



Test report issued under the responsibility of:  
EMITECH MONTPELLIER laboratory  
MRA US-EU Designation Number: FR0006  
Canadian CAB Identifier: FR0003

## EMF TEST REPORT

KDB 447498 D01 V06  
RSS-102 - Issue 5, March 2015

**Company** ..... : **XPLORER**  
Address..... : 40 chemin du Moulin  
31320 MERVILLA  
FRANCE

**Test item description.** ..... : **Device for metal detecting in hobby use**  
Trade Mark. .... : XTREM HUNTER  
Manufacturer..... : XP METAL DETECTORS  
Model/Type reference..... : XTR115 / XTREM HUNTER  
FCC ID..... : XFJXTR115  
IC. .... : 8392A-XTR115  
Ratings..... : 3.4Vdc to 4.2Vdc

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

**Report Reference No.** ..... : **RT-EVE-23B416-1A**  
Test procedure. .... : FCC IC Certification  
Diffusion..... : Mr LOUBET  
Applicant's name. .... : XPLORER  
Date of issue..... : August 21, 2023  
Total number of pages..... : 9  
Revision..... : 0  
Modified page(s)..... : Creation  
Compiled by..... : Alexis TOUZET  
Approved by (+ signature). .... : Olivier HEYER (Laboratory Manager)



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

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**REVISION HISTORY:**

<b>Revision</b>	<b>Date</b>	<b>Modified pages</b>	<b>Modifications</b>
0	August 21, 2023	/	Creation

## 1. GENERAL INFORMATIONS

This document submits the results of Radio tests performed on the equipment **Wireless metal detection sensor Disk FMF 22cm** (denominated hereafter E.U.T.: equipment under test) according to document(s) listed in §2 of this test report.

<b>TESTING PROCEDURE AND TESTING LOCATION:</b>					
<b>Testing Location</b> ..... : EMITECH MONTPELLIER laboratory					
Address. .... : 145 rue de Massacan					
34740 VENDARGUES					
FRANCE					
Test procedure. .... : FCC IC Certification					
Tested by ..... : Olivier AELBRECHT & Alexis TOUZET					
Test supervisor ..... : None					
Date of receipt of test item ..... : N/A					
Date (s) of performance of tests ..... : From May 2 <sup>nd</sup> to July 11 <sup>th</sup> of 2023					
<b>APPLICANT'S GENERAL INFORMATIONS:</b>					
<b>Company name</b> ..... : XPLOER					
Company address. .... : 40 chemin du Moulin					
31320 MERVILLA					
FRANCE					
Person(s) present during the tests. .... : No representative for company attended the tests.					
Responsible. .... : Mr LOUBET					
<b>GENERAL REMARKS:</b>					
<p><b>The information in italics is declared by the manufacturer and is under his responsibility</b>  <b>The test results presented in this report relate only to the object tested.</b>  <b>The results contained in this report reflect the results for this particular model and serial number. It is the responsibility of the manufacturer to ensure that all production models meet the intent of the requirements detailed within this report.</b></p> <p>"(see Enclosure #)" refers to additional information appended to the report.          "(see appended table)" refers to a table appended to the report.          Throughout this report the decimal separator is point.</p>					
<b>POSSIBLE TEST CASE VERDICTS:</b>					
Test case does not apply to the test object.: N/A					
Test case not performed..... : N/P					
Test object does meet the requirement..... : P (Pass)					
Test object does not meet the requirement. F (Fail)					
..... :					
<b>DEFINITIONS AND ABBREVIATIONS:</b>					
E.U.T.	Equipment under test	AE	Ancillary equipment	Pk	Peak detector
RBW	Resolution bandwidth	VBW	Video bandwidth	QP	Quasi-peak detector
OATS	Open area test site	FAR	Full anechoic room	Av	Average detector
VP	Vertical Polarization	HP	Horizontal Polarization	RMS	Root Mean Square
RF	Radio frequency	NTR	Nothing to report	N/C	Not communicated

## 2. REFERENCE DOCUMENT(S)

### NORMATIVE REFERENCES:

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

**FCC 47 CFR PART 15: April 2020**

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

**KDB 447498 D01 v06**

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

**RSS-102 - Issue 5, March 2015**

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

**RR-EVE-23B416-4A Ed.0 and RR-EVE-23B416-5A Ed.0**

Radio Test Report Emitech.

