

**RRA-EMIESS23G928ADK-01Av1**This report cancels and replaces the test report N° **RRA-EMIESS23G928ADK-01Av0**

## Certification Radio test report

**According to the standard:****CFR 47 FCC PART 15****Equipment under test:****Novaterm® IGS 921 MHz****FCC ID: 2BEZD-NIGSV04****Company:****BERKEM DEVELOPPEMENT****Distribution:** Mr BOUTIN**(Company:** BERKEM DEVELOPPEMENT)**Number of pages:** 25 with 2 appendixes

Ed.	Date	Modified Page(s)	Technical Verification and Quality Approval	
			Name and Function	Visa
1	3-Mar-25	1, 2, 3, 4	M. DUMESNIL, Radio Laboratory Manager	

Duplication of this document 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.

Information in italics are declared by the manufacturer/customer and are under his responsibility

**DESIGNATION OF PRODUCT:** *Novaterm® IGS 921 MHz*

**Serial number (S/N):** 22-2FF-223

**Reference / model (P/N):** NIGS.921.1.5.24

**Firmware version:** 0.0.0

**MANUFACTURER:** *BERKEM DEVELOPPEMENT*

**COMPANY CERTIFYING THE PRODUCT:**

**Company:** *BERKEM DEVELOPPEMENT*

**Address:** 20, RUE JEAN DUVERT  
33290  
BLANQUEFORT  
FRANCE

**RESPONSIBLE:** Mr BOUTIN

**COMPANY SUBMITTING THE PRODUCT:**

**Company:** *BERKEM DEVELOPPEMENT*

**Address:** 20, RUE JEAN DUVERT  
33290  
BLANQUEFORT  
FRANCE

**Responsible:** Mr BOUTIN

**Person present during the tests:** Mr KAMAL Ibrahim – (The first day)

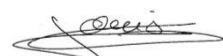
**DATES OF TEST:** From 9-Jan-24 to 10-Jan-24

**TESTING LOCATION:** EMITECH ANGERS laboratory at JUIGNE SUR LOIRE (49) FRANCE

FCC Accredited under US-EU MRA Designation Number: FR0009  
Test Firm Registration Number: 873677

**TESTED BY:** S. LOUIS

**VISA:**



**WRITTEN BY:** S. LOUIS

## CONTENTS

TITLE	PAGE
1. INTRODUCTION .....	4
2. PRODUCT DESCRIPTION .....	4
3. NORMATIVE REFERENCE .....	5
4. TEST METHODOLOGY .....	5
5. TEST EQUIPMENT CALIBRATION DATES .....	6
6. TESTS RESULTS SUMMARY .....	8
7. MEASUREMENT UNCERTAINTY .....	9
8. OCCUPIED BANDWIDTH .....	10
9. BAND EDGE .....	13
10. PEAK CONDUCTED OUTPUT POWER .....	15
11. RADIATED SPURIOUS EMISSIONS .....	17
12. PEAK CONDUCTED POWER SPECTRAL DENSITY .....	19
APPENDIX 1: TEST EQUIPMENT LIST .....	21
APPENDIX 2: RADIATED TEST SETUP .....	24

## REVISIONS HISTORY

Revision	Date	Modified pages	Modifications
0	29-Jan-24	/	Creation
1	03-Mar-25	1, 2, 3, 4	Update following a change in the product's marketing name

## 1. INTRODUCTION

This report presents the results of radio test carried out on the following radio equipment: **Novaterm® IGS 921 MHz**, in accordance with normative reference.

The equipment under test integrates:

- SRD Monofrequency transceiver operational in the band (902MHz – 928MHz).

## 2. PRODUCT DESCRIPTION

Class:	B
Utilization:	Residential
Antenna type and gain:	0.01 dBi / integral antenna
Operating frequency range:	From 902 MHz to 928 MHz
Frequency tested:	921MHz
Number of channels:	1
Channel spacing:	Not concerned
Modulation:	GFSK2
Power source:	3Vdc Lithium battery (CR2477X-HE / CR2477X-HO)

Power level, frequency range and channels characteristics are not user adjustable.  
The details pictures of the product and the circuit boards are joined with this file.

### 3. NORMATIVE REFERENCE

The standards and testing methods related throughout this report are those listed below. They are applied on the whole test report even though the extensions (version, date and amendment) are not repeated.

CFR 47 FCC Part 15 (2024) Radio Frequency Devices

ANSI C63.10 2013 Procedures for Compliance Testing of Unlicensed Wireless Devices.

558074 D01 15.247 Meas Guidance v05r02

Guidance for compliance measurements on digital transmission system, frequency hopping spread spectrum system, and hybrid system devices operating under section 15.247 of the FCC rules.

