RF EXPOSURE EVALUATION

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)

FCC ID: 2APN5SNZB02L

EUT Specification

EUT	Zigbee LCD Smart Thermometer
Frequency band (Operating)	☒Zigbee: 2.405GHz ~ 2.480GHz
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（peak power）	5.73dBm
Antenna gain (Max)	0.87dBi
Evaluation applied	☒MPE Evaluation ☐SAR Evaluation

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
(A) Limits for Occupational/Control Exposures				
300-1500	--	--	**F/300**	**6**
1500-100000	--	--	**5**	**6**
(B) Limits for General Population/Uncontrol Exposures				
300-1500	--	--	**F/1500**	**6**
1500-100000	--	--	**1**	**30**

Friis transmission formula: $P_d=(P_{out}*G)\backslash(4*pi*R^2)$

Where

P_d= Power density in mW/cm^2, P_{out}=output power to antenna in mW.

G= gain of antenna in linear scale, Pi=3.1416

R= distance between observation point and center of the radiator in cm=20cm

P_d the limit of MPE, $1mW/cm^2$. If we know the maximum gain of the antenna and total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

Measurement Result

Zigbee:

Mode	Max Measured Power (dBm)	Tune up tolerance (dBm)	Max tune up conducted power(dBm)	Output Peak power (mW)	Ant. Gain (dBi)	Ant. Gain (numeric)	Power density at 20cm (mW/ cm²)	Power density Limits (mW/ cm²)
Zigbee	5.73	5±1	6	3.981	0.87	1.222	0.00097	1

The Product unsupported at the same time to Transmitting. According to KDB 447498, and no simultaneous SAR measurement is required.

Signature:

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