FCCID: 2AAQCBP500

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 for BP500

Copied from the FCC test report:

Carrier Frequency (MHz)	**Factual Level dBm (mW)**
516.000	1.2dBm(i.e.1.32 mW)
522.880	1.0dBm(i.e.1.26 mW)
541.000	1.0dBm(i.e 1.26 mW)

tune-up tolerance=±1dB,

min. test separation distance = 5 mm, since the min distance from the antenna to the outer = 1.0 mm

Field strength = 1.2 dBm=1.32 mW in 516.000MHz

Field strength = 1.0 dBm=1.26 mW in 522.880MHz

Field strength = 1.0 dBm=1.26 mW in 541.000MHz

Max. power of channel after included tune-up tolerance
Field strength = 2.2 dBm=1.66 mW in 516.000MHz
Field strength = 2.0 dBm=1.58 mW in 522.880MHz
Field strength = 2.0 dBm=1.58 mW in 541.000MHz

So (1.66 mW)/5.0mm)x √0.516000 GHz = 0.2384<3
So (1.58 mW)/5.0mm)x √0.522880 GHz = 0.2292 <3
So (1.58 mW)/5.0mm)x √0.541000 GHz = 0.2331 <3
Then SAR evaluation is not required