#### 4. TEST METHODOLOGY

Radio performance tests procedures given in CFR 47 part 15:

## Subpart C – Intentional Radiators

- Paragraph 203: Antenna requirement
- Paragraph 205: Restricted bands of operation
- Paragraph 207: Conducted limits
- Paragraph 209: Radiated emission limits; general requirements
- Paragraph 212: Modular transmitter
- Paragraph 215: Additional provisions to the general radiated emission limitations
- Paragraph 247: Operation within the bands 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz

**5. TEST EQUIPMENT CALIBRATION DATES**

Emitech Number	Model	Type	Last calibration	Calibration interval (years)	Next calibration due
0	BAT-EMC V3.18.0.26	Software	/	/	/
4088	R&S FSP40	Spectrum Analyzer	13/05/2022	2	12/05/2024
4393	Wainwright WLJS800-C11/60EE	Low Pass Filter	06/02/2023	3	05/02/2026
7171	R&S HL223	Antenna	19/05/2022	3	18/05/2025
7240	Emco 3110	Biconical antenna	17/03/2022	3	16/03/2025
7279	SUCOFLEX SF104 N 1.5m	Cable	20/05/2022	2	19/05/2024
7302	HP1200MHz	High-pass filter	16/08/2022	3	15/08/2025
7566	Testo 608-H1	Meteo station	12/12/2022	2	11/12/2024
8262	Flitek HP12/3200-5AA	High pass filter	16/08/2022	3	15/08/2025
8511	HP 8447D	Low-noise amplifier	16/11/2023	1	15/11/2024
8528	Schwarzbeck VHA 9103	Biconical antenna	19/05/2022	3	18/05/2025
8543	Schwarzbeck UHALP 9108A	Log periodic antenna	04/08/2021	3	03/08/2024
8732	Emitech	OATS	28/03/2022	3	27/03/2025
8750	La Crosse Technology WS-9232	Meteo station	20/11/2023	1	19/11/2024
8785	N-1.5m Emitech	Cable	23/02/2022	2	23/02/2024
8855	EMITECH	Turntable and mat controller	/	/	/
8874	N-20m Gyl Technologies	Cable	11/03/2022	2	10/03/2024
8896	ACQUISYS GPS8	Satellite synchronized frequency standard	/	/	/
9398	N-1.5m	cable	22/07/2022	2	21/07/2024
10730	Mini-circuit ZFL-1000LN	Low-noise amplifier	16/11/2023	1	15/11/2024
10759	COMTEST Cage 3	Anechoic chamber	/	/	/
10771	EMCO 3117	Antenna	30/11/2022	3	30/11/2025
10789	MATURO	Turntable and mat controller NCD	/	/	/
11832	N-8m - C&C	Cable	16/02/2022	2	16/02/2024
12590	LUCIX Corp S005180M3201	Low-noise amplifier	21/06/2023	1	20/06/2024
12911	Huber + Suhner N-2m	cable	20/05/2022	2	19/05/2024

Emitech Number	Model	Type	Last calibration	Calibration interval (years)	Next calibration due
14303	SUCOFLEX N-2m	cable	01/12/2022	2	30/11/2024
14475	Oregon Scientific BAR206	Meteo station	11/04/2023	1	10/04/2024
14831	Fluke 177	Multimeter	22/12/2023	2	21/12/2025
15666	R&S FSV40	Spectrum Analyzer	27/09/2022	2	26/09/2024
15883	SUCOFLEX	cable N 5m	08/02/2023	2	07/02/2025
15913	SUCOFLEX SF104 N 2.5m	Cable	01/12/2022	2	30/11/2024
17008	R&S ESW44	Test receiver	08/02/2023	1	08/02/2024
18413	MecHANC - N - 5m	Cable	15/02/2022	2	15/02/2024
19267	Radiall R412706124 - 6dB	Attenuator	06/12/2023	3	05/12/2026
/	GPIBShot V2.4	Software	/	/	/

## 6. TESTS RESULTS SUMMARY

### 6.1 CFR 47 part 15 requirements

Test procedure	Description of test	Respected criteria?				Comment
		Yes	No	NAp	NAs	
FCC Part 15.203	ANTENNA REQUIREMENT	X				Note 1
FCC Part 15.205	RESTRICTED BANDS OF OPERATION	X				
FCC Part 15.207	CONDUCTED LIMITS			X		Supplied by battery
FCC Part 15.209	RADIATED EMISSION LIMITS; general requirements	X				Note 2
FCC Part 15.212	MODULAR TRANSMITTERS			X		
FCC part 15.215	ADDITIONAL PROVISIONS TO THE GENERAL RADIATED EMISSION LIMITATIONS					
	(a) Alternative to general radiated emission limits	X				
	(b) Unwanted emissions outside of §15.247 frequency bands	X				Note 3
	(c) 20 dB bandwidth and band-edge compliance	X				
FCC Part 15.247	OPERATION WITHIN THE BANDS 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz					
	(a) (1) Hopping systems			X		
	(a) (2) Digital modulation techniques	X				Note 4
	(b) Maximum peak output power	X				Note 5
	(c) Operation with directional antenna gains > 6 dBi			X		
	(d) Intentional radiator	X				
	(e) Peak power spectral density	X				
	(f) Hybrid system			X		
	(g) Frequency hopping requirements			X		
	(h) Frequency hopping intelligence			X		
	(i) RF exposure compliance	X				

NAp: Not Applicable

NAs: Not Asked

Note 1: Integral antenna without standard connector.

Note 2: See FCC part 15.247 (d).

Note 3: See FCC part 15.209. Unwanted emissions levels are all below the fundamental emission field strength level.

Note 4: The minimum 6 dB bandwidth of the equipment is 501.5 kHz.

Note 5: Conducted measurement is not possible (integral antenna), so we used the radiated method in open field.

**7. MEASUREMENT UNCERTAINTY**

To declare, or not, the compliance with the specifications, it was not explicitly taken into account of uncertainty associated with the result(s)

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor  $k=2$ , which for normal distribution corresponds to a coverage probability of approximately 95%.

