# FCC RF Exposure Report

## FCC ID: 2ADEN-INTRALOT-GNN2

**Project No.** : 1712054
**Equipment** : Genion II
**Test Model** : PN223
**Series Model** : PN323, PN224, PN324, PN223XXXXXXXXXXXXXXXX, PN323XXXXXXXXXXXXXXXX,PN224XXXXXXXXXXXXXXXX, PN324XXXXXXXXXXXXXXXX(where X may be any alphanumeric character , blank or "-".)
**Applicant** : INTRALOT S.A.
**Address** : 64, Kifissias Ave. & 3, Premetis Str. 15125 Athens, Greece

**According:** FCC Part 2, Subpart J (§2.1093)
KDB 447498 D01 General RF Exposure Guidance v06
IEEE Std C95.1-2005

**Authorized Signatory** : _____
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# Introduction

This document describes genion II is a compact and multi-functional terminal and a paperless access point device with WLAN radio function which the relevant RF output power to meet the FCC criteria for specific absorption rate (SAR) when human body is close to the device. Nevertheless, this document also provides the design concept, user scenario, target power and SAR evaluation test exclusion results for this describes genion II device.

There is 802.11 b/g/n 802.11a/n20/n40/ac20/ac40/ac80 functions in genion II is a compact and multi-functional terminal FCC ID:2ADEN-INTRALOT-GNN and these detail technologies are listed in the table 1-1.

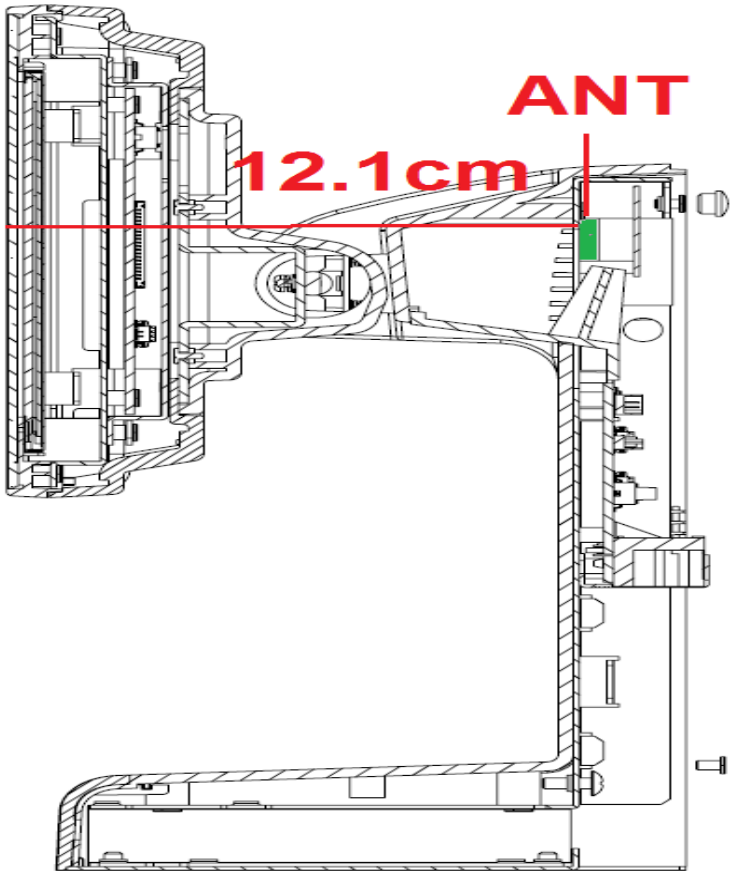
**Table 1-1** EUT RF Technology Table

| Band | Transmit Frequency (MHz) |
|---|---|
| 802.11 b/g/n20/n40 | 2412 ~ 2462 |
| 802.11a/n20/n40/ac20/ac40/ac80 | 5180~5805 |

