FCCID: 2AKVFUHF100T

RF Exposure evaluation

According to 447498 D01 General RF Exposure Guidance v06

4.3. General SAR test exclusion guidance

4.3.1. Standalone SAR test exclusion considerations

a) For 100 MHz to 6 GHz and test separation distances ≤ 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following: [(max. power of channel, including tune-up tolerance, mW) / (min. test separation distance, mm)] · [√f(GHz)] ≤ 3.0 for 1-g SAR, and ≤ 7.5 for 10-g extremity SAR, [30] where

- f(GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation31
- The result is rounded to one decimal place for comparison
- The values 3.0 and 7.5 are referred to as numeric thresholds in step b) below

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm, and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm according to 4.1 f) is applied to determine SAR test exclusion.

[30] This is equivalent to the formula written as: [(max. power of channel, including tune-up tolerance, mW)/(60/√f(GHz) mW)]·[20 mm/(min. test separation distance, mm)] ≤ 1.0 for 1-g SAR; also see Appendix A for approximate exclusion threshold numerical values at selected frequencies and distances.

eirp = pt x gt = $(EXd)^2/30$

where:

pt = transmitter output power in watts,

gt = numeric gain of the transmitting antenna (unitless),

E = electric field strength in V/m, --- $10^{[(dBuV/m)/20]}/10^6$

d = measurement distance in meters (m)---3m

So pt = $(EXd)^2/30$ x gt

RF Exposure evaluation

Copied from the FCC test report:

Carrier Frequency (MHz)	**Reading Value conducted output power dBm (mW)**	**Cable loss (dB)**	**True Value conducted output power dBm (mW)**	**Limit in** 74.861 e) 1)
470.200	-10.9dBm(i.e.0.081 mW)	0.5	-10.4dBm(i.e.0.091 mW)	24 dBm (i.e. 250 mW)
584.412	-11.2dBm(i.e.0.076 mW)	0.6	-10.6dBm(i.e.0.087 mW)	
607.800	-11.2dBm(i.e.0.076 mW)	0.6	-10.6dBm(i.e 0.087 mW)	

tune-up tolerance=±1dB,
min. test separation distance = 5 mm, since the min distance from the antenna to the outer = 3.0 mm
Field strength = -10.4 dBm=0.091 mW in 470.200MHz
Field strength = -10.6 dBm=0.912 mW in 584.412MHz
Field strength = -10.6 dBm=0.912 mW in 607.800MHz

Max. power of channel after included tune-up tolerance
Field strength = -9.4 dBm=0.1148 mW in 470.200MHz
Field strength = -9.6 dBm=0.1096 mW in 584.412MHz
Field strength = -9.6 dBm=0.1096 mW in 607.800MHz

So (0.1148 mW)/5.0mm)x √0.470200 GHz = 0.079 <3
So (0.1096 mW)/5.0mm)x √0.584412 GHz = 0.084 <3
So (0.1096 mW)/5.0mm)x √0.607800 GHz = 0.085 <3

Then SAR evaluation is not required