TÜVRheinland®

Appendix 5
RF Exposure Information

FCC ID: 2AMWTLRS10701

Maximum Effective Radiated Power

According to KDB 447498 D04, MPE based exemption is determine in § 1.1307(b)(3)(i)(C) :

A single RF source is exempt if using Table 1 of § 1.1307(b)(3)(i)(C) and the minimum separation distance (R in meters) from the body of a nearby person for the frequency (f in MHz) at which the source operates, the ERP (watts) is no more than the calculated value prescribed for that frequency.

RF Source frequency (MHz)	Threshold ERP (watts)
300 ~ 1,500	$0.0128\ R^2\ f$
1,500 ~ 100,000	$19.2\ R^2$

Table 1 of § 1.1307(b)(3)(i)(C)

Where R = 20cm, the minimum distance mentioned in module datasheet.

For the exemption in Table 1 to apply, R must be at least λ/2π, where λ is the free-space operating wavelength in meters

For Frequency between 300MM~1,500M, Max. ERP is no more than the Threshold ERP = $0.0128 \times (0.2m)^2 \times f$ (in MHz)

λ/2π and Threshold ERP is calculated in below table

Frequency (MHz)	Wavelength λ (m)	λ/2π (cm)	R (cm)	Threshold ERP (W)
903.0	0.332	5.29	20	0.4623
909.4	0.330	5.25	20	0.4656
914.2	0.328	5.22	20	0.4681

Result :

Max. ERP (dBm) = P + T + G
Where

P = Maximum pear output power
T = Maximum tune up tolerance declare by customer
G = Antenna Gain relative to half-wave dipole (dBd)

Frequency (MHz)	Maximum Output power (dBm)	Maximum Tune Up Tolerance (dB)	Antenna Gain relative to half-wave dipole (dBd)	Max. ERP (dBm)	Max. ERP (W)	Threshold ERP (W)
903.0	18.77	+2	-4.47	16.30	0.0427	0.4623
909.4	18.51	+2	-4.47	16.04	0.0402	0.4656
914.2	18.13	+2	-4.47	15.66	0.0368	0.4681

Note :

- highest antenna gain within the operating range of the antenna is taken
- dBd = dBi - 2.15dB as per KDB 447498 D04 note 10

Conclusion:
Max. ERP of all frequencies lower than Threshold ERP
No SAR is required.