

RF EXPOSURE REPORT

Equipment Under Test	Car AVN
Modle Name	DGU-12T5-Q300SA-2
Variant Model Name	DGU-12T5-Q300SA-1, DGU-12T5-Q300SA-3, DGU-12T5-Q300SA-4, DGU-12T5-Q300SA-5, DGU-12T5-Q300SA-6
FCC ID	2AE77DGU12T5Q300SA2
IC Number	-
Applicant	HYOLIM XE CO., LTD.
Manufacturer	HYOLIM XE CO., LTD.
Date of Test(s)	2025. 10. 28 ~ 2025. 11. 10
Date of Issue	2025. 11. 25

In the configuration tested, the EUT complied with the standards specified above.

Issue to	Issue by
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Laboratory Information

Company name : DEKRA Korea Co., Ltd.

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RF EXPOSURE

1. Regulation

The SAR exclusion table from RSS-102 issue 5 is reproduced below:

Table 1: SAR evaluation – Exemption limits for routine evaluation based on frequency and separation distance

Frequency (MHz)	Exemption Limits (mW)				
	At separation distance of ≤ 5 mm	At separation distance of 10 mm	At separation distance of 15 mm	At separation distance of 20 mm	At separation distance of 25 mm
≤ 300	71 mW	101 mW	132 mW	162 mW	193 mW
450	52 mW	70 mW	88 mW	106 mW	123 mW
835	17 mW	30 mW	42 mW	55 mW	67 mW
1900	7 mW	10 mW	18 mW	34 mW	60 mW
2450	4 mW	7 mW	15 mW	30 mW	52 mW
3500	2 mW	6 mW	16 mW	32 mW	55 mW
5800	1 mW	6 mW	15 mW	27 mW	41 mW

Frequency (MHz)	Exemption Limits (mW)				
	At separation distance of 30 mm	At separation distance of 35 mm	At separation distance of 40 mm	At separation distance of 45 mm	At separation distance of 50 mm
≤ 300	223 mW	254 mW	284 mW	315 mW	345 mW
450	141 mW	159 mW	177 mW	195 mW	213 mW
835	80 mW	92 mW	105 mW	117 mW	130 mW
1900	99 mW	153 mW	225 mW	316 mW	431 mW
2450	83 mW	123 mW	173 mW	235 mW	309 mW
3500	86 mW	124 mW	170 mW	225 mW	290 mW
5800	56 mW	71 mW	85 mW	97 mW	106 mW

RF EXPOSURE

1. Regulation

According to §15.247(i), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines. See § 1.1307(b)(1) of this Chapter.

Limits for Maximum Permissible Exposure: RF exposure is calculated.

Frequency Range	Electric Field Strength [V/m]	Magnetic Field Strength [A/m]	Power Density [mW/cm ²]	Averaging Time [minute]
Limits for General Population / Uncontrolled Exposure				
0.3 ~ 1.34	614	1.63	*(100)	30
1.34 ~ 30	824/f	2.19/f	*(180/f ²)	30
30 ~ 300	27.5	0.073	0.2	30
300 ~ 1 500	/	/	f/1 500	30
1 500 ~ 15 000	/	/	1	30

f=frequency in MHz, *= plane-wave equivalent power density

MPE (Maximum Permissible Exposure) Prediction

Predication of MPE limit at a given distance: Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S = PG/4\pi R^2 \quad (\Rightarrow R = \sqrt{PG/4\pi S})$$

S = power density [mW/cm²]

P = Power input to antenna [mW]

G = Power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna [cm]

2. RF Exposure Compliance Issue

The information should be included in the user's manual:

This appliance and its antenna must not be co-located or operation in conjunction with any other antenna or transmitter. A minimum separation distance of 20 cm must be maintained between the antenna and the person for this appliance to satisfy the RF exposure requirements.

