

US Tech Test Report:
 FCC ID:
 IC:
 Test Report Number:
 Issue Date:
 Customer:
 Model:

FCC Part 90/RSS 131 Certification
 2AKSM-SAFE3
 22303-SAFE3
 19-0244
 August 6, 2019
 Safe-Com Wireless
 SAFE-1001

Maximum Public Exposure to RF (MPE) CFR 1.1310 (e) & RSS-102, clause 4

The maximum exposure level to the public from the EUT shall not exceed a power density, **S**, per the table below.

NOTE: The calculation performed for this EUT were performed for antenna with a maximum gain of 6 dBi, to determine the minimum distance required in order to remain compliant with the permissible exposure levels. If different antenna gain or distance is to be used, the permissible exposure levels of Table 1 below must be respected.

Table 1—Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	*180/f ²	30
30-300	27.5	0.073	0.2	30
300-1,500			f/1500	30
1,500-100,000			1.0	30

f = frequency in MHz * = Plane-wave equivalent power density

Equation for S (Power density):

$$S = P \cdot G / (4\pi R^2)$$

All calculations performed by:
 Date: 08/06/2019
 Test Engineer: George Yang

Signature: 

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Therefore, for:

In the band 150-174 MHz:

Peak Power (dBm)= 36.99 dBm
Peak Power (mW) = 5000 mW
Antenna Gain (dBi)= 6 dBi (3.98 numeric)
MPE limit (S) = 0.2 mW/cm²

Minimum distance from human=

$$R = \sqrt{((PG)/(4\pi S))}, = \sqrt{((5000*3.98)/(4\pi*0.2))}= 89.0 \text{ cm}$$

RSS-102, Clause 4 Exposure Compliance for 48-300 MHz:

According to RSS-102 Issue 5, Table 4, the limit for EUT operating in this band is 1.29 W/m². The FCC limit is much lower than this value therefore compliance with the FCC requirements for MPE at the calculated minimum distance will ensure compliance with the General Public Uncontrolled Environment of RSS-102.

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In the band of 401-467.54 MHz:

Peak Power (dBm)= 36.98 dBm
Peak Power (mW) = 4988.8 mW
Antenna Gain (dBi)= 6 dBi (3.98 numeric)
MPE limit (S) = 0.27 mW/cm²

Minimum distance from human=

$$R = \sqrt{((PG)/(4\pi S))}, = \sqrt{((4988.8*3.98)/(4\pi*0.27))}= 76.5 \text{ cm}$$

RSS-102, Clause 4 Exposure Compliance for 406-467.54 MHz:

According to RSS-102 Issue 5, Table 4, the limit for EUT operating in this band is 1.59 W/m² @ 406 MHz. The FCC limit is much lower than this value therefore compliance with the FCC requirements for MPE at the calculated minimum distance will ensure compliance with the General Public Uncontrolled Environment of RSS-102.

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In the band of 467.74-512 MHz:

Peak Power (dBm)= 36.96 dBm
Peak Power (mW) = 4965.9 mW
Antenna Gain (dBi)= 6 dBi (3.98 numeric)
MPE limit (S) = 0.31 mW/cm²

Minimum distance from human=

$$R = \sqrt{((PG)/(4\pi S))}, = \sqrt{((4965.9*3.98)/(4\pi*0.31))}= 71.2 \text{ cm}$$

RSS-102, Clause 4 Exposure Compliance for 467.74-512.0 MHz:

According to RSS-102 Issue 5, Table 4, the limit for EUT operating in this band is 1.75 W/m² @ 467.75. The FCC limit is much lower than this value therefore compliance with the FCC requirements for MPE at the calculated minimum distance will ensure compliance with the General Public Uncontrolled Environment of RSS-102.

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In the band of 758-805 MHz:

Peak Power (dBm)= 37.00 dBm
Peak Power (mW) = 5000 mW
Antenna Gain (dBi)= 6 dBi (3.98 numeric)
MPE limit (S) = 0.51 mW/cm²

Minimum distance from human=

$$R = \sqrt{\left(\frac{PG}{4\pi S}\right)} = \sqrt{\left(\frac{5000 \cdot 3.98}{4\pi \cdot 0.51}\right)} = 55.7 \text{ cm}$$

RSS-102, Clause 4 Exposure Compliance for 768-775 MHz:

According to RSS-102 Issue 5, Table 4, the limit for EUT operating in this band is 2.43 W/m²@ 758 MHz. The FCC limit is much lower than this value therefore compliance with the FCC requirements for MPE at the calculated minimum distance will ensure compliance with the General Public Uncontrolled Environment of RSS-102.

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In the band of 806-869 MHz:

Peak Power (dBm)= 37.00 dBm
Peak Power (mW) = 5000 mW
Antenna Gain (dBi)= 6 dBi (3.98 numeric)
MPE limit (S) = 0.54 mW/cm²

Minimum distance from human=

$$R = \sqrt{((PG)/(4\pi S))}, = \sqrt{((5000*3.98)/(4\pi*0.54))}= 54.2 \text{ cm}$$

RSS-102, Clause 4 Exposure Compliance for 806-869 MHz:

According to RSS-102 Issue 5, Table 4, the limit for EUT operating in this band is 2.54 W/m² @ 806 MHz. The FCC limit is much lower than this value therefore compliance with the FCC requirements for MPE at the calculated minimum distance will ensure compliance with the General Public Uncontrolled Environment of RSS-102.