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RF Exposure Evaluation

FCC ID: 2AO94-W5

REQUIREMENT

KDB447498 D01 General RF Exposure Guidance v06, Clause 4.3.1(a)

[(max. power of channel, including tune-up tolerance,mW) / (min. test separation distance, mm)] · [√f(GHz)] ≤ 3.0

Where

-f(GHz) is the RF channel transmit frequency in GHz

-Power and distance are rounded to the nearest mW and mm before calculation

-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 according to 4.1 f) is applied to determine SAR test exclusion.

TEST RESULT

☒ **Passed**　　　☐ **Not Applicable**

BLE

Test mode	Channel Frequency (MHz)	Max. Measured Power (dBm)	Tune up tolerance Power (dBm)	Max. Tune up tolerance Power (dBm)	Max. Tune up tolerance Power (mW)	Calculating data	Limit	Results
GFSK	2402	-0.06	-0.06±1	0.94	1.242	0.38	3.00	Pass
	2440	-0.05	-0.05±1	0.95	1.245	0.39		
	2480	-0.50	-0.50±1	0.50	1.122	0.35		

Note:

-The exposure safety distance is less than 5mm.

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NFC

Antenna Gain=0dBi(Numeric 1.0), π=3.14

Frequency	Max. Measured Power (dBm)	Max. Tune up tolerance Power	Max. Tune up tolerance Power	Calculating data	Limit	Results
MHz	dBm	(dBm)	(mW)	0.0000007	3.00	Pass
13.56	-46.12	-46.12±1	0.000030			

$$E = EIRP - 20\log D + 104.8$$

where:

E = electric field strength in dBμV/m,

$EIRP$ = equivalent isotropic radiated power in dBm

D = specified measurement distance in meters.

According to the follow transmitter output power (EIRP) formula :
g_t=numeric gain of the transmitting antenna (unitess)
E=electric field strength in dBuV/m
d=measurement distance in meters (m)

According to the formula described above:

EIRP=E-104.8+20logD= 49.14-104.8+20log3=-46.12dbm

Note:

1. Only the worst case recorded.
2. The 2.4G BLE and NFC can transmit simultaneously and

    MPE Ratio (BLE+NFC) = 0.39/3+0.0000007/3 = 0.130< 3

    and it satisfy the RF exposure requirements for simultaneous transmission that the sum of the MPE radios < 3

**********************THE END**********************