**Antenna configuration and RF Power Spec**

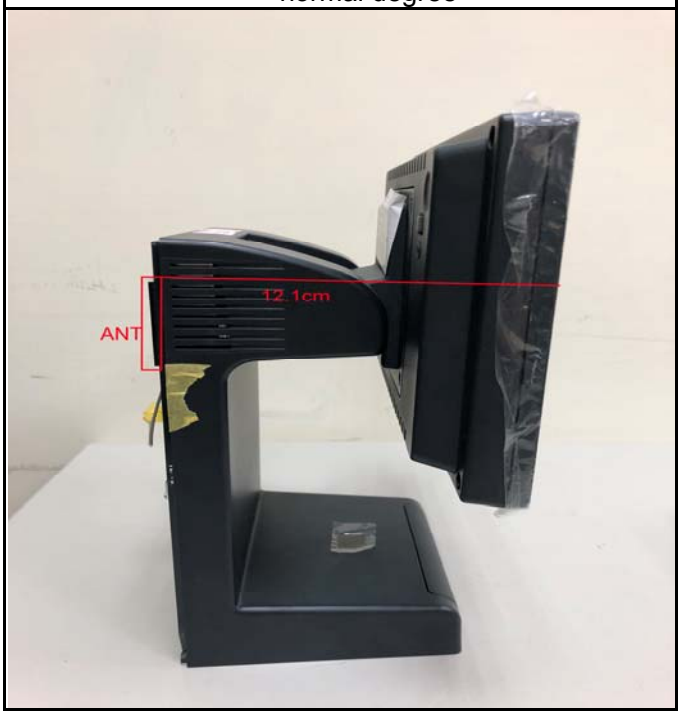
| Antenna Status | Mode | Power Spec | Max Tune up Power |
|---|---|---|---|
| **Ant 0** | **802.11b** | **12.5 ± 1 dBm** | **13.5dBm** |
| | 802.11g | 12 ± 1 dBm | 13 dBm |
| | 802.11n HT20 | 10 ± 1 dBm | 11 dBm |
| | 802.11n HT40 | 10 ± 1 dBm | 11 dBm |
| | **802.11a** | **10.5 ± 1 dBm** | **11.5 dBm** |
| | 802.11n HT20 | 10.5 ± 1 dBm | 11.5 dBm |
| | 802.11n HT40 | 10.5 ± 1 dBm | 11.5 dBm |
| | 802.11ac VHT20 | 9 ± 1 dBm | 10 dBm |
| | 802.11ac VHT40 | 9 ± 1 dBm | 10 dBm |
| | 802.11ac VHT80 | 9 ± 1 dBm | 10 dBm |

# Antenna description

| Antenna Location |
| --- |
|  |

The outlook shown in the figure normal degree and strict degree dimension of this Genion PN223.

normal degree




strict degree

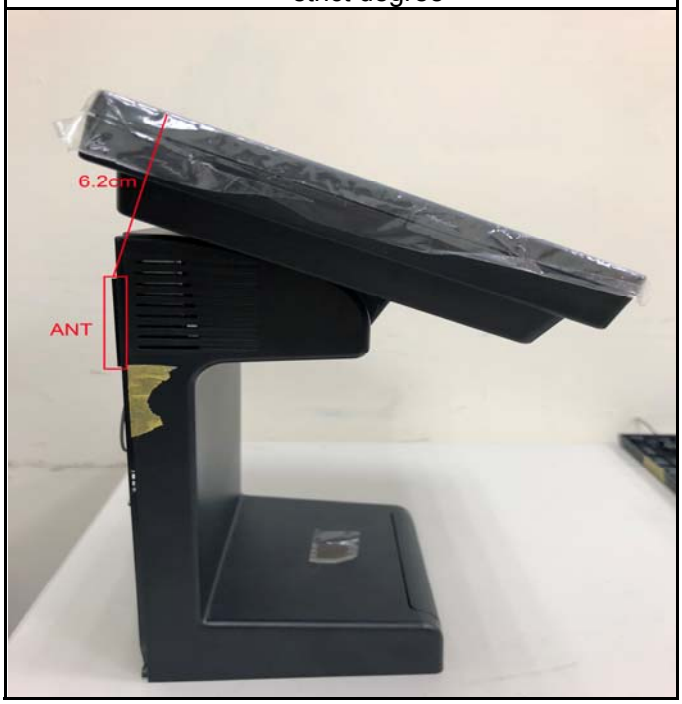


**Table for Filed Antenna:**

For 2.4G WLAN:

| Ant. | Brand | Test Model | Antenna Type | Connector | Gain (dBi) |
|---|---|---|---|---|---|
| 1 | An jie | AJDP1J-C0022 | PIFA | I-PEX_I | 5.5 |

For 5G RLAN:

| Ant. | Brand | Model Name | Antenna Type | Connector | Gain (dBi) | Note |
|---|---|---|---|---|---|---|
| 1 | An jie | AJDP1J-C0022 | PIFA | I-PEX_I | 3.55 | Band 1 |
| | | | | | 4.9 | Band 2 |
| | | | | | 6.58 | Band 3 |
| | | | | | 6.58 | Band 4 |