Parameter	Emitech Uncertainty
RF power, conducted	$\pm 0.8$ dB
Radiated emission valid to 26 GHz	
9kHz – 30MHz	$\pm 2.7$ dB
30MHz – 1GHz	$\pm 5.0$ dB
1GHz – 18GHz	$\pm 5.3$ dB
18GHz – 40GHz	$\pm 6.1$ dB
AC Power Lines conducted emissions	$\pm 3.4$ dB
Temperature	$\pm 1$ °C
Humidity	$\pm 5$ %

## 8. OCCUPIED BANDWIDTH

**Temperature (°C) : 20**

**Humidity (%HR): 32**

**Date : January 9, 2024**

**Technician : S. LOUIS**

**Standard: FCC Part 15**

**Test procedure:**

Method of paragraphs 11.8 of ANSI C63.10 (6dB Measurement)

Method of paragraphs 6.9.3 of ANSI C63.10 (99% Measurement)

**Test set up:**

Test realized in near field.

**Setting:**

<b>Measure</b>	<b>6dB</b>	<b>99%</b>
<b>Center frequency</b>	The centre frequency of the channel under test	
<b>Detector</b>	Peak	
<b>Span</b>	2 to 5 times the OBW	1.5 to 5 times the OBW
<b>RBW</b>	100kHz	1% to 5% of the OBW
<b>VBW</b>	300kHz	3 x RBW
<b>Trace</b>	Max hold	
<b>Sweep</b>	Auto	

**Test operating condition of the equipment:**

The equipment under test is blocked in continuous modulated transmission mode, at the highest output power level at which the transmitter is intended to operate.

We used for power source the internal battery of the equipment and we noted:

