RF EXPOSURE EVALUATION

EUT Specification

EUT	2.4G Keyboard
Model Name	HW159
Frequency band (Operating)	Wireless 2.4G: 2405MHz-2470MHz
Device category	Portable (<20cm separation)
Antenna diversity	Single antenna
Max. output power	80.69 dBuV/m (-14.57 dBm)(0.0349 mW)
Antenna gain	-1.2 dBi
Evaluation applied	SAR Evaluation

Standard Requirement

Portable Device

According to §15.247(i) and §1.1307b(1), 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 KDB 447498 D01 General RF Exposure Guidance v06, section 4.3.1.
The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6GHz attest separation distances ≤ 50 mm are determined by:
[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] ·[√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR,16
where
· f(GHz)is the RF channel transmit frequency in GHz
· Power and distance are rounded to the nearest Mw and mm before calculation17
· The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

Measurement Result

Channel Frequency (MHz)	Max Output power (dBuV)	Max Output power (dBm)	Max Output power (mW)	Calculation Value (Note 1)	Threshold Value
2405	80.69	-14.57	0.0349	0.011	3.0
2430	80.17	-15.09	0.0310	0.008	3.0
2470	78.94	-16.32	0.0233	0.006	3.0

E=EIRP-20logD+104.8

Where:

E=electric field strength in dBuV/m

EIRP=equivalent isotropic radiated power in dBm

D=specified measurement distance in meters

EIRP=E-104.8+20logD=80.69-104.8+20log3= **-14.57** dBm

Note 1: Calculation Value =[(max. power of channel, mW)/(min. test separation distance, mm)] ·[√f(GHz)].

For example: 0.0349/5*√2.405=0.011 ≤ 3.0

According to KDB447498 D01 V06, threshold at which no SAR required is ≤3.0 for 1-g SAR, separation distance is 5mm, and no simultaneous SAR measurement is required.

The SAR measurement is not necessary.