MPE Calculations : Bluetooth (BDR)

- Frequency Range : 2 402 MHz ~ 2 480 MHz
- Measured RF Output Power : 3.49 dBm
- Target Power & Tolerance 3.00 dBm & $\pm$ 1.00 dB
(Maximum : 4.00 dBm & Minimum : 2.00 dBm)
- Maximum Peak Antenna Gain : 3.40 dBi
- **Maximum Output Power for the Calculation :** 4.00 dBm

The EUT will only be used with a separation of 20 centimeters or greater between the antenna and the body of the
The MPE calculation for this exposure is shown below.

- EIRP = P + G = <u>4.00</u> dBm + <u>3.40</u> dBi = <u>7.40</u> dBm = <u>5.50</u> mW	- NOTE P : Max tuneup Power (dBm) G : Maximum Peak Antenna Gain (dBi)
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Power Density at the specific separation

- S = EIRP / (4 X R²π) = 5.50 / (4 X 20² X π) = <u>0.001 093</u> mW/cm²	- NOTE S : Maximum Power Density (mW/cm²) EIRP : Equivalent Isotropic Radiated Power (mW) R : Distance to the center of the radiation of the antenna (<u>20</u> cm)
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MPE Calculations : Bluetooth (EDR)

- Frequency Range : 2 402 MHz ~ 2 480 MHz
- Measured RF Output Power : 4.84 dBm
- Target Power & Tolerance 4.00 dBm & $\pm$ 1.00 dB
(Maximum : 5.00 dBm & Minimum : 3.00 dBm)
- Maximum Peak Antenna Gain : 3.40 dBi
- **Maximum Output Power for the Calculation :** 5.00 dBm

The EUT will only be used with a separation of 20 centimeters or greater between the antenna and the body of the
The MPE calculation for this exposure is shown below.

- EIRP = P + G = <u>5.00</u> dBm + <u>3.40</u> dBi = <u>8.40</u> dBm = <u>6.92</u> mW	- NOTE P : Max tuneup Power (dBm) G : Maximum Peak Antenna Gain (dBi)
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Power Density at the specific separation

- S = EIRP / (4 X R²π) = 6.92 / (4 X 20² X π) = <u>0.001 376</u> mW/cm²	- NOTE S : Maximum Power Density (mW/cm²) EIRP : Equivalent Isotropic Radiated Power (mW) R : Distance to the center of the radiation of the antenna (<u>20</u> cm)
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MPE Calculations : 802.11b

- Frequency Range : 2 412 MHz ~ 2 462 MHz
- Measured RF Output Power : 8.99 dBm
- Target Power & Tolerance 8.50 dBm & $\pm$ 1.00 dB
(Maximum : 9.50 dBm & Minimum : 7.50 dBm)
- Maximum Peak Antenna Gain : 5.90 dBi
- **Maximum Output Power for the Calculation :** 9.50 dBm

The EUT will only be used with a separation of 20 centimeters or greater between the antenna and the body of the
The MPE calculation for this exposure is shown below.

- EIRP = P + G = <u>9.50</u> dBm + <u>5.90</u> dBi = <u>15.40</u> dBm = <u>34.67</u> mW	- NOTE P : Max tuneup Power (dBm) G : Maximum Peak Antenna Gain (dBi)
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Power Density at the specific separation

- S = EIRP / (4 X R²π) = 34.67 / (4 X 20² X π) = <u>0.006 898</u> mW/cm²	- NOTE S : Maximum Power Density (mW/cm²) EIRP : Equivalent Isotropic Radiated Power (mW) R : Distance to the center of the radiation of the antenna (<u>20</u> cm)
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MPE Calculations : 802.11g

- Frequency Range : 2 412 MHz ~ 2 462 MHz
- Measured RF Output Power : 9.64 dBm
- Target Power & Tolerance 9.00 dBm & $\pm$ 1.00 dB
(Maximum : 10.00 dBm & Minimum : 8.00 dBm)
- Maximum Peak Antenna Gain : 5.90 dBi
- **Maximum Output Power for the Calculation :** 10.00 dBm

The EUT will only be used with a separation of 20 centimeters or greater between the antenna and the body of the
The MPE calculation for this exposure is shown below.

