MPE Report

According to

FCC CFR Title 47 Part 15 Subpart C (15.247)

Applicant	:	**Le Shi Zhi Xin Electronic Technology (Tian jin) Limited**
Address	:	**201-427 2F B1 District, Anime building,No.126 Anime Middle Road, Eco-city Tianjin, China**
Manufacturer	:	**Le Shi Zhi Xin Electronic Technology (Tian jin) Limited**
Address	:	**201-427 2F B1 District, Anime building,No.126 Anime Middle Road, Eco-city Tianjin, China**
Equipment	:	**LeEco Soundbar**
Model No.	:	**LHT-V16S**

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Radio Frequency Exposure

LIMIT

For 2.4G Band: According to §15.247(i), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines. See § 1.1307(b)(1) of this chapter.

EUT Specification

EUT	LeEco Soundbar
Frequency band (Operating)	BT3.0: 2.402GHz ~ 2.480GHz BT4.1: 2.402GHz ~ 2.480GHz GFSK:2.403-2.479GHz
Device category	☐ Portable (<20cm separation) ☒ Mobile (>20cm separation)
Exposure classification	☐ Occupational/Controlled exposure (S = 5mW/cm^2) ☒ General Population/Uncontrolled exposure (S=1mW/cm^2)
Antenna diversity	☒ Single antenna ☐ Multiple antennas ☐ Tx diversity ☐ Rx diversity ☒ Tx/Rx diversity
Max. output power for 2.4G Band	BT3.0:8.63dBm(0.00729W) BT4.1:8.15dBm(0.00653W) GFSK:-2.79dBm(0.00053W)
Antenna gain (Max)	2. dBi for 2.4G Band
Evaluation applied	☒ MPE Evaluation* ☐ SAR Evaluation ☐ N/A

Remark:

1. *The maximum output power is 8.63dBm (0.00729W) at 2480MHz (with numeric 1.58antenna gain.) for2.4G band*
2. *DTS device is not subject to routine RF evaluation; MPE estimate is used to justify the compliance.*
3. *For mobile or fixed location transmitters, no SAR consideration applied. The maximum power density is 1.0 mW/cm^2 even if the calculation indicates that the power density would be larger.*

*Note: Simultaneous transmission is not applicable for this EUT.

TEST RESULTS FOR 2.4G BAND

No non-compliance noted.

Calculation

Given $\quad E = \dfrac{\sqrt{30 \times P \times G}}{d}$ & $S = \dfrac{E^2}{3770}$

Where E = Field strength in Volts / meter
P = Power in Watts
G = Numeric antenna gain
d = Distance in meters
S = Power density in milliwatts / square centimeter

Combining equations and re-arranging the terms to express the distance as a function of the remaining variables yields:

$$S = \frac{30 \times P \times G}{3770 d^2}$$

Changing to units of mW and cm, using:

P (mW) = P (W) / 1000 and
d (cm) = d(m) / 100

Yields

$$S = \frac{30 \times (P/1000) \times G}{3770 \times (d/100)^2} = 0.0796 \times \frac{P \times G}{d^2} \qquad \textbf{\textit{Equation 1}}$$

Where d = Distance in cm
P = Power in mW
G = Numeric antenna gain
S = Power density in mW / cm^2

Maximum Permissible Exposure

Modulation Mode	Frequency band (MHz)	Max. Conducted output power(dBm)	Antenna gain (dBi)	Distance (cm)	Power density (mW/cm2)	Limit (mW/cm2)
BT3.0	2402-2480	8.63	1.58	20	0.002300	1
BT4.1	2402-2480	8.15	1.58	20	0.002059	1
GFSK	2403-2479	-2.79	1.58	20	0.000166	1

NOTE:

Total (Chain0+Chain1) , the formula of calculated the MPE is:

CPD1 / LPD1 + CPD2 / LPD2 + ……etc. < 1

CPD = Calculation power density

LPD = Limit of power density