

RF Exposure Evaluation Report

Applicant: Lenbrook Industries Limited.

Address of Applicant: 633 Granite Court, Pickering, Ontario, L1W 3K1 Canada

Equipment Under Test (EUT)

Product Name: BLOUS STREAMING DAC AMPLIFIER

Model No.: M33

Trade mark: NAD

FCC ID: SVC-M33

Applicable standards: FCC CFR Title 47 Part 2 Subpart J Section 2.1091

Date of sample receipt: 30 Mar., 2020

Date of Test: 31 Mar., to 10 Nov., 2020

Date of report issue: 12 Nov., 2020

Test Result: PASS*

Authorized Signature:



Bruce Zhang
Laboratory Manager

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the JYT product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

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2 Version

Version No.	Date	Description
00	12 Nov., 2020	Original

Tested by: Yoro Wu
Test Engineer

Date: 12 Nov., 2020

Reviewed by: Winner Zhang
Project Engineer

Date: 12 Nov., 2020

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4 General Information

4.1 Client Information

Applicant:	Lenbrook Industries Limited.
Address:	633 Granite Court, Pickering, Ontario, L1W 3K1 Canada
Manufacturer:	Lenbrook Industries Limited.
Address:	633 Granite Court, Pickering, Ontario, L1W 3K1 Canada
Factory :	Hansong (Nanjing) Technology Ltd.
Address:	8th Kangping Road, Jiangning Economy and Technology Development Zone, Nanjing, 211106, China

4.2 General Description of E.U.T.

Product Name:	BLOUS STREAMING DAC AMPLIFIER
Model No.:	M33
Operation Frequency:	2.4G Wi-Fi: 2412MHz~2472MHz 5.2G Wi-Fi Band 1: 5180MHz~5240MHz 5.3G Wi-Fi Band 2: 5260MHz~5320MHz 5.6G Wi-Fi Band 3: 5500MHz~5700MHz 5.8G Wi-Fi Band 4: 5725MHz~5875MHz Bluetooth/ BLE: 2402MHz~2480MHz
Modulation technology:	802.11b: DSSS, 802.11a/g/n/ac: OFDM Bluetooth BDR /BLE: GFSK, Bluetooth EDR: π /4-DQPSK, 8DPSK
Antenna Type:	External Antenna
Antenna gain:	BT/ BLE: 2.0 dBi; Wi-Fi: 2.0 dBi
Test Sample Condition:	The test samples were provided in good working order with no visible defects.

4.3 Operating Modes

Operating mode	Detail description
BLE mode	Keep the EUT in continuously transmitting in BLE mode
BT mode	Keep the EUT in continuously transmitting in BT mode
2.4G WIFI mode	Keep the EUT in continuously transmitting in 2.4G WIFI mode
5G WIFI mode	Keep the EUT in continuously transmitting in 5G WIFI mode

4.4 Additions to, deviations, or exclusions from the method

No

4.5 Laboratory Facility

The test facility is recognized, certified, or accredited by the following organizations:

● **FCC - Designation No.: CN1211**

JianYan Testing Group Shenzhen Co., Ltd. has been accredited as a testing laboratory by FCC(Federal Communications Commission). The test firm Registration No. is 727551.

● **ISED – CAB identifier.: CN0021**

The 3m Semi-anechoic chamber of JianYan Testing Group Shenzhen Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

● **A2LA - Registration No.: 4346.01**

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: <https://portal.a2la.org/scopepdf/4346-01.pdf>

4.6 Laboratory Location

JianYan Testing Group Shenzhen Co., Ltd.

Address: No.110~116, Building B, Jinyuan Business Building, Xixiang Road,
Bao'an District, Shenzhen, Guangdong, China

Tel: +86-755-23118282, Fax: +86-755-23116366

Email: info@ccis-cb.com, Website: <http://www.ccis-cb.com>

5 Technical Requirements Specification in FCC CFR Title 47 Part 2.1091

5.1 Limits

The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled 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

5.2 Test Procedure

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S = \frac{P \times G}{4 \times \pi \times R^2}$$

Where:

S = power density

P = power input to the antenna

G = numeric gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the centre of radiation of the antenna

5.3 Result

Frequency (MHz)	Maximum Output power (dBm)	Maximum Output power (mW)	Antenna Gain (dBi)	Antenna Gain (numeric)	Distance (cm)	Result (mW/cm ²)	Limits for General Population/ Uncontrolled Exposure (mW/cm ²)
BLE							
2442	3.27	2.12	2.0	1.58	20.00	0.0007	1.0
BT							
2402	8.70	7.41	2.0	1.58	20.00	0.0023	1.0
2.4G Wi-Fi							
2462	16.59	45.60	2.0	1.58	20.00	0.0144	1.0
5.2G Wi-Fi							
5190	17.50	56.23	2.0	1.58	20.00	0.0177	1.0
5.3G Wi-Fi							
5320	17.4	54.95	2.0	1.58	20.00	0.0173	1.0
5.6G Wi-Fi							
5600	17.61	57.68	2.0	1.58	20.00	0.0182	1.0
5.8G Wi-Fi							
5745	17.46	55.72	2.0	1.58	20.00	0.0176	1.0

Note: Just the worst case mode was shown in report.

5.4 Conclusion

The device is exempt from the RF exposure evaluation.

-----End of report-----