

TEST REPORT

FCC MPE Test for IT109B016CA
Certification

APPLICANT

DKK North America, Inc.

REPORT NO.

HCT-RF-2408-FC019

DATE OF ISSUE

October 2, 2024

Tested by
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Technical Manager
Jong Seok Lee



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REPORT NO.
HCT-RF-2408-FC019

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Applicant **DKK North America, Inc.**
8105 Rasor Blvd, Suite 222, Plano, TX USA 75024

Product Name 700/800 0.5W Public Safety BDA
Model Name IT109B016CA

FCC ID 2BKJD-IT109B016-UA

Date of Test July 10, 2024 ~ September 09, 2024

Location of Test Permanent Testing Lab On Site Testing
(Address: 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, Republic of Korea)

Test Standard Used CFR 47 Part 2.1091

Test Results PASS

Manufacturer **innertron**
301, Harmony-ro, Yeonsu-gu, Incheon City 22014 Korea

REVISION HISTORY

The revision history for this test report is shown in table.

| Revision No. | Date of Issue | Description |
|--------------|------------------|-----------------|
| 0 | October 02, 2024 | Initial Release |

Notice

Content

Engineering Statement:

The measurements shown in this report were made in accordance with the procedures indicated, and the emissions from this equipment were found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them. It is further stated that upon the basis of the measurements made, the equipment tested is capable of operation in accordance with the requirements of the FCC Rules under normal use and maintenance.

The results shown in this test report only apply to the sample(s), as received, provided by the applicant, unless otherwise stated.

The test results have only been applied with the test methods required by the standard(s).

The laboratory is not accredited for the test results marked *.

Information provided by the applicant is marked **.

Test results provided by external providers are marked ***.

When confirmation of authenticity of this test report is required, please contact www.hct.co.kr

The test results in this test report are not associated with the ((KS Q) ISO/IEC 17025) accreditation by KOLAS (Korea Laboratory Accreditation Scheme) / A2LA (American Association for Laboratory Accreditation) that are under the ILAC (International Laboratory Accreditation Cooperation) Mutual Recognition Agreement (MRA).

RF Exposure Statement**1. LIMITS**

According to § 1.1310 and § 2.1091 RF exposure is calculated.

(B) Limits for General Population/Uncontrolled Exposures

| Frequency range (MHz) | Electric field Strength (V/m) | Magnetic field Strength (A/m) | Power density (mW/cm ²) | Averaging time (minutes) |
|--------------------------|----------------------------------|----------------------------------|--|-----------------------------|
| 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 - 1500..... | | | f/1500 | 30 |
| 1500 - 100.000..... | | | 1.0 | 30 |

F = frequency in MHz

= Plane-wave equivalent power density

2. MAXIMUM PERMISSIBLE EXPOSURE Prediction

Prediction of MPE limit at a given distance

$$S = PG/4\pi R^2$$

S = Power density

P = power input to antenna

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

3. RESULTS

[Uplink]

- Public Safety Narrowband

| | | |
|---|--------|--------------------|
| Max Peak output Power at antenna input terminal | 25.50 | dBm |
| Max Peak output Power at antenna input terminal | 354.81 | mW |
| Prediction distance | 90.00 | cm |
| Prediction frequency | 799.00 | MHz |
| Antenna Gain(typical) | 9.00 | dBi |
| Antenna Gain(numeric) | 7.94 | - |
| Power density at prediction frequency(S) | 0.0277 | mW/cm ² |
| MPE limit for uncontrolled exposure at prediction frequency | 0.5327 | mW/cm ² |

- NPSPAC

| | | |
|---|--------|--------------------|
| Max Peak output Power at antenna input terminal | 25.50 | dBm |
| Max Peak output Power at antenna input terminal | 354.81 | mW |
| Prediction distance | 90.00 | cm |
| Prediction frequency | 806.00 | MHz |
| Antenna Gain(typical) | 9.00 | dBi |
| Antenna Gain(numeric) | 7.94 | - |
| Power density at prediction frequency(S) | 0.0277 | mW/cm ² |
| MPE limit for uncontrolled exposure at prediction frequency | 0.5373 | mW/cm ² |

