

## RF EXPOSURE EVALUATION METHOD

FCC ID:2AD6J-HISUDA

### SAR Test Exclusion Thresholds for 100 MHz - 6 GHz and $\leq 50$ mm

Approximate SAR Test Exclusion Power Thresholds at Selected Frequencies and Test Separation Distances are illustrated in the following Table.

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances  $\leq 50$  mm are determined by:

$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$  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

The test exclusions are applicable only when the minimum test separation distance is  $\leq 50$  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 is applied to determine SAR test exclusion.

Maximum measured transmitter power.

WIFI:

| Test Channel               | Frequency | Maximum Peak Conducted Output Power (PK) | Maximum Peak Conducted Output Power (AV) | Maximum Peak Conducted Output Power (AV) |
|----------------------------|-----------|------------------------------------------|------------------------------------------|------------------------------------------|
|                            | (MHz)     | (dBm)                                    | (dBm)                                    | mW                                       |
| <b>TX 802.11b Mode</b>     |           |                                          |                                          |                                          |
| CH01                       | 2412      | 11.47                                    | 8.49                                     | 7.063                                    |
| CH06                       | 2437      | 11.21                                    | 8.15                                     | 6.531                                    |
| CH11                       | 2462      | 11.35                                    | 8.20                                     | 6.607                                    |
| <b>TX 802.11g Mode</b>     |           |                                          |                                          |                                          |
| CH01                       | 2412      | 10.51                                    | 7.71                                     | 5.902                                    |
| CH06                       | 2437      | 10.36                                    | 7.63                                     | 5.794                                    |
| CH11                       | 2462      | 10.42                                    | 7.58                                     | 5.728                                    |
| <b>TX 802.11n(20) Mode</b> |           |                                          |                                          |                                          |
| CH01                       | 2412      | 10.44                                    | 7.08                                     | 5.105                                    |
| CH06                       | 2437      | 10.68                                    | 7.12                                     | 5.152                                    |
| CH11                       | 2462      | 10.43                                    | 7.16                                     | 5.200                                    |
| <b>TX 802.11n(40) Mode</b> |           |                                          |                                          |                                          |
| CH03                       | 2422      | 9.68                                     | 5.77                                     | 3.776                                    |
| CH06                       | 2437      | 9.56                                     | 5.83                                     | 3.828                                    |
| CH09                       | 2452      | 9.35                                     | 5.75                                     | 3.758                                    |

Remark: The best case gain of the antenna is 1.0dBi.

1.0 dBi logarithmic terms convert to numeric result is nearly 1.26

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances  $\leq 50$  mm are determined by:

$$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}]$$

WIFI:

| Test Channel                | Range   | tune up max power (dBm) | [(max. power of channel, including tune-up tolerance, mW) | (min. test separation distance, mm)] | [f(GHz)] | Result | Limit |
|-----------------------------|---------|-------------------------|-----------------------------------------------------------|--------------------------------------|----------|--------|-------|
| <b>TX 802.11b Mode</b>      |         |                         |                                                           |                                      |          |        |       |
| CH01                        | 7.0~9.0 | 9.0                     | 7.943                                                     | 5                                    | 2.412    | 2.47   | 3     |
| CH06                        | 7.0~9.0 | 9.0                     | 7.943                                                     | 5                                    | 2.437    | 2.48   | 3     |
| CH11                        | 7.0~9.0 | 9.0                     | 7.943                                                     | 5                                    | 2.462    | 2.49   | 3     |
| <b>TX 802.11g Mode</b>      |         |                         |                                                           |                                      |          |        |       |
| CH01                        | 6.0~8.0 | 8.0                     | 6.310                                                     | 5                                    | 2.412    | 1.96   | 3     |
| CH06                        | 6.0~8.0 | 8.0                     | 6.310                                                     | 5                                    | 2.437    | 1.97   | 3     |
| CH11                        | 6.0~8.0 | 8.0                     | 6.310                                                     | 5                                    | 2.462    | 1.98   | 3     |
| <b>TX 802.11n-HT20 Mode</b> |         |                         |                                                           |                                      |          |        |       |
| CH01                        | 6.0~8.0 | 8.0                     | 6.310                                                     | 5                                    | 2.412    | 1.96   | 3     |
| CH06                        | 6.0~8.0 | 8.0                     | 6.310                                                     | 5                                    | 2.437    | 1.97   | 3     |
| CH11                        | 6.0~8.0 | 8.0                     | 6.310                                                     | 5                                    | 2.462    | 1.98   | 3     |
| <b>TX 802.11n-HT40 Mode</b> |         |                         |                                                           |                                      |          |        |       |
| CH03                        | 5.0~7.0 | 7.0                     | 5.012                                                     | 5                                    | 2.422    | 1.56   | 3     |
| CH06                        | 5.0~7.0 | 7.0                     | 5.012                                                     | 5                                    | 2.437    | 1.56   | 3     |
| CH09                        | 5.0~7.0 | 7.0                     | 5.012                                                     | 5                                    | 2.452    | 1.57   | 3     |

The test Result is less than 3.0 for 1-g SAR and  $\leq 7.5$  for 10-g extremity SAR.

**Conclusion:** No SAR is required.