

## RF EXPOSURE EVALUATION

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency(RF) Radiation as specified in §1.1307(b)

FCC ID: **2AMDJ-TS30**

### EUT Specification

|                                   |                                                                                                                                                                                                                                                                                                                |
|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>EUT</b>                        | GNSS Receiver                                                                                                                                                                                                                                                                                                  |
| <b>Frequency band (Operating)</b> | BT: 2.402GHz ~ 2.480GHz<br>WIFI: 2.412GHz ~ 2.462GHz<br>WIFI: 5.180GHz ~ 5.240GHz<br>WIFI: 5.745GHz ~ 5.825GHz<br>UHF-GMSK :410MHz-470MHz<br>LTE-Band 2: 1850.7 MHz – 1909.3 MHz<br>LTE-Band 5: 824.7 MHz – 848.3 MHz<br>LTE-Band 25: 1850.7 MHz – 1914.3 MHz<br>LTE-Band 41: 2498.5 MHz –2687.5 MHz           |
| <b>Device category</b>            | <input type="checkbox"/> Portable (<20cm separation)<br><input checked="" type="checkbox"/> Mobile (>20cm separation)                                                                                                                                                                                          |
| <b>Exposure classification</b>    | <input type="checkbox"/> Occupational/Controlled exposure (S = 5mW/cm <sup>2</sup> )<br><input checked="" type="checkbox"/> General Population/Uncontrolled exposure (S=1mW/cm <sup>2</sup> )                                                                                                                  |
| <b>Antenna diversity</b>          | <input checked="" type="checkbox"/> Single antenna<br><input type="checkbox"/> Multiple antennas<br><input type="checkbox"/> Tx diversity<br><input type="checkbox"/> Rx diversity<br><input type="checkbox"/> Tx/Rx diversity                                                                                 |
| <b>Max. output power</b>          | BR+EDR<br>BR+EDR:4.57 dBm<br>2.4G WIFI<br>IEEE 802.11b: 17.16 dBm<br>IEEE 802.11g: 14.99 dBm<br>IEEE 802.11n-HT20: 14.77 dBm<br>IEEE 802.11n-HT40: 14.96 dBm<br>5G WIFI<br>U-NII-1<br>IEEE 802.11a: 13.17 dBm<br>IEEE 802.11n HT20: 12.07 dBm<br>IEEE 802.11n HT40: 10.4 dBm<br>IEEE 802.11ac-VHT20: 12.61 dBm |

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                           | IEEE 802. 11ac-VHT 40: 10.52 dBm<br>IEEE 802. 11ac-VHT 80: 7.82 dBm<br>U-NII-3<br>IEEE 802.11a: 12.2 dBm<br>IEEE 802.11n HT20: 10.83 dBm<br>IEEE 802.11n HT40: 10.61 dBm<br>IEEE 802. 11ac-VHT 20: 10.82 dBm<br>IEEE 802. 11ac-VHT 40: 10.65 dBm<br>IEEE 802. 11ac-VHT 80: 9.08 dBm<br>UHF-GMSK: 32.62 dBm<br>LTE-Band 2: 23.47 dBm<br>LTE-Band 5: 20.17 dBm<br>LTE-Band 25: 24.46 dBm<br>LTE-Band 41: 22.59 dBm |
| <b>Antenna gain (Max)</b> | BR+EDR: 1.33 dBi<br>2.4G WIFI: 1.33 dBi<br>5G WIFI U-NII-1: 0.31 dBi<br>5G WIFI U-NII-3: -0.86 dBi<br>UHF-GMSK: 4.29 dBi<br>LTE-Band 2: 1.09 dBi<br>LTE-Band 5: -0.69 dBi<br>LTE-Band 25: 1.93 dBi<br>LTE-Band 41: 0.74 dBi                                                                                                                                                                                      |
| <b>Evaluation applied</b> | <input checked="" type="checkbox"/> MPE Evaluation<br><input type="checkbox"/> SAR Evaluation                                                                                                                                                                                                                                                                                                                    |

## Limits for Maximum Permissible Exposure(MPE)

| Frequency Range(MHz)                                         | Electric Field Strength(V/m) | Magnetic Field Strength(A/m) | Power Density(mW/cm <sup>2</sup> ) | Average Time |
|--------------------------------------------------------------|------------------------------|------------------------------|------------------------------------|--------------|
| <b>(A) Limits for Occupational/Control Exposures</b>         |                              |                              |                                    |              |
| <b>300-1500</b>                                              | --                           | --                           | <b>F/300</b>                       | <b>6</b>     |
| <b>1500-100000</b>                                           | --                           | --                           | <b>5</b>                           | <b>6</b>     |
| <b>(B) Limits for General Population/Uncontrol Exposures</b> |                              |                              |                                    |              |
| <b>300-1500</b>                                              | --                           | --                           | <b>F/1500</b>                      | <b>6</b>     |
| <b>1500-100000</b>                                           | --                           | --                           | <b>1</b>                           | <b>30</b>    |

## Friis transmission formula: $P_d = (P_{out} * G) / (4 * \pi * R^2)$

Where

$P_d$  = Power density in mW/cm<sup>2</sup>,  $P_{out}$  = output power to antenna in mW.