Voltage at the beginning of test (Vdc): 3.17

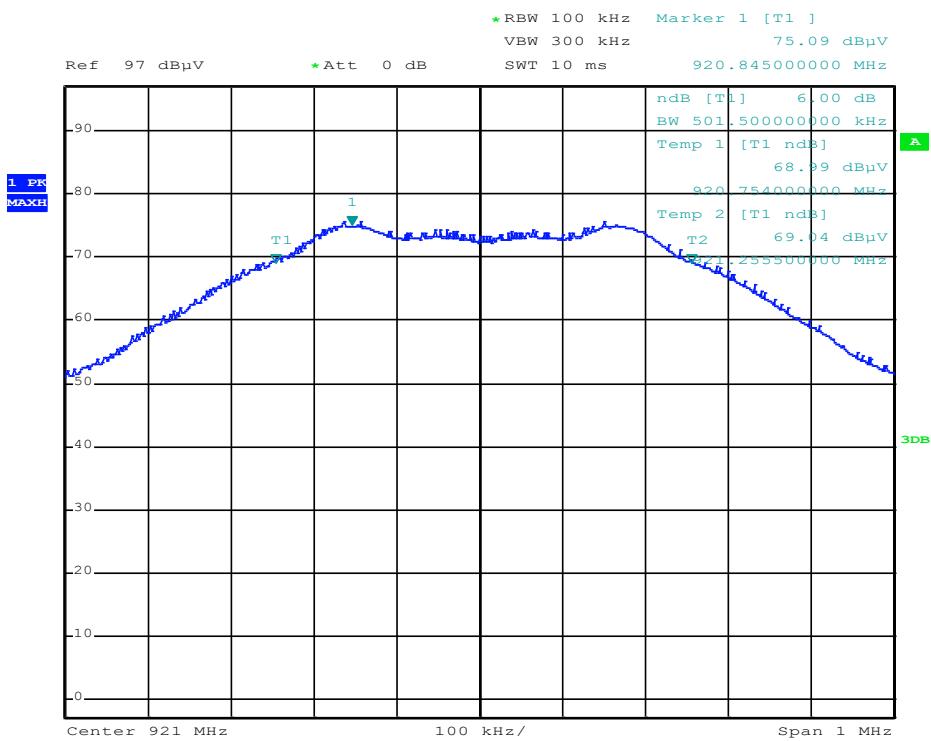
Voltage at the end of test (Vdc): 3.02

Percentage of voltage drop during the test (%): 4.73

## Results:

### Sample N° 1

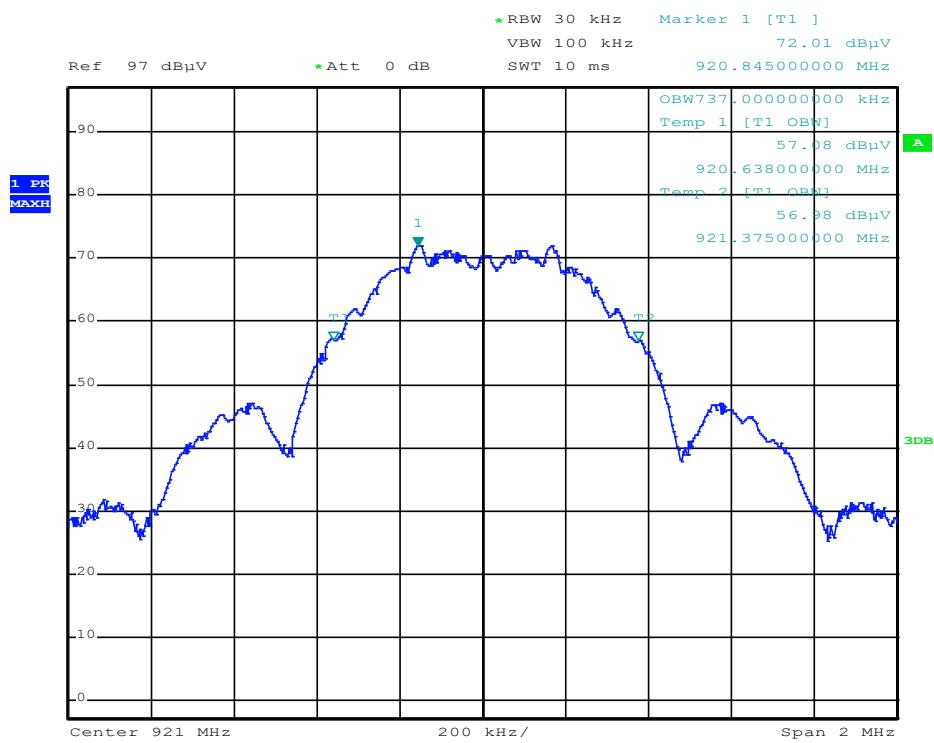
6dB bandwidth – Channel 921 MHz



### Limit:

Shall be at least 500 kHz

99% bandwidth – Channel 921 MHz



Measure realized for reporting only

**Test conclusion:**

RESPECTED STANDARD

**9. BAND EDGE**
**Temperature (°C) : 20**
**Humidity (%HR): 32**
**Date : January 20, 2024**
**Technician : S. LOUIS**
**Standard: FCC Part 15**
**Test procedure:**

Method of paragraph 11.13.2 of ANSI C63.10

Method of paragraph 11.13.3 of ANSI C63.10

**Test set up:**

Test realized in near field. All field strength measurements are correlated with the radiated maximum peak output power.

**Test operating condition of the equipment:**

The equipment under test is blocked in continuous modulated transmission mode, at the highest output power level at which the transmitter is intended to operate.

We used for power source the internal battery of the equipment and we noted:

Voltage at the beginning of test (Vdc): 3.17

Voltage at the end of test (Vdc): 3.02

Percentage of voltage drop during the test (%): 4.73

**Results:**

Lower Band Edge: From 900 MHz to 902 MHz

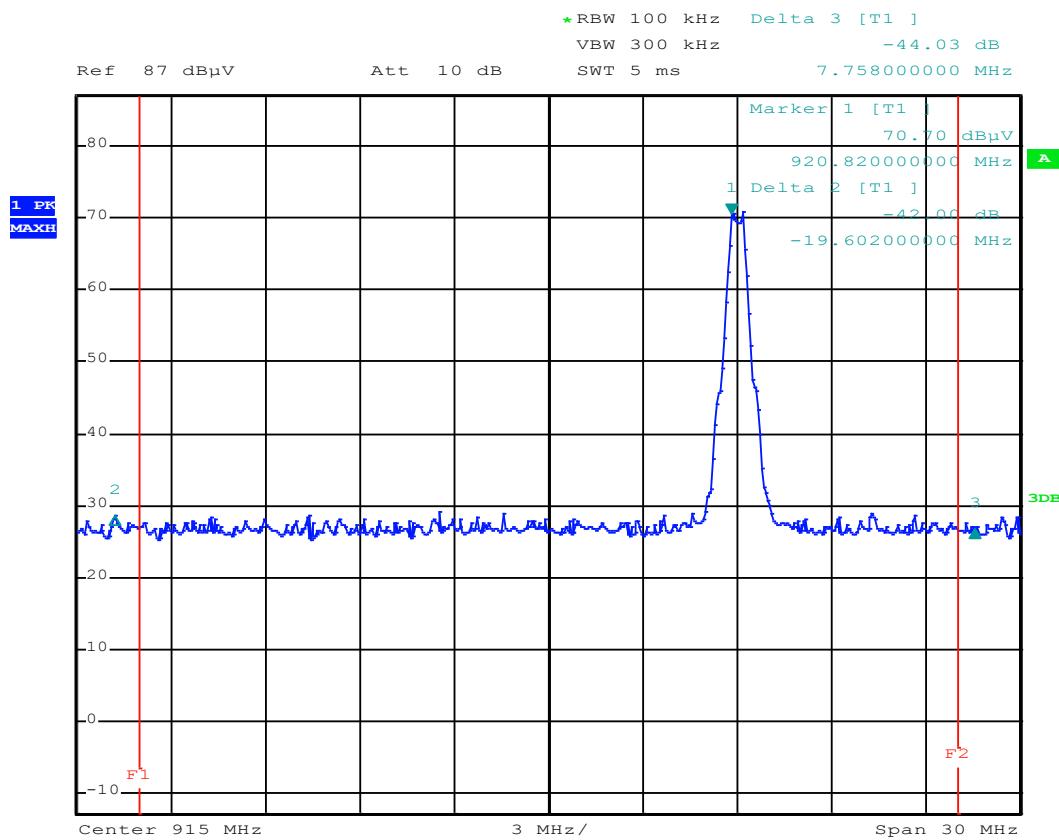
Upper Band Edge: From 928 MHz to 930 MHz