Although the product standard uses obsolete technical standards, the latest versions of standards achievable by the laboratory will be used for testing.

### INFORMATIVE REFERENCES:

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

### 3. EQUIPMENT TECHNICAL DESCRIPTION

#### 3.1. Test Conditions

Test item description. .... : Device for metal detecting in hobby use  
Model/Type reference..... : XTR115 / XTREM HUNTER  
Trade Mark. .... : XTREM HUNTER  
FCC ID..... : XFJXTR115  
IC. .... : 8392A-XTR115  
Serial number (S/N)..... : Not communicated  
Part number (P/N). .... : Not communicated  
Software version..... : *Not communicated*  
Firmware version. .... : *Not communicated*  
Type of sample. .... : Standard equipment  
Function(s)..... : Wireless object detection sensor  
Manufacturer name. .... : XP METAL DETECTORS  
Address. .... : 40 chemin du Moulin  
31320 MERVILLA  
FRANCE

**General product information:**

N/A

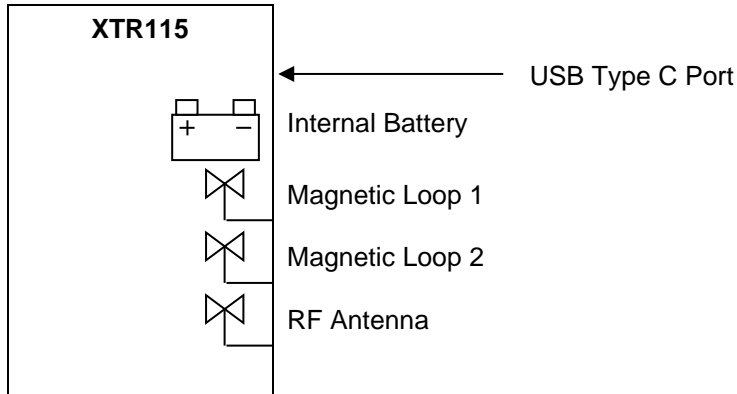
#### 3.2. EUT Mechanical and Electrical Design

Power supply. .... : 3.7Vdc  
Power supply range..... : 3.4Vdc to 4.2Vdc  
Power type..... : *Battery powered*  
Power (W)..... : 2.2  
Nominal current (A). .... : 0.6  
Dimensions (L x W x H) (m). .... : 0.50 x 0,35 x 1.25  
Weight (kg). .... : 2.6  
Temperature range (°C). .... : -10 to 40  
Ground bounding strap..... : No

**Comments:**

N/A

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



PORT	NAME	TYPE	LENGTH	CABLE TYPE	COMMENTS
0	Main frame	N/E	N/A	Plastic	
1	USB Type C Port	DC	N/A	N/A	Used for Battery charging (5Vdc)
2	Internal Battery	DC	N/A	N/A	3.7Vdc
3	Magnetic Loop 1	RF	N/A	N/A	From 5kHz to 95.55kHz
4	Magnetic Loop 2	RF	N/A	N/A	From 5kHz to 95.55kHz
5	RF Antenna	RF	N/A	N/A	2.4GHz

AC/DC : AC/DC Converter port

I/O .....: Input or Output port

N/E .....: Non Electrical port

AC.....: Alternative current port

TP .....: Telecommunication port

DC.....: Direct current port

RF .....: Radio frequency port

### 3.4. Supporting Equipment Used During Test

Sample subject to the tests was tested with following equipment.

PRODUCT TYPE	MANUFACTURER	MODEL	N°EMITECH / COMMENTS
Remote control	XPLORER	DEUS II	Used to set the EUT in test mode through 2.4GHz radio communication
Power adapter (AC/DC)	XPLORER	TO38-1	Used for conducted emission