## RF EXPOSURE

**Appendix A**

***SAR Test Exclusion Thresholds* for 100 MHz – 6 GHz and ≤ 50 mm**

Approximate SAR Test Exclusion Power Thresholds at Selected Frequencies and Test Separation Distances are illustrated in the following Table. The equation and threshold in 4.3.1 must be applied to determine SAR test exclusion.

| MHz | 5 | 10 | 15 | 20 | 25 | mm |
|---|---|---|---|---|---|---|
| 150 | 39 | 77 | 116 | 155 | 194 | *SAR Test Exclusion Threshold* (mW) |
| 300 | 27 | 55 | 82 | 110 | 137 | |
| 450 | 22 | 45 | 67 | 89 | 112 | |
| 835 | 16 | 33 | 49 | 66 | 82 | |
| 900 | 16 | 32 | 47 | 63 | 79 | |
| 1500 | 12 | 24 | 37 | 49 | 61 | |
| 1900 | 11 | 22 | 33 | 44 | 54 | |
| 2450 | 10 | 19 | 29 | 38 | 48 | |
| 3600 | 8 | 16 | 24 | 32 | 40 | |
| 5200 | 7 | 13 | 20 | 26 | 33 | |
| 5400 | 6 | 13 | 19 | 26 | 32 | |
| 5800 | 6 | 12 | 19 | 25 | 31 | |

| MHz | 30 | 35 | 40 | 45 | 50 | mm |
|---|---|---|---|---|---|---|
| 150 | 232 | 271 | 310 | 349 | 387 | *SAR Test Exclusion Threshold* (mW) |
| 300 | 164 | 192 | 219 | 246 | 274 | |
| 450 | 134 | 157 | 179 | 201 | 224 | |
| 835 | 98 | 115 | 131 | 148 | 164 | |
| 900 | 95 | 111 | 126 | 142 | 158 | |
| 1500 | 73 | 86 | 98 | 110 | 122 | |
| 1900 | 65 | 76 | 87 | 98 | 109 | |
| 2450 | 57 | 67 | 77 | 86 | 96 | |
| 3600 | 47 | 55 | 63 | 71 | 79 | |
| 5200 | 39 | 46 | 53 | 59 | 66 | |
| 5400 | 39 | 45 | 52 | 58 | 65 | |
| 5800 | 37 | 44 | 50 | 56 | 62 | |

**Note**: 10-g Extremity SAR Test Exclusion Power Thresholds are 2.5 times higher than the 1-g *SAR Test Exclusion Thresholds* indicated above. These thresholds do not apply, by extrapolation or other means, to occupational exposure limits.

## CALCULATION RESULTS

According to KDB 447498 section 4.3.1, the 1-g SAR test exclusion thresholds at test separation distance ≤ 50 mm are determined by:
[(max. power of channel, including tune-up tolerance, mW) / (min. test separation distance, mm)] *•[√f(GHz)] ≤ 3.0

The tune-up power is 12.5 dBm +/- 1dB, therefore the highest tune-up power is 13.50 dBm (22.39mW),Frequency 2412MHz.
so
(22.39mW / 50mm)*(2.412G^0.5)=0.695
[(max. power of channel, including tune-up tolerance, mW) / (min. test separation distance, mm)] *·[√ f(GHz)] = 0.695 < 3.0
Therefore, standalone SAR are not required.

The tune-up power is 10.5 dBm +/- 1dB, therefore the highest tune-up power is 11.50 dBm (22.39mW),Frequency MHz.
so
(14.13mW / 50mm)*(5.24G^0.5)=0.647
[(max. power of channel, including tune-up tolerance, mW) / (min. test separation distance, mm)] *·[√ f(GHz)] = 0.647 < 3.0
Therefore, standalone SAR are not required.

| Frequency (MHz) | Average Power (dBm) | Tune up (dBm) | Average Power (mW) | Distance (mm) | Limit (mW) |
|---|---|---|---|---|---|
| 2412 | 13.19 | 13.50 | 22.39 | 50 | 96 |
| 5240 | 11.45 | 11.50 | 14.13 | 50 | 66 |

Note: The device is calculation with the strict degree distance. terefore use 50mm calculation.

**CONCLUSION**
**No SAR evaluation required since transmitter power is below FCC threshold.**