Sample N° 1      F = 921 MHz

Fundamental frequency (MHz)	Field Strength Level of fundamental (dB $\mu$ V/m) – Measured at 10m	Field Strength Level of fundamental (dB $\mu$ V/m) – Computed at 3m	Detector (Peak or Average)	Frequency of maximum Band-edges Emission (MHz)	Delta Marker (dB) (1)	Calculated Max Out-of Band Emission Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
921	90.10	100.56	Peak	901.218	42.00	58.56	80.56	22.00
921	90.10	100.56	Peak	928.578	44.03	56.53	80.56	24.03

(1) Marker-Delta method

## Transmission mode at 921MHz



## Test conclusion:

## RESPECTED STANDARD

**10. PEAK CONDUCTED OUTPUT POWER****Temperature (°C) : 13****Humidity (%HR): 32****Date : January 10, 2024****Technician : S. LOUIS****Standard: FCC Part 15****Test procedure:**

For FCC Part 15: paragraph 15.247 (b)

RBW $\geq$ DTS bandwidth method of paragraph 11.9.1.1 of ANSI C63.10.**Test set up: (Refer Appendix 2)**

First an exploratory radiated measurement was performed.

During this phase the product is oriented in these two normal positions.

Then the final measurement is realized with the product on the most critical orientation.

The system is tested in an open area test site (OATS), the EUT is placed on a rotating table, 0.8m from a ground plane.

Zero degree azimuths correspond to the front of the device under test.

See test setup in appendix 2.

**Distance of antenna: 10 meters****Antenna height: 1 to 4 meters****Antenna polarization:** vertical and horizontal (only the highest level is recorded)

The measurement of the radiated electro-magnetic field is realized with an analyser and peak detector. The resolution bandwidth is adjusted at 1 MHz and video bandwidth at 3 MHz. (11.9.1.1 of ANSI C63.10).

Finally the radiated electro-magnetic field is converted in dBm with the following formula:

EIRP(dBm) = E (dB $\mu$ V/m) + 20log(D) - 104.8; where D is the measurement distance in meters and antenna Gain = 0.01 dBi (integral PCB Antenna)**Equipment under test operating condition:**

The equipment under test is blocked in continuous modulated transmission mode, at the highest output power level at which the transmitter is intended to operate.

We used for power source the internal battery of the equipment and we noted:

Voltage at the beginning of test (Vdc): 3.19

Voltage at the end of test (Vdc): 3.14

Percentage of voltage drop during the test (%): 1.56

**Results:**
Sample N° 1      F = 921 MHz

	Electro-magnetic field at 10m (dB $\mu$ V/m):	Maximum Peak conducted output power (1)		Limit (W)
		(dBm)	(W)	
Nominal supply voltage:	90.10	5.32	0.00340	1

Polarization of test antenna: Horizontal (height: 110 cm)

Position of equipment: Position 2 - (azimuth: 41 degrees)

Maximum Peak conducted output power:

$$\text{EIRP(dBm)} = \text{E (dB $\mu$ V/m)} + 20\log(\text{D}) - 104.8$$
; where D is the measurement distance in meters and antenna Gain = 0.01 dBi.

**Test conclusion:**

RESPECTED STANDARD

**11. RADIATED SPURIOUS EMISSIONS****Temperature (°C) : 20****Humidity (%HR): 32 / 36****Date : January 9, 2024 and  
January 10, 2024****Technician : S. LOUIS****Standard: FCC Part 15****Test procedure:**

For FCC Part 15: paragraph 15.205, paragraph 15.209, paragraph 15.247 (d)

Emissions in non-restricted frequency bands method of paragraph 11.11 of ANSI C63.10

Emissions in restricted frequency bands method of paragraph 11.12 of ANSI C63.10

**Test set up: (Refer Appendix 2)**

First an exploratory radiated measurement was performed.

During this phase the product is oriented in these two normal positions.

Then the final measurement is realized with the product on the most critical orientation.

The measure is realized on open area test site under 1 GHz and in anechoic chamber above 1 GHz.

When the system is tested in an open area test site (OATS), the EUT is placed on a rotating table, 0.8m from a ground plane.

When the system is tested in anechoic chamber, the EUT is placed on a rotating table, 1.5 m from a ground plane.

Zero degree azimuths correspond to the front of the device under test.

See test setup in appendix 2.

**Frequency range:** From 9 kHz to 10GHz - 10<sup>th</sup> harmonic of the highest fundamental frequency (921MHz)**Detection mode:** Quasi-peak (F < 1 GHz)      Peak / Average (F > 1 GHz)**Bandwidth:**  
200Hz (9 kHz < F < 150kHz)  
9 kHz (150 kHz < F < 30MHz)  
120 kHz (30 MHz < F < 1 GHz)  
100 kHz / 1 MHz (F > 1 GHz)**Distance of antenna:** 10 meters (in open area test site) / 3 meters (in anechoic room)**Antenna height:** 1 to 4 meters (in open area test site) / 1.5 meter (in anechoic room)**Antenna polarization:** vertical and horizontal (only the highest level is recorded)

### Equipment under test operating condition:

The equipment under test is blocked in continuous modulated transmission mode, at the highest output power level at which the transmitter is intended to operate.