- EIRP = P + G = <u>10.00</u> dBm + <u>5.90</u> dBi = <u>15.90</u> dBm = <u>38.90</u> mW	- NOTE P : Max tuneup Power (dBm) G : Maximum Peak Antenna Gain (dBi)
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Power Density at the specific separation

- S = EIRP / (4 X R²π) = 38.90 / (4 X 20² X π) = <u>0.007 74</u> mW/cm²	- NOTE S : Maximum Power Density (mW/cm²) EIRP : Equivalent Isotropic Radiated Power (mW) R : Distance to the center of the radiation of the antenna (<u>20</u> cm)
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MPE Calculations : 802.11n_HT20

- Frequency Range : 2 412 MHz ~ 2 462 MHz
- Measured RF Output Power : 9.64 dBm
- Target Power & Tolerance 9.50 dBm & $\pm$ 1.00 dB
(Maximum : 10.50 dBm & Minimum : 8.50 dBm)
- Maximum Peak Antenna Gain : 5.90 dBi
- **Maximum Output Power for the Calculation :** 10.50 dBm

The EUT will only be used with a separation of 20 centimeters or greater between the antenna and the body of the
The MPE calculation for this exposure is shown below.

- EIRP = P + G = <u>10.50</u> dBm + <u>5.90</u> dBi = <u>16.40</u> dBm = <u>43.65</u> mW	- NOTE P : Max tuneup Power (dBm) G : Maximum Peak Antenna Gain (dBi)
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Power Density at the specific separation

- S = EIRP / (4 X R²π) = 43.65 / (4 X 20² X π) = <u>0.008 684</u> mW/cm²	- NOTE S : Maximum Power Density (mW/cm²) EIRP : Equivalent Isotropic Radiated Power (mW) R : Distance to the center of the radiation of the antenna (<u>20</u> cm)
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MPE Calculations : 802.11n_HT40

- Frequency Range : 2 422 MHz ~ 2 452 MHz
- Measured RF Output Power : 9.66 dBm
- Target Power & Tolerance 9.50 dBm & $\pm$ 1.00 dB
(Maximum : 10.50 dBm & Minimum : 8.50 dBm)
- Maximum Peak Antenna Gain : 5.90 dBi
- **Maximum Output Power for the Calculation :** 10.50 dBm

The EUT will only be used with a separation of 20 centimeters or greater between the antenna and the body of the
The MPE calculation for this exposure is shown below.

- EIRP = P + G = <u>10.50</u> dBm + <u>5.90</u> dBi = <u>16.40</u> dBm = <u>43.65</u> mW	- NOTE P : Max tuneup Power (dBm) G : Maximum Peak Antenna Gain (dBi)
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Power Density at the specific separation

- S = EIRP / (4 X R²π) = 43.65 / (4 X 20² X π) = <u>0.008 684</u> mW/cm²	- NOTE S : Maximum Power Density (mW/cm²) EIRP : Equivalent Isotropic Radiated Power (mW) R : Distance to the center of the radiation of the antenna (<u>20</u> cm)
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MPE Calculations : 802.11a (UNII-1)

- Frequency Range : 5 180 MHz ~ 5 240 MHz
- Measured RF Output Power : 8.22 dBm
- Target Power & Tolerance 8.00 dBm & $\pm$ 1.00 dB
(Maximum : 9.00 dBm & Minimum : 7.00 dBm)
- Maximum Peak Antenna Gain : 1.30 dBi
- **Maximum Output Power for the Calculation :** 9.00 dBm

The EUT will only be used with a separation of 20 centimeters or greater between the antenna and the body of the
The MPE calculation for this exposure is shown below.

