

# MPE Calculation

Model Name : **SP142**

FCC ID : **S7A-SP142**

Device Category : **Portable device**

Separation distance : **40.5 mm**

## KDB 447498 - 4.3.1 a)

For 100 MHz to 6 GHz and test separation distances  $\leq 50$  mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:  

$$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$$
 for 1-g SAR, and  $\leq 7.5$  for 10-g extremity SAR, where

-  $f(\text{GHz})$  is the RF channel transmit frequency in GHz

- Power and distance are rounded to the nearest mW and mm before calculation

- The result is rounded to one decimal place for comparison

| Modulation    | Frequency (MHz) | Min. Test separation distance | Measured Maximum Average power | Tune-up tolerance | Max. Power with tune-up tolerance |       | Standalone SAR Test exclusion thresholds for 100MHz to 6GHz at test separation distance $\leq 50$ mm | Limit | Result |
|---------------|-----------------|-------------------------------|--------------------------------|-------------------|-----------------------------------|-------|------------------------------------------------------------------------------------------------------|-------|--------|
|               |                 | (mm)                          | (dBm)                          | (dB)              | (dBm)                             | (mW)  |                                                                                                      |       |        |
| GFSK          | 2402            | 40.50                         | 3.46                           | $\pm 0.50$        | 3.96                              | 2.49  | 0.0952                                                                                               | 3.00  | PASS   |
|               | 2441            |                               | 3.63                           |                   | 4.13                              | 2.59  | 0.0998                                                                                               | 3.00  | PASS   |
|               | 2480            |                               | 3.26                           |                   | 3.76                              | 2.38  | 0.0924                                                                                               | 3.00  | PASS   |
| $\pi/4$ DQPSK | 2402            | 40.50                         | 0.57                           | $\pm 0.50$        | 1.07                              | 1.28  | 0.0490                                                                                               | 3.00  | PASS   |
|               | 2441            |                               | -0.66                          |                   | -0.16                             | 0.96  | 0.0372                                                                                               | 3.00  | PASS   |
|               | 2480            |                               | -2.21                          |                   | -1.71                             | 0.67  | 0.0262                                                                                               | 3.00  | PASS   |
| 8DPSK         | 2402            | 40.50                         | 1.55                           | $\pm 0.50$        | 2.05                              | 1.60  | 0.0614                                                                                               | 3.00  | PASS   |
|               | 2441            |                               | -0.06                          |                   | 0.44                              | 1.11  | 0.0427                                                                                               | 3.00  | PASS   |
|               | 2480            |                               | -1.78                          |                   | -1.28                             | 0.74  | 0.0290                                                                                               | 3.00  | PASS   |
| BT LE         | 2402            | 40.50                         | -2.30                          | $\pm 0.50$        | -1.80                             | 0.66  | 0.0253                                                                                               | 3.00  | PASS   |
|               | 2442            |                               | -1.83                          |                   | -1.33                             | 0.74  | 0.0284                                                                                               | 3.00  | PASS   |
|               | 2480            |                               | -1.82                          |                   | -1.32                             | 0.74  | 0.0287                                                                                               | 3.00  | PASS   |
| MESH          | 2410            | 40.50                         | 14.66                          | $\pm 0.50$        | 15.16                             | 32.81 | 1.2576                                                                                               | 3.00  | PASS   |
|               | 2445            |                               | 13.82                          |                   | 14.32                             | 27.04 | 1.0440                                                                                               | 3.00  | PASS   |
|               | 2475            |                               | 12.38                          |                   | 12.88                             | 19.41 | 0.7539                                                                                               | 3.00  | PASS   |