

Client	Kaba
Product	Zigbee Gen 2 module
Standard(s)	FCC KDB 447498, RSS-102

Maximum Permissible Exposure.

This device has an effective isotropic radiated power of 21 dBm (worst case) +0.5 dBi gain, or 21.5 dBm EIRP, or mW at 2405 MHz to 2475 MHz

This device is designed to be operated at a distance exceeding 20 cm, with typically a very low duty cycle over a 6 minute period, however for the purpose of demonstrating compliance with MPE requirements and SAR exemption; we present a worst case 20 cm distance and 100 % duty cycle.

For the 20 cm distance configuration

FCC:

Zigbee = 0.0281 (mW/cm²), which is less then the 1 mW/cm² limit at distances greater than 20 cm.

RSS-102

The EIRP limit is $1.31 \times 10^{-2} f^{0.6834} \text{ W}$, $0.0131 \times 207.1 \text{ W} = 2.7 \text{ W}$, or 34.3 dBm.

Zigbee = 21.5 dBm EIRP, which is less than the 34.3 dBm EIRP requirement at distances greater than 20 cm.

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Prediction of MPE limit at a given distance

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S = \frac{PG}{4\pi R^2}$$

where: S = power density

P = power input to the antenna

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna

Maximum peak output power at antenna input terminal:	21.00 (dBm)
Maximum peak output power at antenna input terminal:	125.8925412 (mW)
Antenna gain(typical):	0.5 (dBi)
Maximum antenna gain:	1.122018454 (numeric)
Time Averaging:	100 (%)
Prediction distance:	20 (cm)
Prediction frequency:	2405 (MHz)
MPE limit for uncontrolled exposure at prediction frequency:	1 (mW/cm^2)
Power density at prediction frequency:	0.028102 (mW/cm^2)
Margin of compliance:	-15.5 (dB)
This equates to	0.281015416 W/m^2
For information This equates to	10.29285246 V/m
	PASS