



Test report issued under the responsibility of:  
EMITECH LYON laboratory  
MRA US-EU Designation Number: FR0013  
Canadian CAB Identifier : FR0007

## EMF TEST REPORT

KDB 447498 D01 V06

**Company** ..... : **MICROOLED**  
**Address**..... : BHT2  
17 rue Felix Esclangon  
38000 GRENOBLE - FRANCE

**Test item description** ..... : **Connected glasses with Head Up Display**  
**Trade Mark** ..... : Activelook  
**Manufacturer** ..... : Microoled  
**Model/Type reference**..... : ISP4520-US  
**FCC ID**..... : 2AY23-2001  
**IC** ..... : 27140-2001  
**Ratings**..... : 3.2Vdc to 4.2Vdc

**Testing Laboratory** ..... : **EMITECH LYON laboratory**  
**Address**..... : ZI de Mi-Plaine  
7 rue Georges Méliès  
69680 CHASSIEU - France

**Report Reference No** ..... : **R410-20-105636-1A**  
**Test procedure** ..... : FCC IC Certification  
**Diffusion**..... : Mr ARBET-PONT  
**Applicant's name** ..... : MICROOLED  
**Date of issue**..... : November 4, 2021  
**Total number of pages**..... : 14  
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**Modified page(s)**..... : Creation  
**Compiled by**..... : T VINAY  
**Approved by (+ signature)**..... : Olivier HEYER (Laboratory Manager)

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## 1. GENERAL INFORMATIONS

This document submits the results of SAR evaluation of the equipment **Connected glasses with Head Up Display** (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 Laboratory</b> .....	EMITECH LYON laboratory		
<b>Address</b> .....	ZI de Mi-Plaine 7 rue Georges Méliès 69680 CHASSIEU FRANCE		
<b>Test procedure</b> .....	FCC IC Certification		
<b>Tested by</b> .....	T VINAY		
<b>Test supervisor</b> .....	None		
<b>Date of receipt of test item</b> .....	N/A		
<b>Date (s) of performance of tests</b> .....	From 24 <sup>st</sup> February to 26 <sup>th</sup> February of 2021 March the 2 <sup>nd</sup> of 2021 April the 23 <sup>rd</sup> of 2021		
<b>APPLICANT'S GENERAL INFORMATIONS:</b>			
<b>Company name</b> .....	MICROOLED		
<b>Company address</b> .....	BHT2 17 rue Felix Esclangon 38000 GRENOBLE FRANCE		
<b>Person(s) present during the tests</b> .....	No representative for company attended the tests.		
<b>Responsible</b> .....	Mr Mathias ARBET-PONT		
<b>GENERAL REMARKS:</b>			
<p><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>This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory. 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		
Information not communicated .....	N/C		
Test case not performed.....	N/P		
Test object does meet the requirement.....	P (Pass)		
Test object does not meet the requirement..	F (Fail)		
Test object was not subjected to all tests.....	I (Inconclusive)		
<b>DEFINITIONS AND ABBREVIATIONS:</b>			
E.U.T.	Equipement under test	AE	Ancillary equipment
RBW	Resolution bandwidth	VBW	Video bandwidth
OATS	Open area test site	FAR	Full anechoic room
RF	Radio frequency	NTR	Nothing to report
SRD	Short Range Device	GPS	Global Positioning System

## 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.

**R120-20-105 636-1\_A Ed.1**

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.