We used for power source the internal battery of the equipment and we noted:

Voltage at the beginning of test (Vdc): 3.16

Voltage at the end of test (Vdc): 3.03

Percentage of voltage drop during the test (%): 4.11

### Results:

Sample N° 1 F = 921 MHz

Frequencies (MHz)	Detector P QP Av	Antenna height (cm)	RBW (kHz)	Position	Polarization H: Horizontal V: Vertical	Field strength Measured at 3 m (dB $\mu$ V/m)	Limits at 3 m (dB $\mu$ V/m)	Margin (dB)
1842.7	P	165	100	1	H	41.62	80.56	38.94
2762.5 (1)	P	173	1000	2	H	48.19 (2)	74	25.81
3684.4 (1)	P	193	1000	2	V	44.83 (2)	74	29.17
4604.2 (1)	P	144	1000	2	V	47.72 (2)	74	26.28
5524.9	P	173	100	1	H	49.61	80.56	30.95
6448.3	P	172	100	1	V	53.36	80.56	27.20
7366.6 (1)	P	202	1000	1	H	50.39 (2)	74	23.61
8287.6 (1)	P	181	1000	2	V	58.82	74	15.18
8287.6 (1)	Av	181	1000	2	V	53.15	54	0.85

P= Peak, QP=Quasi-peak, Av=Average

(1) Restricted bands of operation in 15.205

(2) The peak level is lower than the average limit (54 dB $\mu$ V/m)

**Applicable limits:** In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power.

The highest level recorded in a 100 kHz bandwidth is 100.56 dB $\mu$ V/m at the frequency of 921MHz.

So the applicable limit is 80.56 dB $\mu$ V/m.

In addition, radiated emissions which fall in the restricted band, as defined in section 15.205 (a), must also comply with the radiated emission limits specified in section 15.209 (a) (see section 15.205 (c)).

### Test conclusion:

RESPECTED STANDARD

**12. PEAK CONDUCTED POWER SPECTRAL DENSITY****Temperature (°C) :** 13**Humidity (%HR):** 32**Date :** January 10, 2024**Technician :** S. LOUIS**Standard:** FCC Part 15**Test procedure:**

For FCC Part 15: paragraph 15.247 (e), paragraph 15.247 (f)

PKPSD (Peak PSD) method of paragraph 11.10.2 of ANSI C63.10

**Test set up:** (Refer Appendix 2)

First an exploratory radiated measurement was performed.

During this phase the product is oriented in these two normal positions.

Then the final measurement is realized with the product on the most critical orientation.

The system is tested in an open area test site (OATS), the EUT is placed on a rotating table, 0.8m from a ground plane.

Zero degree azimuths correspond to the front of the device under test.

See test setup in appendix 2

**Distance of antenna:** 10 meters**Antenna height:** 1 to 4 meters**Antenna polarization:** vertical and horizontal (only the highest level is recorded)

The measurement of the radiated electro-magnetic field is realized with an analyser.

Span:	750 kHz
Resolution bandwidth:	3 kHz
Video bandwidth:	10 kHz
Detector:	Peak
Number of points:	2001
Sweep time:	Auto
Trace mode:	MaxHold

Then the peak marker function is used.

Finally the radiated electro-magnetic field is converted in dBm with the following formula:

EIRP(dBm) = E (dB $\mu$ V/m) + 20log(D) - 104.8; where D is the measurement distance in meters and antenna Gain = 0.01 dBi.

### Equipment under test operating condition:

The equipment under test is blocked in continuous modulated transmission mode, at the highest output power level at which the transmitter is intended to operate.

We used for power source the internal battery of the equipment and we noted:

Voltage at the beginning of test (Vdc): 3.19

Voltage at the end of test (Vdc): 3.14

Percentage of voltage drop during the test (%): 1.56

Sample N° 1       $F = 921 \text{ MHz}$

	Electro-magnetic field (dB $\mu$ V/m): At 10 meters	Maximum Peak conducted power density(1) (dBm / 3 kHz)	Limit (dBm / 3 kHz)
<b>Nominal supply voltage: 3Vdc</b>	77.6	-7.17	8

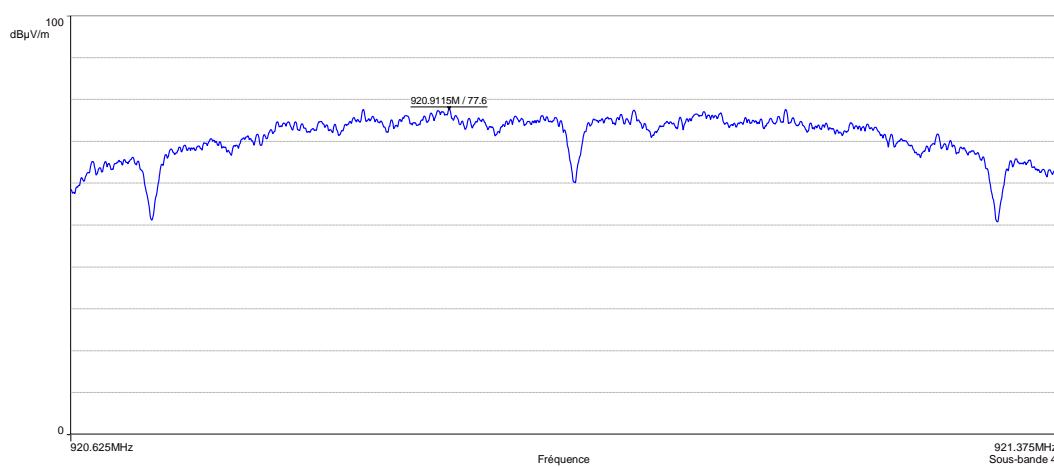
Polarization of test antenna: horizontal (height: 110 cm)