### 3.5. EUT Radio Specifications

<b>a) GENERAL INFORMATIONS</b>	
According to manufacturer's declarations :	
EUT type.....	<i>Transceiver</i>
Technology .....	<i>SRD (Metal and object detection sensors) and SRD 2.4GHz</i>
Environmental profile.....	<i>Data transmissions</i>
Temperature range.....	<i>-10°C to +40°C</i>
Antenna type .....	<i>Integral</i>
Antenna Gain.....	<i>Not communicated</i>
<b>Comments:</b>	
<i>N/A</i>	
<b>b) TRANSMITTER PARAMETERS (Tx)</b>	
Frequency bands.....	<i>5 kHz to 95.55 kHz 2400 MHz to 2483.5MHz</i>
RF Power.....	<i>Not communicated</i>
Number of channels / Separation .....	<i>Multiple</i>
Modulation type .....	<i>GFSK</i>
Duty cycle .....	<i>Not communicated</i>
Tested frequency.....	<i>5 kHz low Channel 95.55 kHz High Channel 2406 MHz Low channel 2440 MHz Mid channel 2476 MHz High channel</i>
<b>c) RECEIVER PARAMETERS (Rx)</b>	
Frequency bands.....	<i>5 kHz to 95.55 kHz 2400 MHz to 2483.5MHz</i>
Category/Class .....	<i>N/A</i>
Bandwidth .....	<i>N/A 2MHz</i>

## 4. RF EXPOSURE

<b>Reference document:</b>	KDB 447498 D01 v06 and RSS 102
<b>Calculation method:</b>	KDB 447498 D01 v06 §4.3.1
<p><b>General test setup (in test report RR-EVE-23B416-4A Ed.0 and RR-EVE-23B416-5A Ed.0):</b> It is acceptable to employ a different resolution bandwidth, and a correspondingly different peak emission limit, following the procedures described in §15.521.</p> <p>For <math>f &gt; 1\text{GHz}</math>, EUT is set on an insulating support at 150cm above the ground reference plane.</p> <p>Measurements are performed in a semi-anechoic chamber. For portable equipments a research of maximum level is done on the 3 axes. Only the highest levels are recorded.</p>	

### 4.1.FCC Rules

#### Magetc field SRD (5 kHz – 99.55 kHz)

TESTED CONFIGURATION	MAGNETIC FIELD LEVEL (dB $\mu$ A/m)	ELECTRIC FIELD LEVEL (dB $\mu$ V/m)	EQUIVALENT POWER VALUE (mW)	LIMIT (mW)
Low channel (5 kHz)	48.25	99.75	<b>31.47</b>	<b>&gt; 1185</b>
High channel (99.55 kHz)	-7.85	43.65	<b>0.000077</b>	<b>&gt; 948</b>

With:

- Electric field (dB $\mu$ V/m) = Magnetic field (dB $\mu$ A/m) + 51.5
- Equivalent Power value(W) = (Electric field (V/m)x D(m))<sup>2</sup>/30

Equivalent power is lower than SAR Test Exclusion Thresholds defined in §4.3.1 and Appendix C of KDB 447498 D01 v06

#### Electric field SRD (2406 MHz – 2476 MHz)

TESTED CONFIGURATION	EIRP (dBm)	EIRP (mW)	LIMIT (mW)
Low channel (2406 MHz)	0.96	1.25	<b>&gt; 10</b>
Mid channel (2440 MHz)	0.15	1.04	<b>&gt; 10</b>
High channel (2476 MHz)	3.08	2.03	<b>&gt; 8</b>

Equivalent power is lower than SAR Test Exclusion Thresholds defined in §4.3.1 and Appendix A of KDB 447498 D01 v06



## 4.2. ISED Rules

### Magetc field (5 kHz – 99.55 kHz)

TESTED CONFIGURATION	MAGNETIC FIELD LEVEL (dBμA/m)	ELECTRIC FIELD LEVEL (dBμV/m)	EQUIVALENT POWER VALUE (mW)	LIMIT (mW)
Low channel (5 kHz)	48.25	99.75	<b>31.47</b>	<b>71</b>
High channel (99.55 kHz)	-7.85	43.65	<b>0.000077</b>	<b>71</b>

With:

- Electric field (dBμV/m) = Magnetic field (dBμA/m) + 51.5
- Equivalent Power value(W) = (Electric field (V/m)x D(m))<sup>2</sup>/30

Equivalent power is lower than SAR Test Exclusion Thresholds defined in §2.5.1 of RSS 102

### Electric field SRD (2406 MHz – 2476 MHz)

TESTED CONFIGURATION	EIRP (dBm)	EIRP (mW)	LIMIT (mW)
Low channel (2406 MHz)	0.96	1.25	<b>&gt; 4</b>
Mid channel (2440 MHz)	0.15	1.04	<b>&gt; 4</b>
High channel (2476 MHz)	3.08	2.03	<b>3.95</b>

Equivalent power is lower than SAR Test Exclusion Thresholds defined in §2.5.1 of RSS 102

●●● End of evaluation report ●●●