



# Test Report

## For

### Meteca SA

### MBC-LR

**Applicant** : Meteca SA  
**Address** : Via Alla Torre, 2 6850 Mendrisio (CH)  
**Product Name** : MBC-LR  
**Brand Name** : MBC-LR01  
**Model No** : MBC-LR01, MBC-LR01-001  
**Standards** : EN IEC 62311:2020  
**Report No** : MTL23110100303E03  
**Date of Receipt sample** : 2023-11-01  
**Date of Test** : 2023-11-01 to 2023-11-30  
**Date of Issue** : 2023-12-04  
**Test Result** : PASS

**Remarks:**

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

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## **TABLE OF CONTENTS**

<b>1. GENERAL INFORMATION</b>	<b>4</b>
1.1 PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT)	4
1.2 COMPLIANCE STANDARDS	5
1.3 TEST METHODOLOGY	5
<b>2. RF EXPOSURE BASIC RESTRICTIONS</b>	<b>6</b>
2.1 STANDARD APPLICABLE	6
2.2 REFERENCE LEVELS LIMIT	6
2.3 EVALUATION METHODS	7
2.4 EVALUATION RESULTS	8

**Report version**

Version No.	Date of issue	Description
Rev.00	/	/
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## 1. GENERAL INFORMATION

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### 1.1 Product Description for Equipment Under Test (EUT)

### TEST REPORT DECLARATION

Applicant : Meteca SA

Manufacturer : Meteca SA

EUT Description : MBC-LR

(A) Model No. : MBC-LR01

(B) Serial No. : MBC-LR01-0001

(C) Power Supply : DC3.3V

#### Test Procedure Used:

**EN IEC 62311:2020** The devices described above have been tested by **Shenzhen MTL Testing Technology Co., Ltd** to determine the maximum emission levels emanating from the device, the severe levels that the device can endure and EUT'S performance criterion. The test results are contained in this test report. **Shenzhen MTL Testing Technology Co., Ltd.** is assumed of full responsibility for the accuracy and completeness of these tests.

This report applies to above tested sample only and shall not be reproduced in part without written approval of **Shenzhen MTL Testing Technology Co., Ltd.**

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## 1.2 Compliance Standards

The tests were performed according to following standards:

**EN IEC 62311:2020** : Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz to 300 GHz)

*Maintenance of compliance* is the responsibility of the manufacturer. Any modification of the product maybe which result in lowering the emission/immunity should be checked to ensure compliance has been maintained.

## 1.3 Test Methodology

All measurements contained in this report were conducted with EN IEC 62311,  
The equipment under test (EUT) was configured to measure its highest possible emission level. For more detail refer to the Operating Instructions.





## 2. RF EXPOSURE BASIC RESTRICTIONS

### 2.1 Standard Applicable

This International Standard applies to electronic and electrical equipment for which no dedicated product- or product family standard regarding human exposure to electromagnetic fields applies. The frequency range covered is 0 Hz to 300 GHz.

The object of this generic standard is to provide assessment methods and criteria to evaluate such equipment against basic restrictions or reference levels on exposure of the general public related to electric, magnetic and electromagnetic fields and induced and contact current.

#### Normative reference

EN IEC 62311:2020, Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz – 300 GHz).

Council Recommendation 1999/519/EC of 12 July 1999 on the limitation of exposure of the general public to the electromagnetic fields (0Hz to 300GHz) (Official Journal L 197 of 30 July 1999) .

Directive 2013/35/EU of 26 June 2013, on the minimum health and safety requirements regarding the exposure of workers to risks arising from physical agents (electromagnetic fields) . Official Journal L179 of 2013-6-29,p. 1-21

### 2.2 Reference Levels Limit

According to the EN IEC 62311:2020, the criteria listed in the following table shall be used to evaluate the environmental impact of human exposure to radio-frequency (RF) radiation as specified 1999/519/EC.

Reference levels of electric, magnetic, and electromagnetic fields  
(0MHz to 300GHz, imperturbed rms values)

Frequency range	E-field strength (V/m)	H-field strength ( $\wedge$ /m)	B-field (nT)	Equivalent plane wave power density $S_{Eq}$ (W/m <sup>2</sup> )
0-1Hz	—	$3.2 \times 10^4$	$4 \times 10^4$	—
1-8Hz	10000	$3.2 \times 10^4 / f^2$	$4 \times 10^4 / f^2$	—
8-25Hz	10000	$4000 / f$	$5000 / f$	—
0.025-0.8kHz	$250 / f$	$4 / f$	$5 / f$	—
0.8-3kHz	$250 / f$	5	6.25	—
3-150kHz	87	5	6.25	—
0.15-1MHz	87	$0.73 / f$	$0.92 / f$	—
1-10MHz	$87 / f^{1/2}$	$0.73 / f$	$0.92 / f$	—
10-400MHz	28	0.073	0.092	2
400-2000MHz	$1,375 f^{1/2}$	$0.0037 f^{1/2}$	$0.0046 f^{1/2}$	$f / 200$
2-300GHz	61	0.16	0.20	10

**Note:**

1. f as indicated in the frequency range column
2. For frequencies between 100 kHz and 10 GHz,  $S_{Eq}$ ,  $E^2$ ,  $H^2$ , and  $B^2$  are to be averaged over any sixty-minute period.
3. For frequencies exceeding 10GHz,  $S_{Eq}$ ,  $E^2$ ,  $H^2$ , and  $B^2$  are to be averaged over any  $68/f^{1.05}$ -minute period (f in GHz).
4. No E-field value is provided for frequencies <1 Hz, which are effectively static electric fields. For most people the annoying perception of surface electric charges will not occur at field strengths less than 25 kV/m, Spark discharges causing stress or annoyance should be avoided.

