

RF Exposure Report

Report No.: SA150713C13

FCC ID: VPYLB1CL

Test Model: LBEQ6ZZ1CL

Received Date: Jul. 13, 2015

Test Date: Jul. 21 ~ Sep. 17, 2015

Issued Date: Sep. 21, 2015

Applicant: Murata Manufacturing Co., Ltd.

Address: 10-1, Higashikotari 1-chome, Nagaokakyo-shi, Kyoto 617-8555, Japan

Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch

Lab Address: No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan

Test Location: No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City
33383, TAIWAN (R.O.C.)



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 TAF 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
3 Calculation Result Of Maximum Conducted Power	6



A D T

Release Control Record

Issue No.	Description	Date Issued
SA150713C13	Original release	Sep. 21, 2015

1 Certificate of Conformity

Product: Communication Module

Brand: MURATA

Test Model: LBEQ6ZZ1CL

Sample Status: Engineering sample

Applicant: Murata Manufacturing Co., Ltd.

Test Date: Jul. 21 ~ Sep. 17, 2015

Standards: FCC Part 2 (Section 2.1091)

KDB Publication 447498 D01 General RF Exposure Guidance v06

865664 D02 RF Exposure Reporting v01r02

IEEE C95.1

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan 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 :  , **Date:** Sep. 21, 2015
Pettie Chen / Senior Specialist

Approved by :  , **Date:** Sep. 21, 2015
Ken Liu / Senior Manager

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				
300-1500	...	...	F/1500	30
1500-100,000	...	...	1.0	30

F = Frequency in MHz

2.2 MPE Calculation Formula

$$P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot r^2)$$

where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 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**.

3 Calculation Result Of Maximum Conducted Power

Frequency Band	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
WLAN: 2412-2462 MHz	23.42	2.07	20	0.070	1
WLAN: 5180-5240 MHz	13.58	2.43	20	0.008	1
WLAN: 5260-5320 MHz	12.96	2.43	20	0.007	1
WLAN: 5500-5700 MHz	12.74	2.43	20	0.007	1
WLAN: 5745-5825 MHz	12.44	2.43	20	0.006	1
Bluetooth EDR	8.27	2.07	20	0.002	1
Bluetooth LE	8.54	2.07	20	0.002	1

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

$WLAN + Bluetooth = 0.070 + 0.002 = 0.072$

Therefore, the maximum calculation of this situation is 0.072, which is less than the "1" limit.

---END---