

MPE CALCULATION

FCC ID

RFID: 2A0X8-F1200, WLAN:2AHMR-ESP12S

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

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

Frequency Range (MHz)	Power Density (mW/cm ²)
1,500-100,000	1.0
300-1,500	f/1500

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 20cm

Flume: Bridge

Type	CH Freq (MHz)	Conducted Power (dBm)	Antenna Gain (dBi)	Measurement distance (cm)	Calculated MPE (mW/cm ²)	MPE Limit (mW/cm ²)	Pass / Fail
RFID	902.5 MHz	15.31	3.0	20	0.0135	0.60	Pass
WLAN	2412 MHz	11.55	3.0	20	0.0057	1	Pass

If RFID & WLAN Transmit Simultaneously,

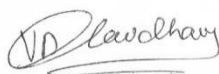
RFID = $(0.0135/0.60) * 100\% = 2.25\%$

WLAN = $(0.0057/1) * 100\% = 0.57\%$

Total MPE = $2.25\% + 0.57\% = 2.82\% < 100\%$

The Above Result had shown that the Device complied with MPE requirement.

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