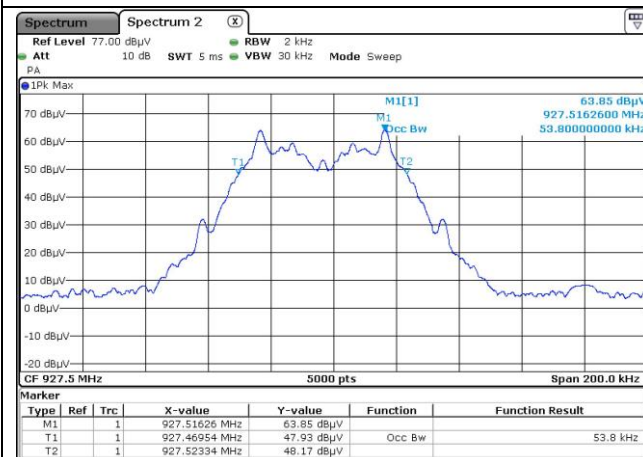
## Graphical representation of 99% Occupied Bandwidth



Low Channel



Middle Channel



High Channel

**Frequency band investigated:** 902 to 928MHz

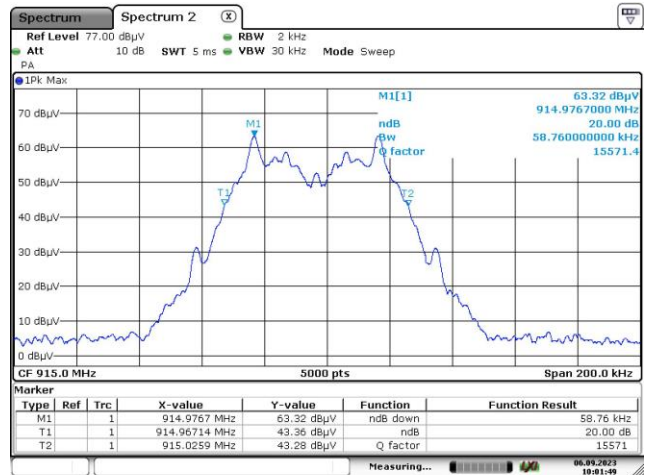
**RBW / VBW :** 2kHz / 30kHz

**Measurement detector:** Peak / Max hold

## Graphical representation of 20dB Occupied Bandwidth



Low Channel



High Channel



Middle Channel

Frequency band investigated: 902 to 928MHz

RBW / VBW : 2kHz / 10kHz

Measurement detector: Peak / Max hold

## 12. Test Equipment List

| Description          | Manufacturer     | Model         | ID          | Date Cal. | Nxt. Cal. |
|----------------------|------------------|---------------|-------------|-----------|-----------|
| Log-periodic antenna | EMCO             | 3146          | ANT-191-019 | 2021/7    | 2024/1    |
| Biconnic antenna     | COM-POWER        | AB- 900A      | ANT-201-021 | 2023/1    | 2025/1    |
| Horn antenna         | COM-POWER        | AH-118        | ANT-101-004 | 2021/7    | 2024/7    |
| High-Pass filter     | Wainwright Inst. | HK6-948-1200  | FIL-141-004 | 2023/4    | 2024/4    |
| RF cable             | HUBER+SUHNER     | SF126E / 2m   | CAB-231-043 | 2023/4    | 2024/4    |
| RF cable             | HUBER+SUHNER     | SF104E / 5.3m | CAB-231-044 | 2023/4    | 2024/4    |
| RF cable             | HUBER+SUHNER     | SF126E / 7m   | CAB-231-045 | 2023/4    | 2024/4    |
| Semi anechoic room   | COMTEST          | 218292        | CAG-201-002 | 2022/4    | 2025/2    |
| Antenna mast         | Innco- Systems   | MA4640-XP-ET  | MAT-201-002 | -         | -         |
| Turntable            | Innco- Systems   | CT0800        | PLA-141-001 | -         | -         |
| Turntable            | Innco- Systems   | DS1500-S-1t   | PLA-201-003 | -         | -         |
| Pre-amplifier        | COM-POWER        | 1-18GHz       | PRE-221-005 | 2023/4    | 2024/4    |
| Measuring Rec        | Rohde&Schwarz    | ESRP          | REC-151-002 | 2021/9    | 2024/3    |
| Spectrum analyzer    | Rohde&Schwarz    | FSV40         | ASP-171-004 | 2021/10   | 2024/4    |
| EMC Software         | NEXIO            | BAT EMC       | SOF-101-001 | -         | -         |
| Ref. Comb generator  | SMEE             | EMR-10M       | REF-111-002 | -         | -         |
| Ref. Comb generator  | SMEE             | EMR 1-6GHz    | REF-141-003 | -         | -         |

END OF REPORT