- EIRP = P + G = <u>9.00</u> dBm + <u>1.30</u> dBi = <u>10.30</u> dBm = <u>10.72</u> mW	- NOTE P : Max tuneup Power (dBm) G : Maximum Peak Antenna Gain (dBi)
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Power Density at the specific separation

- S = EIRP / (4 X R²π) = 10.72 / (4 X 20² X π) = <u>0.002 132</u> mW/cm²	- NOTE S : Maximum Power Density (mW/cm²) EIRP : Equivalent Isotropic Radiated Power (mW) R : Distance to the center of the radiation of the antenna (<u>20</u> cm)
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MPE Calculations : 802.11a (UNII-2A)

- Frequency Range : 5 260 MHz ~ 5 320 MHz
- Measured RF Output Power : 7.18 dBm
- Target Power & Tolerance 7.00 dBm & $\pm$ 1.00 dB
(Maximum : 8.00 dBm & Minimum : 6.00 dBm)
- Maximum Peak Antenna Gain : 1.30 dBi
- **Maximum Output Power for the Calculation :** 8.00 dBm

The EUT will only be used with a separation of 20 centimeters or greater between the antenna and the body of the
The MPE calculation for this exposure is shown below.

- EIRP = P + G = <u>8.00</u> dBm + <u>1.30</u> dBi = <u>9.30</u> dBm = <u>8.51</u> mW	- NOTE P : Max tuneup Power (dBm) G : Maximum Peak Antenna Gain (dBi)
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Power Density at the specific separation

- S = EIRP / (4 X R²π) = 8.51 / (4 X 20² X π) = <u>0.001 693</u> mW/cm²	- NOTE S : Maximum Power Density (mW/cm²) EIRP : Equivalent Isotropic Radiated Power (mW) R : Distance to the center of the radiation of the antenna (<u>20</u> cm)
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MPE Calculations : 802.11a (UNII-2C)

- Frequency Range : 5 500 MHz ~ 5 700 MHz
- Measured RF Output Power : 8.46 dBm
- Target Power & Tolerance 7.00 dBm & $\pm$ 1.50 dB
(Maximum : 8.50 dBm & Minimum : 5.50 dBm)
- Maximum Peak Antenna Gain : 1.30 dBi
- **Maximum Output Power for the Calculation :** 8.50 dBm

The EUT will only be used with a separation of 20 centimeters or greater between the antenna and the body of the
The MPE calculation for this exposure is shown below.

- EIRP = P + G = <u>8.50</u> dBm + <u>1.30</u> dBi = <u>9.80</u> dBm = <u>9.55</u> mW	- NOTE P : Max tuneup Power (dBm) G : Maximum Peak Antenna Gain (dBi)
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Power Density at the specific separation

- S = EIRP / (4 X R²π) = 9.55 / (4 X 20² X π) = <u>0.001 9</u> mW/cm²	- NOTE S : Maximum Power Density (mW/cm²) EIRP : Equivalent Isotropic Radiated Power (mW) R : Distance to the center of the radiation of the antenna (<u>20</u> cm)
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MPE Calculations : 802.11a (UNII-3)

- Frequency Range : 5 745 MHz ~ 5 825 MHz
- Measured RF Output Power : 9.31 dBm
- Target Power & Tolerance 9.00 dBm & $\pm$ 1.00 dB
(Maximum : 10.00 dBm & Minimum : 8.00 dBm)
- Maximum Peak Antenna Gain : 1.30 dBi
- **Maximum Output Power for the Calculation :** 10.00 dBm

The EUT will only be used with a separation of 20 centimeters or greater between the antenna and the body of the
The MPE calculation for this exposure is shown below.

- EIRP = P + G = <u>10.00</u> dBm + <u>1.30</u> dBi = <u>11.30</u> dBm = <u>13.49</u> mW	- NOTE P : Max tuneup Power (dBm) G : Maximum Peak Antenna Gain (dBi)
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Power Density at the specific separation

- S = EIRP / (4 X R ² π) = 13.49 / (4 X 20 ² X π) = <u>0.002 684</u> mW/cm ²	- NOTE S : Maximum Power Density (mW/cm ²) EIRP : Equivalent Isotropic Radiated Power (mW) R : Distance to the center of the radiation of the antenna (<u>20</u> cm)
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MPE Calculations : 802.11n_HT20 (UNII-1)

- Frequency Range : 5 180 MHz ~ 5 240 MHz
- Measured RF Output Power : 8.14 dBm
- Target Power & Tolerance 8.00 dBm & $\pm$ 1.00 dB
(Maximum : 9.00 dBm & Minimum : 7.00 dBm)
- Maximum Peak Antenna Gain : 1.30 dBi
- **Maximum Output Power for the Calculation :** 9.00 dBm

The EUT will only be used with a separation of 20 centimeters or greater between the antenna and the body of the
The MPE calculation for this exposure is shown below.

