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Subject: RF Exposure Considerations for Radio Board 60556R-F-915

FCC ID: 2A3M2-25A080

The FCC requires that the Maximum ERP be less than the threshold value at a distance of 20 cm from a device to the body of a user.

The transmitter operation for the Radio Board 60556R-F-915 utilizes 915 MHz LoRa and 915 MHz FSK.

Simultaneous transmission of LoRa and FSK cannot take place.

The following FCC Rule Parts and procedures are applicable:

Part 1.1310 – Radiofrequency radiation exposure limits

Part 2.1091 – Radiofrequency radiation exposure evaluation: mobile devices

KDB447498 D01 v07

Mobile and Portable Devices RF Exposure Procedures and Equipment Authorisation Policies

EIRP Calculation

For 915 MHz LoRa

Transmitter frequency range = 915.25 MHz to 927.5MHz

Maximum Conducted Power = 22dBm

Antenna gain: +0dBi

EIRP = 22dBm + 0dBi = 22dBm

ERP = EIRP-2.15dBm = +19.85dBm (**96.61mW**)

For 915 MHz FSK

Transmitter frequency range = 915.9 MHz to 927.1MHz

Maximum Conducted Power = 22dBm

Antenna gain: +0dBi

EIRP = 22dBm + 0dBi = 22dBm

ERP = EIRP-2.15dBm = +19.85dBm (**96.61mW**)

Power Thresholds

From Appendix A of KDB 447498 Do1 v07. RF exemption applies if the maximum transmitted power is less than the maximum of the following three criteria:

- i) Less than 1 mw Blanket exemption. PTH = 0.001 W (the Radio Board 60556R-F-915 is not compliant)
- ii) determination of exemption under the MPE-based §1.1307(b)(3)(i)(C), if i) not meet
- iii) determination of exemption under the SAR-based §1.1307(b)(3)(i)(B) if both i) and ii) are not met.

Determination of threshold power (PTH) under the MPE-based §1.1307(b)(3)(i)(C)
From table 1 - § 1.1307(b)(3)(i)(C) - Single RF Sources Subject to Routine Environmental Evaluation for 915 MHz:

Threshold ERP (watts) $PTH = 0.0128 * R^2 * f$ (f in MHz)
For

$R = 0.2 \text{ m}$

$f = 915 \text{ MHz}$

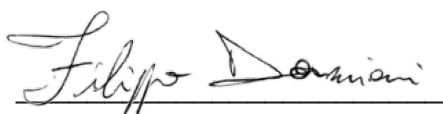
$PTH = 0.0128 * 0.22 * 915$

$PTH = 0.0128 * 0.04 * 915$

$PTH = 0.468 \text{ W (468mW)}$

Conclusion

The maximum ERP is below the applicable 0.468W threshold for operation at 915MHz, and therefore RF Exposure Evaluation is not required for the Radio Board 60556R-F-915 with a user/antenna separation distance of 20cm and is exempt from evaluation in accordance with §1.1307(b)(3).



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