

RF Exposure Evaluation declaration

Product Name : Transmitter box
Model No. : B8-T
FCC ID : APIREVELB8SUB

Applicant : Harman International Industries, Inc

Address : 8500 Balboa Blvd, Northridge, CA 91329, UNITED STATES.

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Report Version : V1.0



The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration of the equipment and evaluated measurement uncertainty herein.

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1. GENERAL INFORMATION

1.1. EUT Description

Product Name	Transmitter box
Model No.	B8-T
Trade Name	REVEL
FCC ID	APIREVELB8SUB
Frequency Range	2403-2478MHz
Number of Channels	26CH
Type of Modulation	FSK
Antenna Type	Dipole Antenna
Channel Control	Auto
Antenna Gain	Refer to the table “Antenna List”

1.2. Antenna List :

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	Meiloon	188-ASDWLAN30-E	Dipole Antenna	1.53dBi for 2.4 GHz

2. RF Exposure Evaluation

2.1. Limits

According to FCC 1.1310: 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).

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)
(A) Limits for Occupational/ Control Exposures				
300-1500	--	--	F/300	6
1500-100,000	--	--	5	6
(B) Limits for General Population/ Uncontrolled Exposures				
300-1500	--	--	F/1500	30
1500-100,000	--	--	1	30

F= Frequency in MHz

Friis Formula

Friis transmission 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

P_d is the limit of MPE, 1 mW/cm². If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

2.2. Test Result of RF Exposure Evaluation

Product : Transmitter box
Test Item : RF Exposure Evaluation
Test Site : N/A

Operation Frequency	2403-2478MHz
Maximum Conducted output power	10.98dBm
Antenna gain	1.53dBi

Output Power Into Antenna & RF Exposure Evaluation Distance:

Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm ²)
12.5314	0.003546

Power density in column 4 is much lower than the limit (1 mW/cm²).