KDB 447498   **General SAR test reduction and exclusion guidance**

Section 4.3

For Standalone SAR exclusion consideration, when SAR exclusion Threshold requirement in KDB 447498 is satisfied, standalone SAR evaluation for general population exposure conditions by measurement or numerical simulation is not required.

In the frequency range below 100 MHz to 6 GHz and test separation distance of <50mm, the SAR Test Exclusion Threshold for operation at 903.3, 915.25 and 927.6 MHz will be determined as follows

SAR Exclusion Threshold (SARET)

$$NT = [(MP/TSD^A) * \sqrt{f_{GHz}}]$$

NT   =   Numeric Threshold (3.0 for 1-g SAR and 7.5 for 10-g SAR)
MP   =   Max Power of channel (mW) (inc tune up)
TSD^A =   Min Test separation Distance < 5mm therefore 5mm

We can transpose this formula to allow us to find the maximum power of a channel allowed and compare this to the measured maximum power.

$$= [(NT \times TSD^A) / \sqrt{f_{GHz}}]$$

Operating Frequency 902.1375 MHz

MP= $[(3.0 \times 5) / \sqrt{0.9021375}]$
MP=   [15 / 0.95]
MP=   15.78mW

Operating Frequency 904.6625 MHz

MP= $[(3.0 \times 5) / \sqrt{0.9046625}]$
MP=   [15 / 0.95]
MP=   15.78mW

Source-based time-averaged maximum conducted output power

Frequency	Peak Conducted Output Power (mW)	Maximum Duty Cycle	Time-averaged maximum conducted output power (mW)	Exclusion Threshold (mW)
902.1375	306.902	2.3 %	7.06	15.78
904.6625	238.297	2.3 %	5.48	15.78

The time-averaged maximum conducted output power is less than the SAR Exclusion Threshold.

Therefore standalone SAR evaluation for general population exposure conditions by measurement or numerical simulation is not required. Section 4.3 General SAR test reduction and exclusion guidance

Manufacturers Duty Cycle Declaration

When a message is transmitted, it occupies 3 slots (on 3 different channels). 1 slot = 350ms max.
We can circle back to a given slot after 46s minimum (time necessary to go through all 54 channels).

We can give two values:

- If we consider part 15's definition: 400ms max every 20s on a <u>given frequency</u> (=channel). Then DC would be 350ms/46s = 0.8%
- If we consider the <u>whole message (total time on air),</u> then it is : 3x350ms/46s = 2.3%