Position of equipment: Position 2 - (azimuth: 41 degrees)

Maximum Peak conducted output power:

$EIRP(\text{dBm}) = E(\text{dB}\mu\text{V/m}) + 20\log(D) - 104.8$ ; where D is the measurement distance in meters and antenna

Declared maximum antenna gain: 0.01 dBi



### Test conclusion:

RESPECTED STANDARD

□□□ End of report, 2 appendixes to be forwarded □□□

## APPENDIX 1: Test equipment list

### Occupied bandwidth

TYPE	MANUFACTURER	EMITECH NUMBER
Satellite synchronized frequency standard GPS8	ACQUISYS	8896
Spectrum Analyzer FSP40	Rohde & Schwarz	4088
Log periodic antenna UHALP 9108A	Schwarzbeck	8543
N-2M Cable	Huber + Suhner	12911
N-5M Cable	MechANC	18413
Multimeter 177	Fluke	14831
Meteo station WS-9232	La Crosse Technology	8750
Software	GPIBShot V2.4	/

### Band edge

TYPE	MANUFACTURER	EMITECH NUMBER
Satellite synchronized frequency standard GPS8	ACQUISYS	8896
Spectrum Analyzer FSP40	Rohde & Schwarz	4088
Log periodic antenna UHALP 9108A	Schwarzbeck	8543
N-2M Cable	Huber + Suhner	12911
N-5M Cable	MechANC	18413
Multimeter 177	Fluke	14831
Meteo station WS-9232	La Crosse Technology	8750
Software	GPIBShot V2.4	/

### Peak conducted output power

TYPE	MANUFACTURER	EMITECH NUMBER
Open test site	EMITECH	8732
Turntable and mat controller	EMITECH	8855
Satellite synchronized frequency standard GPS8	ACQUISYS	8896
Test receiver ESW44	Rohde & Schwarz	17008
Log periodic antenna HL223	Rohde & Schwarz	7171
N-1.5m-3GHz OATS Cable	GYL TECHNOLOGIES	8785
N-20m-1GHz OATS Cable	EMITECH	8874
N-8m-3GHz OATS Cable	C & C	11832
Attenuator 6dB 6GHz 1W	Radiall	19267
Multimeter 177	Fluke	14831
Meteo station BAR 206	Oregon Scientific	14475
Software	BAT-EMC V3.18.0.26	0000

**Radiated spurious emissions**

TYPE	MANUFACTURER	EMITECH NUMBER
Open test site	EMITECH	8732
Turntable and mat controller	EMITECH	8855
Full anechoic chamber	EMITECH	10759
Turntable and mat controller NCD	MATURO	10789
Satellite synchronized frequency standard GPS8	ACQUISYS	8896
Test receiver ESW44	Rohde & Schwarz	17008
Spectrum Analyzer FSV40	Rohde & Schwarz	15666
Biconical antenna VHA 9103	Schwarzbeck	8528
Biconical antenna 3110	Emco	7240
Log periodic antenna HL223	Rohde & Schwarz	7171
Log periodic antenna UHALP 9108A	Schwarzbeck	8543
Antenna 3117	ETS-Lindgren	10771
Low-noise amplifier 8447D	Hewlett Packard	8511
Low-noise amplifier ZFL-1000LN	Mini-circuit	10730
Low-noise amplifier S005180M3201	LUCIX Corp.	12590
N-1.5M Cable	SUCOFLEX	7279
N-2M Cable	Huber + Suhner	12911
N-5M Cable	MechANC	18413
N-1.5M Cable	SUCOFLEX	9398
N-2M Cable	SUCOFLEX	14303
N-5M Cable	SUCOFLEX	15883
N-2.5M Cable	H & S	15913
N-1.5m-3GHz OATS Cable	GYL TECHNOLOGIES	8785
N-20m-1GHz OATS Cable	EMITECH	8874
N-8m-3GHz OATS Cable	C & C	11832
Low pass filter WLJS800-C11/60EE	Wainwright	4393
High pass filter HP12/1200-5AA	Filttek	7302
High pass filter HP12/3200-5AA	Filttek	8262
Multimeter 177	Fluke	14831
Meteo station 608-H1	Testo	7566
Meteo station WS-9232	La Crosse Technology	8750
Meteo station BAR 206	Oregon Scientific	14475
Software	BAT-EMC V3.18.0.26	0000