- EIRP = P + G = <u>9.00</u> dBm + <u>1.30</u> dBi = <u>10.30</u> dBm = <u>10.72</u> mW	- NOTE P : Max tuneup Power (dBm) G : Maximum Peak Antenna Gain (dBi)
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Power Density at the specific separation

- S = EIRP / (4 X R²π) = 10.72 / (4 X 20² X π) = <u>0.002 132</u> mW/cm²	- NOTE S : Maximum Power Density (mW/cm²) EIRP : Equivalent Isotropic Radiated Power (mW) R : Distance to the center of the radiation of the antenna (<u>20</u> cm)
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MPE Calculations : 802.11n_HT20 (UNII-2A)

- Frequency Range : 5 260 MHz ~ 5 320 MHz
- Measured RF Output Power : 7.11 dBm
- Target Power & Tolerance 7.00 dBm & $\pm$ 1.00 dB
(Maximum : 8.00 dBm & Minimum : 6.00 dBm)
- Maximum Peak Antenna Gain : 1.30 dBi
- Maximum Output Power for the Calculation : 8.00 dBm

The EUT will only be used with a separation of 20 centimeters or greater between the antenna and the body of the
The MPE calculation for this exposure is shown below.

- EIRP = P + G = <u>8.00</u> dBm + <u>1.30</u> dBi = <u>9.30</u> dBm = <u>8.51</u> mW	- NOTE P : Max tuneup Power (dBm) G : Maximum Peak Antenna Gain (dBi)
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Power Density at the specific separation

- S = EIRP / (4 X R²π) = 8.51 / (4 X 20² X π) = <u>0.001 693</u> mW/cm²	- NOTE S : Maximum Power Density (mW/cm²) EIRP : Equivalent Isotropic Radiated Power (mW) R : Distance to the center of the radiation of the antenna (<u>20</u> cm)
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MPE Calculations : 802.11n_HT20 (UNII-2C)

- Frequency Range : 5 500 MHz ~ 5 700 MHz
- Measured RF Output Power : 8.53 dBm
- Target Power & Tolerance 7.10 dBm & $\pm$ 1.50 dB
(Maximum : 8.60 dBm & Minimum : 5.60 dBm)
- Maximum Peak Antenna Gain : 1.30 dBi
- **Maximum Output Power for the Calculation :** 8.60 dBm

The EUT will only be used with a separation of 20 centimeters or greater between the antenna and the body of the
The MPE calculation for this exposure is shown below.

- EIRP = P + G = <u>8.60</u> dBm + <u>1.30</u> dBi = <u>9.90</u> dBm = <u>9.77</u> mW	- NOTE P : Max tuneup Power (dBm) G : Maximum Peak Antenna Gain (dBi)
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Power Density at the specific separation

- S = EIRP / (4 X R²π) = 9.77 / (4 X 20² X π) = <u>0.001 944</u> mW/cm²	- NOTE S : Maximum Power Density (mW/cm²) EIRP : Equivalent Isotropic Radiated Power (mW) R : Distance to the center of the radiation of the antenna (<u>20</u> cm)
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MPE Calculations : 802.11n_HT20 (UNII-3)

- Frequency Range : 5 745 MHz ~ 5 825 MHz
- Measured RF Output Power : 9.32 dBm
- Target Power & Tolerance 8.50 dBm & $\pm$ 1.00 dB
(Maximum : 9.50 dBm & Minimum : 7.50 dBm)
- Maximum Peak Antenna Gain : 1.30 dBi
- **Maximum Output Power for the Calculation :** 9.50 dBm

The EUT will only be used with a separation of 20 centimeters or greater between the antenna and the body of the
The MPE calculation for this exposure is shown below.