- B/ILT; SMR

| | | |
|---|--------|--------------------|
| Max Peak output Power at antenna input terminal | 25.50 | dBm |
| Max Peak output Power at antenna input terminal | 354.81 | mW |
| Prediction distance | 90.00 | cm |
| Prediction frequency | 809.00 | MHz |
| Antenna Gain(typical) | 9.00 | dBi |
| Antenna Gain(numeric) | 7.94 | - |
| Power density at prediction frequency(S) | 0.0277 | mW/cm ² |
| MPE limit for uncontrolled exposure at prediction frequency | 0.5393 | mW/cm ² |

- ESMR

| | | |
|---|--------|--------------------|
| Max Peak output Power at antenna input terminal | 25.50 | dBm |
| Max Peak output Power at antenna input terminal | 354.81 | mW |
| Prediction distance | 90.00 | cm |
| Prediction frequency | 817.00 | MHz |
| Antenna Gain(typical) | 9.00 | dBi |
| Antenna Gain(numeric) | 7.94 | - |
| Power density at prediction frequency(S) | 0.0277 | mW/cm ² |
| MPE limit for uncontrolled exposure at prediction frequency | 0.5447 | mW/cm ² |

[Downlink]**- Public Safety Narrowband**

| | | |
|---|--------|--------------------|
| Max Peak output Power at antenna input terminal | 28.50 | dBm |
| Max Peak output Power at antenna input terminal | 707.95 | mW |
| Prediction distance | 100.00 | cm |
| Prediction frequency | 769.00 | MHz |
| Antenna Gain(typical) | 8.00 | dBi |
| Antenna Gain(numeric) | 6.31 | - |
| Power density at prediction frequency(S) | 0.0355 | mW/cm ² |
| MPE limit for uncontrolled exposure at prediction frequency | 0.5127 | mW/cm ² |

- NPSPAC

| | | |
|---|--------|--------------------|
| Max Peak output Power at antenna input terminal | 28.50 | dBm |
| Max Peak output Power at antenna input terminal | 707.95 | mW |
| Prediction distance | 100.00 | cm |
| Prediction frequency | 851.00 | MHz |
| Antenna Gain(typical) | 8.00 | dBi |
| Antenna Gain(numeric) | 6.31 | - |
| Power density at prediction frequency(S) | 0.0355 | mW/cm ² |
| MPE limit for uncontrolled exposure at prediction frequency | 0.5673 | mW/cm ² |

- B/ILT; SMR

| | | |
|---|--------|--------------------|
| Max Peak output Power at antenna input terminal | 28.50 | dBm |
| Max Peak output Power at antenna input terminal | 707.95 | mW |
| Prediction distance | 100.00 | cm |
| Prediction frequency | 854.00 | MHz |
| Antenna Gain(typical) | 8.00 | dBi |
| Antenna Gain(numeric) | 6.31 | - |
| Power density at prediction frequency(S) | 0.0355 | mW/cm ² |
| MPE limit for uncontrolled exposure at prediction frequency | 0.5693 | mW/cm ² |

- ESMR

| | | |
|---|--------|--------------------|
| Max Peak output Power at antenna input terminal | 28.50 | dBm |
| Max Peak output Power at antenna input terminal | 707.95 | mW |
| Prediction distance | 100.00 | cm |
| Prediction frequency | 862.00 | MHz |
| Antenna Gain(typical) | 8.00 | dBi |
| Antenna Gain(numeric) | 6.31 | - |
| Power density at prediction frequency(S) | 0.0355 | mW/cm ² |
| MPE limit for uncontrolled exposure at prediction frequency | 0.5747 | mW/cm ² |

Simultaneous band emission conditions**[Uplink]**

| Band | MPE Ratio (Power density / Limit) | Sum of MPE Ratio | |
|--------------------------|-----------------------------------|------------------|----------|
| Public Safety Narrowband | 0.0520 | 0.2057 | ≤ 1 |
| NPSPAC | 0.0515 | | |
| B/ILT; SMR | 0.0513 | | |
| ESMR | 0.0508 | | |

[Downlink]

| Band | MPE Ratio (Power density / Limit) | Sum of MPE Ratio | |
|--------------------------|-----------------------------------|------------------|----------|
| Public Safety Narrowband | 0.0693 | 0.2563 | ≤ 1 |
| NPSPAC | 0.0627 | | |
| B/ILT; SMR | 0.0624 | | |
| ESMR | 0.0619 | | |

Note

1. The result of each band was applied to the worst value.
2. MPE ratios are calculated as
$$[(\text{Power density1} / \text{MPE Limit}) + (\text{Power density2} / \text{MPE Limit}) + \dots] \leq 1$$