**2.3 Evaluation Methods**

The antenna of the product, under normal use condition is at least 20 cm away from the body of the user. Warning statement to the user to keeping at least 20 cm separation distance and the prohibition of operating to a person has been printed on the user's manual. So, this product under normal use is located on electromagnetic far field between the human body.

**Far Field Calculation Formula**

$$E = \eta_0 H = \frac{\sqrt{30PG(\theta, \phi)}}{r}$$

G=antenna gain relative to an isotropic antenna

$\theta, \phi$ =elevation and azimuth angles to point of investigation

r=distance from observation point to the antenna

$\eta_0$ =Characteristic impedance of free space



## 2.4 Evaluation Results

Limit (W/ m <sup>2</sup> )	Result (W/ m <sup>2</sup> )	Verdict
10	0.053	passed

Since average output power at worse case is: 0.053W/m<sup>2</sup> which cannot exceed the exempt condition, 10W/m<sup>2</sup> specified in EN 62311. It is deemed to full fit the requirement of RF exposure basic restriction specified in EC Council Recommendation (1999/519/EC).

**\*\*\*End of Report\*\*\***



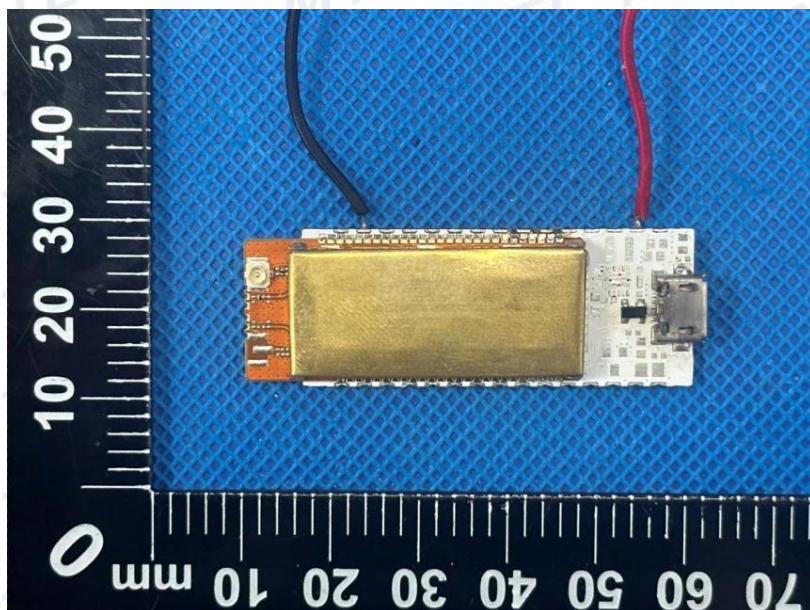


FIGURE 1

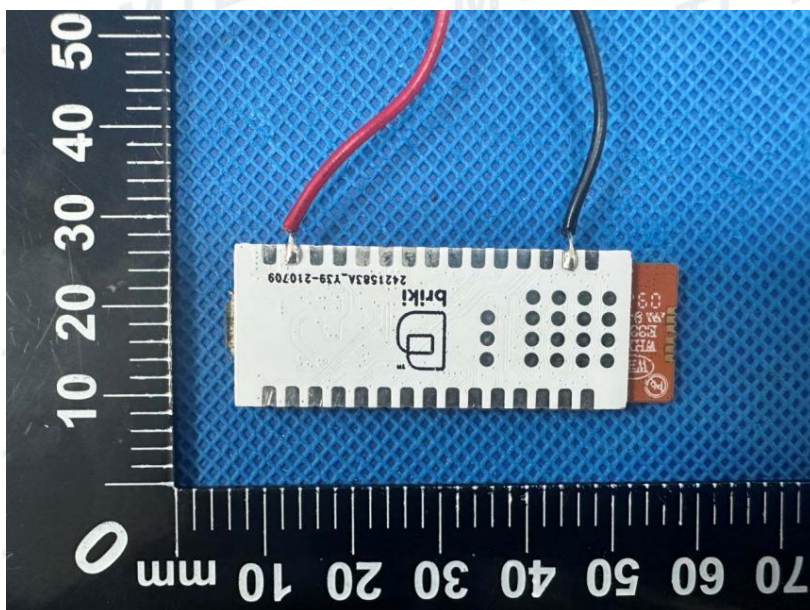


FIGURE 2

\*\*\*End of Report\*\*\*