- EIRP = P + G = <u>9.50</u> dBm + <u>1.30</u> dBi = <u>10.80</u> dBm = <u>12.02</u> mW	- NOTE P : Max tuneup Power (dBm) G : Maximum Peak Antenna Gain (dBi)
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Power Density at the specific separation

- S = EIRP / (4 X R²π) = 12.02 / (4 X 20² X π) = <u>0.002 392</u> mW/cm²	- NOTE S : Maximum Power Density (mW/cm²) EIRP : Equivalent Isotropic Radiated Power (mW) R : Distance to the center of the radiation of the antenna (<u>20</u> cm)
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MPE Calculations : 802.11n_HT40 (UNII-1)

- Frequency Range : 5 190 MHz ~ 5 230 MHz
- Measured RF Output Power : 4.36 dBm
- Target Power & Tolerance 4.00 dBm & $\pm$ 1.00 dB
(Maximum : 5.00 dBm & Minimum : 3.00 dBm)
- Maximum Peak Antenna Gain : 1.30 dBi
- **Maximum Output Power for the Calculation :** 5.00 dBm

The EUT will only be used with a separation of 20 centimeters or greater between the antenna and the body of the
The MPE calculation for this exposure is shown below.

- EIRP = P + G = <u>5.00</u> dBm + <u>1.30</u> dBi = <u>6.30</u> dBm = <u>4.27</u> mW	- NOTE P : Max tuneup Power (dBm) G : Maximum Peak Antenna Gain (dBi)
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Power Density at the specific separation

- S = EIRP / (4 X R²π) = 4.27 / (4 X 20² X π) = <u>0.000 849</u> mW/cm²	- NOTE S : Maximum Power Density (mW/cm²) EIRP : Equivalent Isotropic Radiated Power (mW) R : Distance to the center of the radiation of the antenna (<u>20</u> cm)
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MPE Calculations : 802.11n_HT40 (UNII-2A)

- Frequency Range : 5 270 MHz ~ 5 310 MHz
- Measured RF Output Power : 3.15 dBm
- Target Power & Tolerance 3.00 dBm & $\pm$ 1.00 dB
(Maximum : 4.00 dBm & Minimum : 2.00 dBm)
- Maximum Peak Antenna Gain : 1.30 dBi
- **Maximum Output Power for the Calculation :** 4.00 dBm

The EUT will only be used with a separation of 20 centimeters or greater between the antenna and the body of the
The MPE calculation for this exposure is shown below.

- EIRP = P + G = <u>4.00</u> dBm + <u>1.30</u> dBi = <u>5.30</u> dBm = <u>3.39</u> mW	- NOTE P : Max tuneup Power (dBm) G : Maximum Peak Antenna Gain (dBi)
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Power Density at the specific separation

- S = EIRP / (4 X R²π) = 3.39 / (4 X 20² X π) = <u>0.000 674</u> mW/cm²	- NOTE S : Maximum Power Density (mW/cm²) EIRP : Equivalent Isotropic Radiated Power (mW) R : Distance to the center of the radiation of the antenna (<u>20</u> cm)
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MPE Calculations : 802.11n_HT40 (UNII-2C)

- Frequency Range : 5 510 MHz ~ 5 670 MHz
- Measured RF Output Power : 3.08 dBm
- Target Power & Tolerance 2.50 dBm & $\pm$ 1.00 dB
(Maximum : 3.50 dBm & Minimum : 1.50 dBm)
- Maximum Peak Antenna Gain : 1.30 dBi
- **Maximum Output Power for the Calculation :** 3.50 dBm

The EUT will only be used with a separation of 20 centimeters or greater between the antenna and the body of the
The MPE calculation for this exposure is shown below.

