

RF Exposure Report

Report No.: FCC_RF_SL20033001-KRE-003_MPE

FCC ID: 2ASE7-BIOHB01021
XPY2AGQN4NNN

Test Model: BIOHB01021

Series Model: N/A

Received Date: 04/07/2020

Test Date: 04/09/2020-04/17/2020

Issued Date: 05/21/2020

Applicant: BioIntelliSense, Inc.

Address: 570 El Camino Real #200 Redwood City, CA 94063

Manufacturer: BioIntelliSense, Inc.

Address: 570 El Camino Real #200 Redwood City, CA 94063

Issued By: Bureau Veritas Consumer Products Services, Inc.

Lab Address: 775 Montague Expressway, Milpitas, CA 95035

Test Location (1): 775 Montague Expressway, Milpitas, CA 95035

**FCC Registration /
Designation Number:** 540430



This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specific mention, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification. The report must not be used by the client to claim product certification, approval, or endorsement by A2LA or any government agencies.

Table of Contents

Release Control Record	3
1 Certificate of Conformity	4
2 RF Exposure	5
2.1 Limits for Maximum Permissible Exposure (MPE)	5
2.2 MPE Calculation Formula	5
2.3 Classification	5
2.4 Antenna Gain	5
2.5 Calculation Result of Maximum Conducted Power	6
3 Conclusion	6

Release Control Record

Issue No.	Description	Date Issued
FCC_RF_SL20033001-KRE-003_MPE	Initial Release	05/01/2020

1 Certificate of Conformity

Product: BioHub

Brand: BioIntelliSense, Inc.

Test Model: BIOHB01021

Sample Status: Engineering sample

Applicant: BioIntelliSense, Inc.

Test Date: 04/07/2020-04/17/2020

Standards: FCC Part 2 (Section 2.1093)

KDB 447498 D01 General RF Exposure Guidance v06

IEEE C95.1-1992

The above equipment has been tested by **Bureau Veritas Consumer Products Services, Inc., Milpitas Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

Prepared by : *Deon* , **Date:** 05/21/2020
Deon Dai / Test Engineer

Approved by : *Chen Ge* , **Date:** 05/21/2020
Chen Ge / Engineer Reviewer

2 RF Exposure

2.1 Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Average Time (minutes)
Limits For General Population / Uncontrolled Exposure				
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1500	f/1500	30
1500-100,000	1.0	30

f = Frequency in MHz; *Plane-wave equivalent power density

2.2 MPE Calculation Formula

$$Pd = (Pout * G) / (4 * \pi * r^2)$$

Where

Pd = power density in mW/cm²

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

R = distance between observation point and center of the radiator in cm

2.3 Classification

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. So, this device is classified as Mobile Device.

2.4 Antenna Gain

The antenna type is FR4 printed antenna with 0 dBi gain for BLE and Ceramic SMD antenna with 2.1 dBi for LTE.

2.5 Calculation Result of Maximum Conducted Power

Type	Max Power (dBm)	Max Power (mW)	Turn-Up Tolerance	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
BLE	0.063	1.01	± 1dB	0	20	0.000254	1
LTE Band 2	24.80	302	± 1dB	2.1	20	0.123	1
LTE Band 4	23.89	245	± 1dB	2.1	20	0.100	1
LTE Band 5	25.00	316	± 1dB	2.1	20	0.129	0.549
LTE Band 12	24.30	269	± 1dB	2.1	20	0.109	0.466
LTE Band 13	24.39	275	± 1dB	2.1	20	0.112	0.518

Note:

1. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
2. Calculate SAR test exclusion thresholds from condition "1" formulas.

3 Conclusion

Conclusion:

The formula of calculated the MPE is:

$$CPD1 / LPD1 + CPD2 / LPD2 + \dots \text{etc.} < 1$$

CPD = Calculation power density

LPD = Limit of power density

$$\text{Total Highest} = \text{BLE} + \text{LTE B5} = (0.000254/1 + 0.129/0.549) = 0.235 < 1$$

Therefore the maximum calculations of above situations are less than the "1" limit.

--- END ---