

FCC MPE CALCULATION (FCC ID: 2AS4H-MOD01)

RF Exposure Requirements:	47 CFR §1.1307(b)
RF Radiation Exposure Limits:	47 CFR §1.1310
RF Radiation Exposure Guidelines:	FCC OST/OET Bulletin Number 65
EUT Frequency Band:	LoRA, 125KHz: 902.3-914.9MHz LoRA, 500KHz: 903.0-914.2MHz
Limits for General Population/Uncontrolled Exposure in the band of:	300 - 1500 MHz,
Power Density Limit:	f/1500 mW/cm ²
Limits for General Population/Uncontrolled Exposure in the band of:	1500 - 100,000 MHz
Power Density Limit:	1 mW / cm ²

Equation: $S = PG / 4\pi R^2$ or $R = \sqrt{PG / 4\pi S}$

Where, S = Power Density

P = Power Input to Antenna

G = Antenna Gain

R = distance to the center of radiated antenna

Prediction distance 20 cm

EUT: LoRA Module (Model: MOD01)

Radio	Frequency (MHz)	Max Conducted Output Power (dBm)	Antenna Gain (dBi)	Separation distance (cm)	Power Density (mW/ cm ²)	MPE Limit (mW/ cm ²)
LoRA (125KHz)	902.3-914.9MHz	18.73	1.9	20	0.023	1
LoRA (500KHz)	903.0-914.2MHz	18.09	1.9	20	0.020	1

The above results show that the device complies with the MPE requirement.

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Date: June 23rd, 2019

ISED RF Exposure Evaluation (ISED ID: 25019-MOD01)

RF Exposure Requirements:

RSS-102 Issue 5: March 2015

RF Radiation Exposure Limits:

RSS-102 Issue 5: March 2015

RF Radiation Exposure Guidelines:

RSS-102 Issue 5: March 2015

EUT Frequency Band:

LoRA, 125KHz: 902.3-914.9MHz
LoRA, 500KHz: 903.0-914.2MHz

Limits for General Population/Uncontrolled Exposure in the band of:

300 - 6,000 MHz

Exemption limit for Routine Evaluation:

$1.31 \times 10^{-2} f_{0.6834} W$

EUT: LoRA Module (Model: MOD01)

Radio	Frequency (MHz)	Max Conducted Output Power (dBm)	Antenna Gain (dBi)	Max E.I.R.P (dBm)	Max E.I.R.P (W)	Evaluation Exemption limit (W)
LoRA (125KHz)	902.3-914.9MHz	18.73	1.9	20.63	0.116	1.37
LoRA (500KHz)	903.0-914.2MHz	18.09	1.9	19.99	0.100	1.37

The above results show that the E.I.R.P of this device is below the exemption limit for Routine Evaluation.

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