- EIRP = P + G = <u>3.50</u> dBm + <u>1.30</u> dBi = <u>4.80</u> dBm = <u>3.02</u> mW	- NOTE P : Max tuneup Power (dBm) G : Maximum Peak Antenna Gain (dBi)
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Power Density at the specific separation

- S = EIRP / (4 X R²π) = 3.02 / (4 X 20² X π) = <u>0.000 601</u> mW/cm²	- NOTE S : Maximum Power Density (mW/cm²) EIRP : Equivalent Isotropic Radiated Power (mW) R : Distance to the center of the radiation of the antenna (<u>20</u> cm)
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MPE Calculations : 802.11n_HT40 (UNII-3)

- Frequency Range : 5 755 MHz ~ 5 795 MHz
- Measured RF Output Power : 4.53 dBm
- Target Power & Tolerance 4.00 dBm & $\pm$ 1.00 dB
(Maximum : 5.00 dBm & Minimum : 3.00 dBm)
- Maximum Peak Antenna Gain : 1.30 dBi
- **Maximum Output Power for the Calculation :** 5.00 dBm

The EUT will only be used with a separation of 20 centimeters or greater between the antenna and the body of the
The MPE calculation for this exposure is shown below.

- EIRP = P + G = <u>5.00</u> dBm + <u>1.30</u> dBi = <u>6.30</u> dBm = <u>4.27</u> mW	- NOTE P : Max tuneup Power (dBm) G : Maximum Peak Antenna Gain (dBi)
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Power Density at the specific separation

- S = EIRP / (4 X R²π) = 4.27 / (4 X 20² X π) = <u>0.000 849</u> mW/cm²	- NOTE S : Maximum Power Density (mW/cm²) EIRP : Equivalent Isotropic Radiated Power (mW) R : Distance to the center of the radiation of the antenna (<u>20</u> cm)
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MPE Calculations : 802.11ac_VHT80 (UNII-1)

- Frequency Range : 5 210 MHz
- Measured RF Output Power : 3.07 dBm
- Target Power & Tolerance 3.00 dBm & $\pm$ 1.00 dB
(Maximum : 4.00 dBm & Minimum : 2.00 dBm)
- Maximum Peak Antenna Gain : 1.30 dBi
- **Maximum Output Power for the Calculation :** 4.00 dBm

The EUT will only be used with a separation of 20 centimeters or greater between the antenna and the body of the
The MPE calculation for this exposure is shown below.

- EIRP = P + G = <u>4.00</u> dBm + <u>1.30</u> dBi = <u>5.30</u> dBm = <u>3.39</u> mW	- NOTE P : Max tuneup Power (dBm) G : Maximum Peak Antenna Gain (dBi)
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Power Density at the specific separation

- S = EIRP / (4 X R²π) = 3.39 / (4 X 20² X π) = <u>0.000 674</u> mW/cm²	- NOTE S : Maximum Power Density (mW/cm²) EIRP : Equivalent Isotropic Radiated Power (mW) R : Distance to the center of the radiation of the antenna (<u>20</u> cm)
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MPE Calculations : 802.11ac_VHT80 (UNII-2A)

- Frequency Range : 5 290 MHz
- Measured RF Output Power : 1.70 dBm
- Target Power & Tolerance 2.00 dBm & $\pm$ 1.00 dB
(Maximum : 3.00 dBm & Minimum : 1.00 dBm)
- Maximum Peak Antenna Gain : 1.30 dBi
- **Maximum Output Power for the Calculation :** 3.00 dBm

The EUT will only be used with a separation of 20 centimeters or greater between the antenna and the body of the
The MPE calculation for this exposure is shown below.

