

TEST REPORT

FCC MPE Test for IT109B005-UA
Certification

APPLICANT
innertron

REPORT NO.
HCT-RF-2309-FC010

DATE OF ISSUE
September 22, 2023

Tested by
Sang Su Lee



Technical Manager
Jong Seok Lee



HCT CO., LTD.
BongJai Huh
BongJai Huh / CEO



HCT Co., Ltd.

74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383 KOREA
Tel. +82 31 634 6300 Fax. +82 31 645 6401

**TEST
REPORT**

FCC MPE Test for
IT109B005-UA

REPORT NO.

HCT-RF-2309-FC010

DATE OF ISSUE

September 22, 2023

Additional Model

-

Applicant

innertron

301, Harmony-ro, Yeonsu-gu, Incheon City 22014 Korea

**Eut Type
Model Name**

0.5W Public Safety Signal Booster
IT109B005-UA

FCC ID

2BCYP-IT7080BDA27DA

The result shown in this test report refer only to the sample(s) tested unless otherwise stated.

This test results were applied only to the test methods required by the standard.

REVISION HISTORY

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

Revision No.	Date of Issue	Description
0	September 22, 2023	Initial Release

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.

Test Report Statement:

The above Test Report is not related to the accredited test result by (KS Q) ISO/IEC 17025 and KOLAS(Korea Laboratory Accreditation Scheme) / A2LA(American Association for Laboratory Accreditation), which signed the ILAC-MRA.

If this report is required to confirmation of authenticity, please contact to www.hct.co.kr

RF Exposure Statement

1. Limit

According to § 1.1310, § 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

- 700 MHz (799 ~ 805) – Uplink, 1 Carrier

Max Peak output Power at antenna input terminal	25.50	dBm
Max Peak output Power at antenna input terminal	354.81	mW
Prediction distance	70.00	cm
Prediction frequency	799.00	MHz
Antenna Gain(typical)	12.00	dBi
Antenna Gain(numeric)	15.85	-
Power density at prediction frequency(S)	0.0913	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	0.5327	mW/cm ²

- 800 MHz (806 ~ 816) – Uplink, 1 Carrier

Max Peak output Power at antenna input terminal	25.50	dBm
Max Peak output Power at antenna input terminal	354.81	mW
Prediction distance	70.00	cm
Prediction frequency	806.00	MHz
Antenna Gain(typical)	12.00	dBi
Antenna Gain(numeric)	15.85	-
Power density at prediction frequency(S)	0.0913	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	0.5373	mW/cm ²

- 800 MHz (817 ~ 824) – Uplink, 1 Carrier

Max Peak output Power at antenna input terminal	25.50	dBm
Max Peak output Power at antenna input terminal	354.81	mW
Prediction distance	70.00	cm
Prediction frequency	817.00	MHz
Antenna Gain(typical)	12.00	dBi
Antenna Gain(numeric)	15.85	-
Power density at prediction frequency(S)	0.0913	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	0.5447	mW/cm ²

- 700 MHz (769 ~ 775) – Downlink, 1 Carrier

Max Peak output Power at antenna input terminal	28.50	dBm
Max Peak output Power at antenna input terminal	707.95	mW
Prediction distance	70.00	cm
Prediction frequency	769.00	MHz
Antenna Gain(typical)	7.00	dBi
Antenna Gain(numeric)	5.01	-
Power density at prediction frequency(S)	0.0576	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	0.5127	mW/cm ²

- 800 MHz (851 ~ 861) – Downlink, 1 Carrier

Max Peak output Power at antenna input terminal	28.50	dBm
Max Peak output Power at antenna input terminal	707.95	mW
Prediction distance	70.00	cm
Prediction frequency	851.00	MHz
Antenna Gain(typical)	7.00	dBi
Antenna Gain(numeric)	5.01	-
Power density at prediction frequency(S)	0.0576	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	0.5673	mW/cm ²

- 800 MHz (862 ~ 869) – Downlink, 1 Carrier

Max Peak output Power at antenna input terminal	28.50	dBm
Max Peak output Power at antenna input terminal	707.95	mW
Prediction distance	70.00	cm
Prediction frequency	862.00	MHz
Antenna Gain(typical)	7.00	dBi
Antenna Gain(numeric)	5.01	-
Power density at prediction frequency(S)	0.0576	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	
799 ~ 805	0.1714	0.5089	≤ 1
806 ~ 816	0.1699		
817 ~ 824	0.1676		

[Downlink]

Band	MPE Ratio (Power density / Limit)	Sum of MPE Ratio	
769 ~ 775	0.1124	0.3141	≤ 1
851 ~ 861	0.1015		
862 ~ 869	0.1002		

*Note

1. The result of each band was applied to the worst value.
2. MPE ratios are calculated as

$$[(\text{Power density}_1 / \text{MPE Limit}) + [(\text{Power density}_2 / \text{MPE Limit}) + \dots] \leq 1$$