

10 Appendix A - General Product Information

Radiofrequency radiation exposure evaluation

This exposure evaluation is intended for **FCC ID: ZZN-FB100**

According to KDB 447498 D01v06 section 4.3.1, For frequencies below 100 MHz and test separation distances \leq 50 mm, the Numeric threshold is determined as:

Step a)

$\{[\text{max. power of channel, including tune-up tolerance, mW}] / (\text{min. test separation distance, mm})\} \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$ for 1-g SAR

Step b)

$\{[\text{Power allowed at numeric threshold for 50mm in step a)}] + [(\text{test separation distance} - 50\text{mm}) \cdot (f(\text{MHz})/150)]\}$ mW

Step c) 1)

For test separation distances $>$ 50mm and $<$ 200mm, the power threshold at the corresponding test separation distance at 100MHz in step b) is multiplied by $[1 + \log(100/f(\text{MHz}))]$

Step c) 2)

For test separation distances \leq 50mm, the power threshold determined by the equation in c) 1) for 50mm and 100MHz is multiplied by $\frac{1}{2}$.

>> The fundamental frequency of the EUT is 13.56MHz, the test separation distance is \leq 50mm.
(Here calculated it as the worst-case, define the distance is 5mm)

Step a)

>> Numeric threshold, mW / 50mm * $\sqrt{0.1\text{GHz}}$ \leq 3.0
Numeric threshold \leq 474.3mW

Step b)

>> Numeric threshold \leq 474.3mW + (50mm-50mm) * 100MHz/150)
Numeric threshold \leq 474.3mW

Step c) 1) & c) 2)

>> Numeric threshold \leq 474.3mW * $[1 + \log 100/100\text{MHz}] * \frac{1}{2}$
Numeric threshold \leq 237.15mW

>> The power (calculated power + tune up tolerance) of EUT at 13.56MHz is: 0.0005mW
Which is smaller than the Numeric threshold.
Therefore, the device is exempt from stand-alone SAR test requirements.

Appendix A

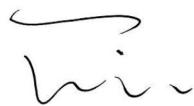
Power calculation (According to C63.10 chapter 9.5)

	Value	Unit
Field Strength Measured (E)	61.72	dB μ V/m
Measurement Distance (D)	3	m
Equivalent Isotropically Radiated Power (E.I.R.P in dBm)	-33.44	dBm
Equivalent Isotropically Radiated Power (E.I.R.P in mW)	0.0005	mW

Remark: EIRP = E + 20log(D) -104.7

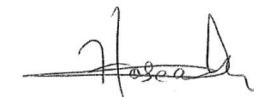
(EIRP is in dBm, E is in dB μ V/m, D is in meters)

Reviewed by:



Eric LI
EMC Project Manager

Prepared by:



Hosea CHAN
EMC Project Engineer