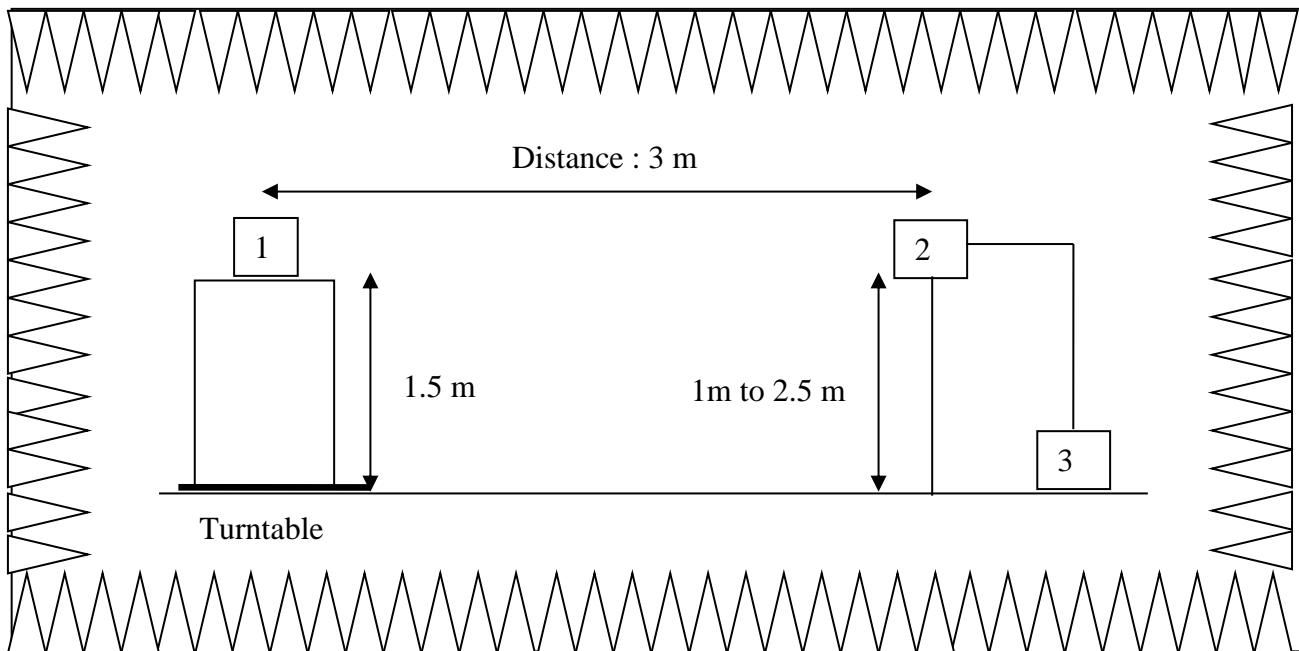
### Peak conducted power spectral density

TYPE	MANUFACTURER	EMITECH NUMBER
Open test site	EMITECH	8732
Turntable and mat controller	EMITECH	8855
Satellite synchronized frequency standard GPS8	ACQUISYS	8896
Test receiver ESW44	Rohde & Schwarz	17008
Log periodic antenna HL223	Rohde & Schwarz	7171
N-1.5m-3GHz OATS Cable	GYL TECHNOLOGIES	8785
N-20m-1GHz OATS Cable	EMITECH	8874
N-8m-3GHz OATS Cable	C & C	11832
Attenuator 6dB 6GHz 1W	Radiall	19267
Multimeter 177	Fluke	14831
Meteo station BAR 206	Oregon Scientific	14475
Software	BAT-EMC V3.18.0.26	0000

## APPENDIX 2: Radiated Test Setup

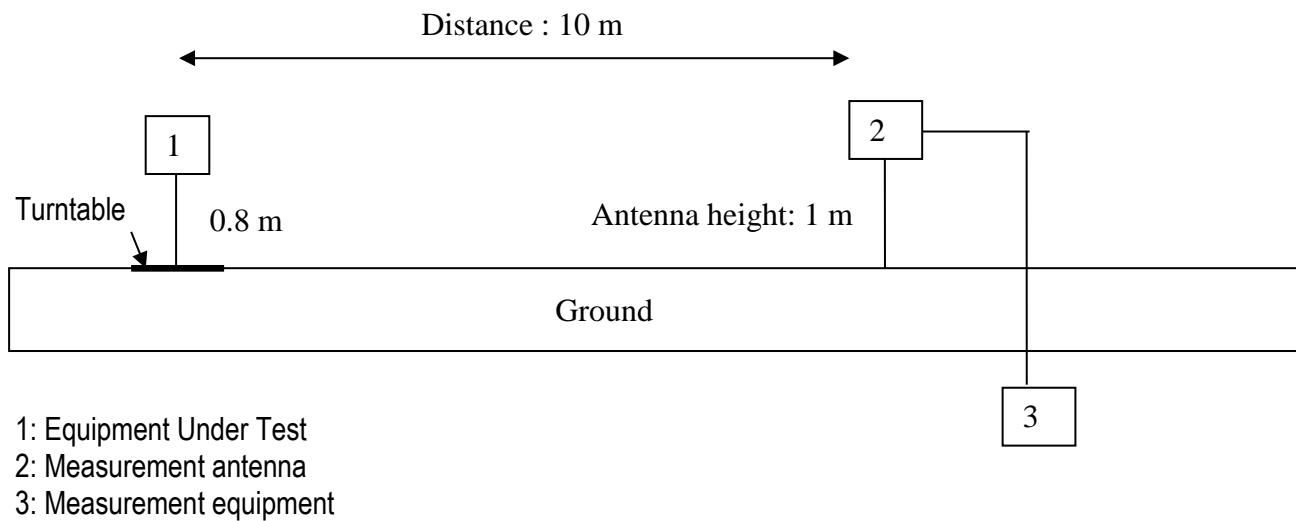
Anechoic chamber setup

Above 1 GHz



### Open area setup

#### Below 30 MHz



#### Between 30 MHz and 1 GHz