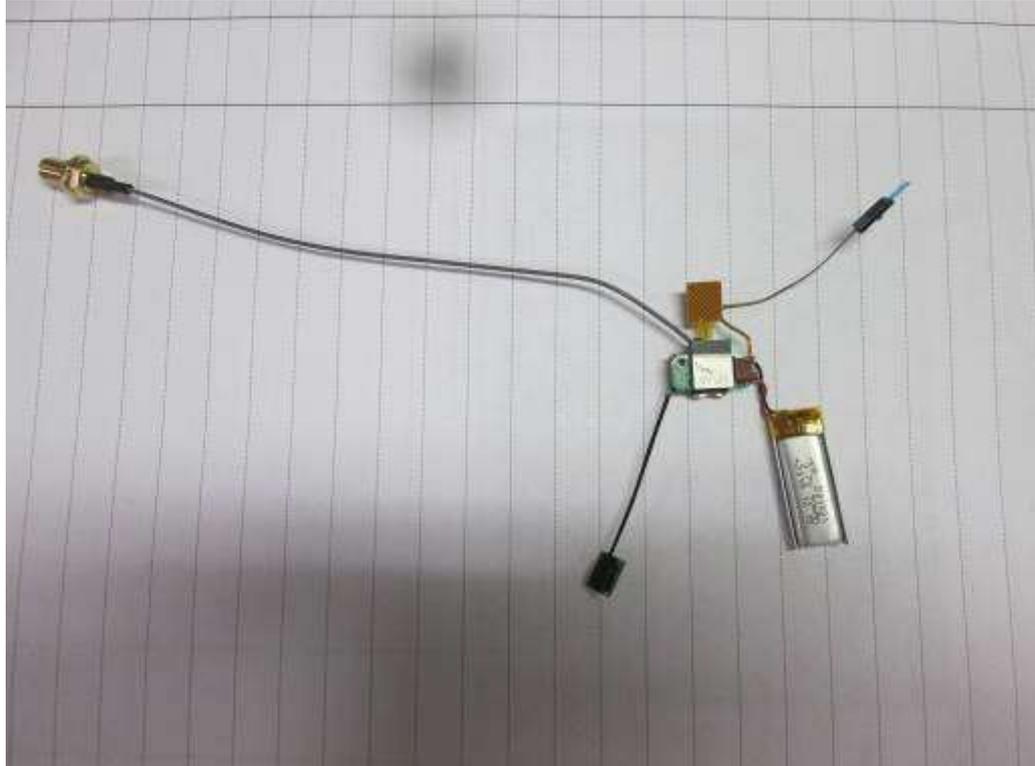
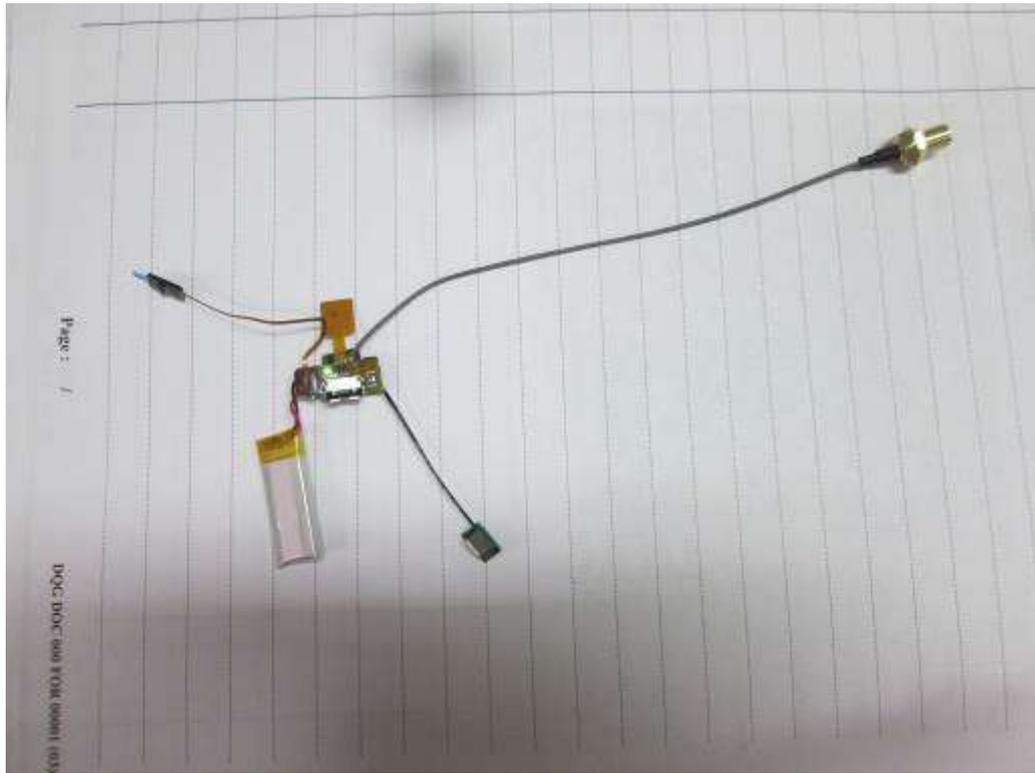


### 3.2. EUT General view





### 3.3. Internal view



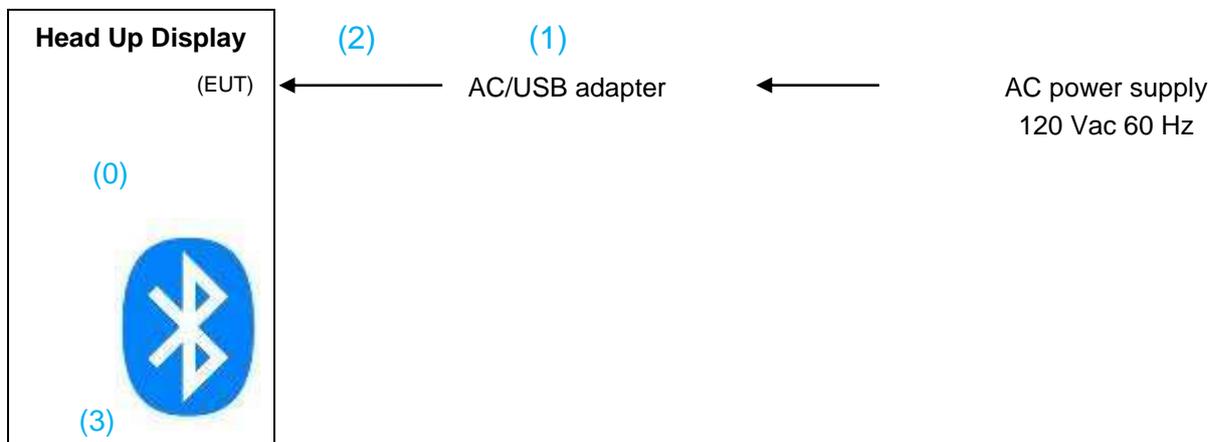
### 3.4. EUT Mechanical and Electrical Design

