



FCC RF Exposure Test Report

Prepared for **Blues, Inc.**

This report presents Maximum Permissible Exposure for

Applicant: Blues, Inc.

Address: 50 Harbor St, Manchester, MA 01944

Prepared by

Brandon Quan / Test Engineer

Approved by

Suresh Kondapalli

Reviewing Engineer

Issue date: 10/12/2023

This test result relates only to the described test object.

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The test is traceable to national standard or related international standard.

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Test Request Information

Test Requested By: Blues, Inc.

50 Harbor St, Manchester, MA 01944

Product: NOTE WBGLW, NBGLW, NBNAW, WBEXW, WBNAW

DUT Sample Number: Engineering Sample

Category of DUT: Mobile Exposure; General Population / Uncontrolled Exposure

FCC ID(s): Contains LTE Modules with FCC IDs:

XMR201910BG95M3, XMR202008EG91NAXD, R17LE910CXWWX

Type of Test: FCC Exposure Exemption Calculation

References: KDB 447498 v06

FCC CFR Title 47, Chapter I, Subchapter A, Subpart I, Part 2.1091

Deviations from standard: None

Date of Evaluation: 10/12/2023

Test Laboratory Information

Location of Test Lab: Bureau Veritas Consumer Product Services, Inc.

775 Montague Expressway

Milpitas, CA 95035

Phone: +1-925-963-4420

Key Contact: Sarb Shelopal (General Manager)

Sarbjit.Shelopal@BureauVeritas.com

Phone: +1-925-963-4420

Laboratory Accreditations: BUREAU VERITAS CONSUMER PRODUCTS SERVICES, INC is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories.

ISO/IEC 17025:2017: 2742.01

FCC Test Site Number: US1109 (540430)

RF Exposure Summary

Test	Reference FCC	Result
Radio frequency Radiation Exposure Evaluation	47 CFR§2.1091	Complies

RF Exposure Limits

In this document, we evaluate the RF Exposure to human body due the intentional transmission from the transmitter (EUT). The limits for Maximum Permissible Exposure (MPE) specified in FCC 1.1310 are followed.

FCC LIMITS

According to FCC 1.1310 table 1: 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 in 1.1307(b).

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)
8(A)Limits For Occupational / Control Exposures				
0.3 – 3.0	614	1.63	*100	6
3.0 – 30	1842/f	4.89/f	*900/f ²	6
30-300	61.4	0.163	1.0	6
300 - 1500	...	...	F/300	6
1500 - 100,000	...	...	5	6
(B)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 density

MPE Calculation Formula

$$S = \frac{P_{out}G}{4\pi R^2}$$

Where:

S = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

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

Classification

The antenna of this product, under normal use condition, is at least 25cm away from the body of the user. Therefore, this device is classified as Mobile Device.

Result of Evaluation

Frequency Band (MHz)	Max Power (dBm)	Max Power (mW)	Turn-Up Tolerance	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/m ²)	Limit (mW/m ²) F/1500	Ratio
								(Si/Li) (PD/PD Limit)
LTE B5 (850MHz)	31.565	1434	±1dB	2.3	25.00	0.420	0.567	0.741
WCDMA B2 (1900MHz)	31.443	1394	±1dB	2.3	25.00	0.408	1.267	0.322
GSM1900 (1850-1910MHz)	31.443	1394	±1dB	2.3	25.00	0.408	1.233	0.322

Note: Power levels are taken from the module report.

Conclusion

The device complies with requirements when operated at 25cm away from the body of the user.

The worst-case MPE ratio is less than 1, therefore the “NOTE WBGLW, NBGLW, NBNAW, WBEXW, WBNAW” manufactured by **Blues, Inc.** is compliant with Maximum Permissible Exposure requirements.

Document Revisions

Version	Date	Modifier	Changes
0	10/11/2023	Brandon Quan	Initial release
1	10/13/2023	Brandon Quan	Revised model names

End of Report