G = gain of antenna in linear scale,  $\pi = 3.1416$

R = distance between observation point and center of the radiator in cm = 20cm

$P_d$  the limit of MPE, 1mW/cm<sup>2</sup>. If we know the maximum gain of the antenna

and total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

For multiple RF sources: Multiple RF sources are exempt if:  
in the case of fixed RF sources operating in the same time-averaging period, or  
of multiple mobile or portable RF sources within a device operating in the same  
time averaging period, if the sum of the fractional contributions to the applicable  
thresholds is less than or equal to 1 as indicated in the following equation

$$\sum_{k=1}^c \frac{Evaluated_k}{Exposure\ Limit_k} \leq 1$$

$Evaluated_k$ : the maximum reported SAR or MPE of fixed, mobile, or portable RF source k either in the device or at the transmitter site from an existing evaluation at the location of exposure.

$Exposure\ Limit_k$ : either the general population/uncontrolled maximum permissible exposure (MPE) or specific Absorption rate (SAR) limit for each fixed, mobile, or portable RF source k.

## Measurement Result

General Population/Uncontrolled:

| Operation Mode                | Channel Frequency (MHz) | Max Measured Power (dBm) | Tune up tolerance (dBm) | Max tune up conducted power (dBm) | Output Peak power (mW) | Ant. Gain (dBi) | Ant. Gain (numeric) | Power density at 20cm (mW/cm <sup>2</sup> ) | Power density Limits (mW/cm <sup>2</sup> ) | Results |
|-------------------------------|-------------------------|--------------------------|-------------------------|-----------------------------------|------------------------|-----------------|---------------------|---------------------------------------------|--------------------------------------------|---------|
| BR+EDR (2DH5)                 | 2480                    | 4.57                     | 5±1                     | 6                                 | 3.981                  | 1.33            | 1.358               | 0.001076                                    | 1                                          | PASS    |
| 2.4GHz WIFI (802.11b)         | 2412                    | 17.16                    | 17±1                    | 18                                | 63.096                 | 1.33            | 1.358               | 0.017050                                    | 1                                          | PASS    |
| 5180 MHz to 5240MHz (802.11a) | 5240                    | 13.17                    | 13±1                    | 14                                | 25.119                 | 0.31            | 1.074               | 0.005367                                    | 1                                          | PASS    |
| 5745 MHz to 5825MHz (802.11a) | 5745                    | 12.2                     | 12±1                    | 13                                | 19.953                 | -0.86           | 0.820               | 0.003256                                    | 1                                          | PASS    |
| LTE-Band 2                    | 1857.5                  | 23.47                    | 23±1                    | 24                                | 251.19                 | 1.09            | 1.285               | 0.064227                                    | 1                                          | PASS    |
| LTE-Band 5                    | 829                     | 20.17                    | 20±1                    | 21                                | 125.89                 | -0.69           | 0.853               | 0.021366                                    | 0.558                                      | PASS    |
| LTE-Band 25                   | 1857.5                  | 24.46                    | 24±1                    | 25                                | 316.23                 | 1.93            | 1.560               | 0.098111                                    | 1                                          | PASS    |
| LTE-Band 41                   | 2503.5                  | 22.59                    | 23±1                    | 24                                | 251.19                 | 0.74            | 1.186               | 0.059254                                    | 1                                          | PASS    |

Occupational/Controlled:

| Operation Mode   | Channel Frequency (MHz) | Max Measured Power (dBm) | Tune up tolerance (dBm) | Max tune up conducted power (dBm) | Output Peak power (mW) | Ant. Gain (dBi) | Ant. Gain (numeric) | Power density at 20cm (mW/cm <sup>2</sup> ) | Power density Limits (mW/cm <sup>2</sup> ) | Results |
|------------------|-------------------------|--------------------------|-------------------------|-----------------------------------|------------------------|-----------------|---------------------|---------------------------------------------|--------------------------------------------|---------|
| UHF (410-470MHz) | 410.00625               | 32.62                    | 32±1                    | 33                                | 1995.26                | 4.29            | 2.685               | 1.0659                                      | 1.3667                                     | PASS    |

Maximum Simultaneous transmission MPE Ratio for Bluetooth & WIFI & UHF & LTE

| Maximum MPE ratio (Bluetooth) | Maximum MPE ratio (WIFI) | Maximum MPE ratio (LTE) | Maximum MPE ratio (UHF) | Σ MPE ratios | Limit | Results |
|-------------------------------|--------------------------|-------------------------|-------------------------|--------------|-------|---------|
| 0.001076                      | 0.017050                 | 0.098111                | 0.779908                | 0.896145     | 1.000 | Pass    |

No need to test SAR.

Signature:



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Date: 2026-09-30