

RF Exposure Report

Report No.: FCC_RF_SL19072201-WIN-001_MPE

FCC ID: C3DBT1000

Test Model: BT-1000, TH-3000

Issued Date: 09/27/2019

Applicant: Winegard Company

Address: 3000 Kirkwood Street, Burlington, IA 52601-2000

Manufacturer: Winegard Company

Address: 3000 Kirkwood Street, Burlington, IA 52601-2000

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 /
540430

Designation Number:

ISED# / CAB identifier: 4842D



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Release Control Record

Issue No.	Description	Date Issued
FCC_RF_SL19072201-WIN-001_MPE	Original Release	09/27/2019

1 Certificate of Conformity

Product: Inline Signal Level Meter

Brand: Winegard Company

Test Model: BT-1000, TH-3000

Sample Status: ENGINEERING SAMPLE

Applicant: Winegard Company

Standards: FCC Part 2 (Section 2.1091)

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 :



Date:

09/27/2019

Rachana Khanduri / Test Engineer

Approved by :



Date:

09/27/2019

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

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

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**.

2.4 Antenna Gain

BLE: Meandered Inverted-F Antenna (MIFA), 0dBi Gain

2.5 Calculation Result of Maximum Conducted Power

Type	CH Freq (MHz)	Conducted Power (dBm)	Antenna Gain (dBi)	Tune-Up Tolerance	Tolerance Max Power (dBm)	Measurement Distance (cm)	Calculated MPE (mW/cm ²)	MPE Limit (mW/cm ²)	Pass/Fail
BLE	2480	1.99	0	±1dB	2.99	20	0.000396	1	Pass

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

The Above Result had shown that the Device complied with MPE requirement.

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