



Test report issued under the responsibility of:
EMITECH MONTPELLIER laboratory
MRA US-EU Designation Number: FR0006
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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)



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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:

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

1. GENERAL INFORMATION

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.

TESTING PROCEDURE AND TESTING LOCATION:					
Testing Location : 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 nd to July 11 th of 2023					
APPLICANT'S GENERAL INFORMATION:					
Company name : 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					
GENERAL REMARKS:					
The information in italics is declared by the manufacturer and is under his responsibility The test results presented in this report relate only to the object tested. 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. "(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.					
POSSIBLE TEST CASE VERDICTS:					
Test case does not apply to the test object .: N/A Test case not performed : N/P Test object does meet the requirement : P (Pass) Test object does not meet the requirement . F (Fail) :					
DEFINITIONS AND ABBREVIATIONS:					
E.U.T.	Equipment under test	AE	Ancillary equipment	Pk	Peak detector
RBW	Resolution bandwidth	VBW	Video bandwidth	QP	Quasi-peak detector
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

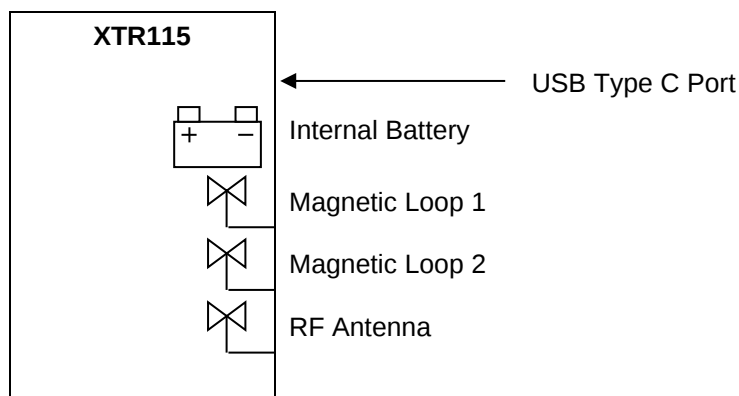
3.2. EUT Mechanical and Electrical Design

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

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

4. RF EXPOSURE

Reference document:	KDB 447498 D01 v06 and RSS 102
Calculation method:	KDB 447498 D01 v06 §4.3.1
General test setup (in test report RR-EVE-23B416-4A Ed.0 and RR-EVE-23B416-5A Ed.0): It is acceptable to employ a different resolution bandwidth, and a correspondingly different peak emission limit, following the procedures described in §15.521. For $f > 1\text{GHz}$, EUT is set on an insulating support at 150cm above the ground reference plane. 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.	

4.1. FCC Rules

Magnetic field SRD (5 kHz – 99.55 kHz)

TESTED CONFIGURATION	MAGNETIC FIELD LEVEL (dB μ A/m)	ELECTRIC FIELD LEVEL (dB μ V/m)	EQUIVALENT POWER VALUE (mW)	LIMIT (mW)
Low channel (5 kHz)	48.25	99.75	31.47	> 1185
High channel (99.55 kHz)	-7.85	43.65	0.000077	> 948

With:

- Electric field (dB μ V/m) = Magnetic field (dB μ A/m) + 51.5
- Equivalent Power value(W) = (Electric field (V/m)x D(m))²/30

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	> 10
Mid channel (2440 MHz)	0.15	1.04	> 10
High channel (2476 MHz)	3.08	2.03	> 8

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

Magnetic 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	31.47	71
High channel (99.55 kHz)	-7.85	43.65	0.000077	71

With:

- Electric field (dBμV/m) = Magnetic field (dBμA/m) + 51.5
- Equivalent Power value(W) = (Electric field (V/m) x D(m))² / 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	> 4
Mid channel (2440 MHz)	0.15	1.04	> 4
High channel (2476 MHz)	3.08	2.03	3.95

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

●●● End of evaluation report ●●●