Power supply..... : 3.7 Vdc (internal battery) charged by USB (5Vdc)  
 Power supply range..... : 3.2Vdc to 4.2Vdc  
 Power type..... : Battery  
 Power (W)..... : Not communicated  
 Nominal current (A). ..... : Not communicated  
 Dimensions (L x W x H) (m). ..... : 0.14x0.18x0.05  
 Weight (kg). ..... : 00.025 / 0.035  
 Temperature range (°C). ..... : -20 to +50  
 Ground bounding strap..... : No

**Comments:**

N/A

### 3.5. EUT Input/Output ports



PORT	NAME	TYPE	LENGHT	CABLE TYPE	COMMENTS
0	Main frame	N/E	N/A	Plastic	
1	AC/USB adapter	AC/USB	N/A	Output : USB Input : 1 phase	Not provided by the manufacturer
2	USB cord	USB	0.5 m	USB	Provided by the manufacturer
3	RF antenna	RF	N/A	N/A	Internal

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 .....: Discontinuous current port  
 RF.....: Radio frequency port

**3.6. Supporting Equipment Used During Test**

Sample subject to the tests was tested with following equipment.

PRODUCT TYPE	MANUFACTURER	MODEL	N°EMITECH / COMMENTS
Smartphone AC/USB ADAPTER	SAMSUNG	Galaxy J6	Provided by the customer Provided by EMITECH

AC/USB ADAPTER (EA)



### 3.7. EUT Radio Specifications

<b>a) GENERAL INFORMATIONS</b>	
According to manufacturer's declarations :	
EUT type.....	: Transceiver
Technology .....	: BLE
Environmental profile.....	: Data transmission
Temperature range.....	: -20/+50 °C
Antenna type .....	: Integral
Antenna Gain.....	: 6dBi (Max)
<b>Comments:</b>	
N/A	
<b>b) TRANSMITTER PARAMITERS (Tx)</b>	
Frequency bands.....	: 2400 – 2483.5 MHz
RF Power.....	: 1mW max (standard value)
Number of channels / Separation.....	: 40 / 2MHz
Modulation type .....	: GFSK
Duty cycle .....	: N/C
Tested frequency.....	: 2402 MHz, 2426MHz, 2480 MHz (DSSS)
<b>c) RECEIVER PARAMETERS (Rx)</b>	
Frequency bands.....	: 2400 – 2483.5 MHz (DSSS)
Category/Class .....	: pointless
Bandwidth.....	: pointless

#### 4. RESULT SUMMARY

TEST DESIGNATION	SEVERITY	VERDICT	BASIC STANDARDS / COMMENTS
<b>SAR evaluation (exclusion consideration for handheld product 10-g)</b> <ul style="list-style-type: none"><li>- Low channel</li><li>- Mid channel</li><li>- High channel</li></ul>	3.0 W/kg 3.0 W/kg 3.0 W/kg	<b>PASS</b> <b>PASS</b> <b>PASS</b>	KDB 447498 D01 v06 §4.3.1

## 5. RESULTS

### 5.1. SAR EVALUATION

<b>Reference document:</b>	KDB 447498 D01 v06
<b>Calculation method:</b>	KDB 447498 D01 v06 §4.3.1
<p><b>General test setup (in test report R120-20-105 636-1_A Ed.1):</b> It is acceptable to employ a different resolution bandwidth, and a correspondingly different peak emission limit, following the procedures described in §15.521. For <math>f &gt; 1\text{GHz}</math>, 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.</p>	

TESTED CONFIGURATION	SAR VALUE	SEVERITY	VERDICT
Low channel (2402 MHz)	0.45 W/kg	3.0 W/kg	<b>PASS</b>
Mid channel (2426 MHz)	0.47 W/kg	3.0 W/kg	<b>PASS</b>
High channel (2480 MHz)	0.45 W/kg	3.0 W/kg	<b>PASS</b>

SAR EVALUATION			
TESTED CONFIGURATION	POWER (dBm)	POWER (mW)	SAR (W/kg)
Low channel (2402 MHz)	-1,84	0,65	0,45
Mid channel (2426 MHz)	-1,75	0,67	0,47
High channel (2480 MHz)	-1,98	0,63	0,45

The calculation of the SAR is done using the equation in §4.3.1 of the KDB KDB 447498 D01 v06 document for a minimum distance (5mm). The product is a remote control that could be set on the body. The evaluated value is compared to the 1-g limit (3.0 W/kg).

End of evaluation report