

Appendix A: FCC Part 1.1307, 1.1310, 2.1091, 2.1093; IC RSS-Gen: RF Exposure

MPE Calculation – Co-Location of Z-wave module FCC ID: YL6-143450L and FCC ID: YL6-143IS205V4

Equation from page 18 of OET 65, Edition 97-01: $S = \text{EIRP} / (4 \pi R^2)$

FCC ID: YL6-143IS205V4

EUT operating frequency range: 912 - 924 MHz.

Therefore, limit for uncontrolled exposure: 0.6 mW/cm^2

EIRP = 16 mW

$S = 16 / (4 \times 3.14 \times 20^2) = 0.0032 \text{ mW/cm}^2$ at 20 cm separation

FCC ID: YL6-143450L

EUT operating frequency: 908.4 MHz.

Therefore, limit for uncontrolled exposure: 0.6 mW/cm^2

Field strength = 89.1 dBuV/m @ 3 m

Using $\text{EIRP} = E + 20 \log(d) - 104.8 = 89.1 + 20 \log(3) - 104.8 = -6.16 \text{ dBm} = 0.24 \text{ mW}$

$S = 0.24 / (4 \times 3.14 \times 20^2) = 0.00005 \text{ mW/cm}^2$ at 20 cm separation

MPE Summary

FCC ID	Frequency Range (MHz)	MPE (mW/cm^2)	Limit (mW/cm^2)
YL6-143IS205V4	912 – 924	0.0032	0.6
YL6-143450L	908.4	0.00005	0.6

FCC requirement: $\text{MPE1} + \text{MPE2} < 0.6$

Combined MPE = 0.00325 mW/cm^2

MPE as a fraction of the limit: $0.00325 / 0.6 = 0.54\%$

Therefore, the uncontrolled exposure limit is met at 20 cm when both transmitters are operating simultaneously.