- EIRP = P + G = <u>3.00</u> dBm + <u>1.30</u> dBi = <u>4.30</u> dBm = <u>2.69</u> mW	- NOTE P : Max tuneup Power (dBm) G : Maximum Peak Antenna Gain (dBi)
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Power Density at the specific separation

- S = EIRP / (4 X R²π) = 2.69 / (4 X 20² X π) = <u>0.000 535</u> mW/cm²	- NOTE S : Maximum Power Density (mW/cm²) EIRP : Equivalent Isotropic Radiated Power (mW) R : Distance to the center of the radiation of the antenna (<u>20</u> cm)
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MPE Calculations : 802.11ac_VHT80 (UNII-2C)

- Frequency Range : 5 530 MHz
- Measured RF Output Power : 0.38 dBm
- Target Power & Tolerance 0.00 dBm & $\pm$ 1.00 dB
(Maximum : 1.00 dBm & Minimum : -1.00 dBm)
- Maximum Peak Antenna Gain : 1.30 dBi
- Maximum Output Power for the Calculation : 1.00 dBm

The EUT will only be used with a separation of 20 centimeters or greater between the antenna and the body of the
The MPE calculation for this exposure is shown below.

- EIRP = P + G = <u>1.00</u> dBm + <u>1.30</u> dBi = <u>2.30</u> dBm = <u>1.70</u> mW	- NOTE P : Max tuneup Power (dBm) G : Maximum Peak Antenna Gain (dBi)
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Power Density at the specific separation

- S = EIRP / (4 X R²π) = 1.70 / (4 X 20² X π) = <u>0.000 338</u> mW/cm²	- NOTE S : Maximum Power Density (mW/cm²) EIRP : Equivalent Isotropic Radiated Power (mW) R : Distance to the center of the radiation of the antenna (<u>20</u> cm)
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MPE Calculations : 802.11ac_VHT80 (UNII-3)

- Frequency Range : 5 775 MHz
- Measured RF Output Power : 3.25 dBm
- Target Power & Tolerance 3.00 dBm & $\pm$ 1.00 dB
(Maximum : 4.00 dBm & Minimum : 2.00 dBm)
- Maximum Peak Antenna Gain : 1.30 dBi
- **Maximum Output Power for the Calculation :** 4.00 dBm

The EUT will only be used with a separation of 20 centimeters or greater between the antenna and the body of the
The MPE calculation for this exposure is shown below.

- EIRP = P + G = <u>4.00</u> dBm + <u>1.30</u> dBi = <u>5.30</u> dBm = <u>3.39</u> mW	- NOTE P : Max tuneup Power (dBm) G : Maximum Peak Antenna Gain (dBi)
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Power Density at the specific separation

- S = EIRP / (4 X R²π) = 3.39 / (4 X 20² X π) = <u>0.000 674</u> mW/cm²	- NOTE S : Maximum Power Density (mW/cm²) EIRP : Equivalent Isotropic Radiated Power (mW) R : Distance to the center of the radiation of the antenna (<u>20</u> cm)
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MPE Calculations : Bluetooth + WLAN 2G + WLAN 5G

The EUT will only be used with a separation of 20 centimeters or greater between the antenna and the body of the
The MPE calculation for this exposure is shown below.

Simultaneous MPE for Bluetooth and Wi-Fi

802.11n_HT40 + 802.11a + Bluetooth (EDR)

- Total (%) = $ \begin{aligned} & [802.11n_HT40 \text{ Result(mW/cm}^2) / \text{Limit(mW/cm}^2)] + \\ & [802.11a \text{ Result(mW/cm}^2) / \text{Limit(mW/cm}^2)] + \\ & [\text{EDR Result(mW/cm}^2) / \text{Limit(mW/cm}^2)] * 100 \\ & = [\underline{0.008\ 684} / 1] + \\ & \quad [\underline{0.002\ 684} / 1] + \\ & \quad [\underline{0.001\ 376} / 1] * 100 \\ & = \underline{1.274} \% \end{aligned} $	- NOTE 802.11n_HT40 + 802.11a + Bluetooth (BDR) WLAN 802.11n_HT40 = <u>0.008 684</u> mW/cm² WLAN 802.11a = <u>0.002 684</u> mW/cm² Bluetooth(EDR) = <u>0.001 376</u> mW/cm² Distance to the center of the radiation of the antenna (<u>20</u> cm) Limit : ≤ 100 %
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